Health Practitioners' Handbook

Prevention, Diagnosis & Treatment

for Crop Protection Products

CropLife INDIA

Health Practitioners' Handbook

Prevention, Diagnosis & Treatment

for Crop Protection Products

Disclaimer: This Handbook is being distributed free of cost as a service to the medical professionals for purposes of information only. Medical practitioners are advised to take decisions based on their own clinical experience and judgment. While every care has been taken while compiling and publishing the information contained in this handbook, CropLife India or its principals and affiliates shall not be responsible for any errors or omissions or for any consequences arising out of reliance on its contents.

भागीरथ चौधरी
BHAGIRATH CHOUDHARY

कृषि एवं किसान कल्याण
राज्यमंत्री
भारत सरकार
MINISTER OF STATE FOR AGRICULTURE
& FARMERS WELFARE
GOVERNMENT OF INDIA

संदेश

मुझे यह जानकर बहुत प्रसन्नता हुई कि क्रॉपलाइफ इंडिया ने ***"हेल्थ प्रैक्टिशनर्स हैंडबुक: रोकथाम, निदान एवं उपचार"*** तैयार की है, जिसका उद्देश्य कीटनाशक संपर्क/विषाक्तता के मामलों में चिकित्सकों एवं स्वास्थ्यकर्मियों को समय पर निदान और उपचार में सहयोग प्रदान करना है।

भारत जैसे कृषि प्रधान देश में, हेल्थ प्रैक्टिशनर्स खेती-किसानी से जुड़े समुदायों के स्वास्थ्य संरक्षण, विशेषकर कीटनाशक संपर्क अथवा विषाक्तता के मामलों में समय पर पहचान, निदान और उपचार में अत्यंत महत्वपूर्ण भूमिका निभाते हैं। इस प्रकार की व्यावहारिक, विश्वसनीय और उपयोगी संदर्भ सामग्री चिकित्सकों एवं स्वास्थ्यकर्मियों को ऐसे मामलों में प्रभावी ढंग से कार्य करने में सहायक हो सकती है तथा ग्रामीण समुदायों में बेहतर स्वास्थ्य परिणाम सुनिश्चित करने में योगदान दे सकती है।

मैं इस महत्त्वपूर्ण पहल के लिए क्रॉपलाइफ इंडिया की सराहना करता हूँ, जो प्रोडक्ट स्टूअर्डशिप, किसान जागरूकता तथा फसल सुरक्षा उत्पादों के जिम्मेदार उपयोग के प्रति उसकी निरंतर प्रतिबद्धता को दर्शाती है।

मुझे विश्वास है कि यह हैंडबुक स्वास्थ्य प्रैक्टिशनर्स के लिए एक उपयोगी संदर्भ सामग्री सिद्ध होगी और जागरूकता, तत्परता तथा समयबद्ध चिकित्सीय प्रतिक्रिया को सुदृढ़ करने में महत्त्वपूर्ण योगदान देगी, जिससे किसानों और समुदायों के कल्याण को बढ़ावा मिलेगा।

मैं इस मूल्यवान हैंडबुक के व्यापक प्रसार एवं प्रभावी उपयोग के लिए अपनी हार्दिक शुभकामनाएँ प्रेषित करता हूँ।

(भागीरथ चौधरी)

Room No. 199Q, Krishi Bhawan, New Delhi-110001. Tel. : +91-11-23782343, 23388165 Fax : 23074190
Camp Office : 28, Tughlaq Crescent, New Delhi-110001. Tel. : 011-23011382, 23019287, 20843001

सत्यमेव जयते

भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
कृषि एवं किसान कल्याण विभाग
कृषि भवन नई दिल्ली - 110001
Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture & Farmers Welfare
Krishi Bhawan, New Delhi-110001

Dr. P. K. Singh
Agriculture Commissioner
Phone : +91-11-23383549, 23381012
E-mail : comm-agri@nic.in

Dated: 14.07.2026

Message

Agriculture is key to India's food security, economic growth and farmers' livelihoods. With the increasing adoption of modern agricultural practices including crop protection products, it is essential to promote awareness regarding their safe, responsible, efficient and scientific use.

I am pleased to know that CropLife India is publishing the **"Health Practitioners' Handbook: Prevention, Diagnosis and Treatment"** as a comprehensive reference resource for healthcare professionals involved in managing emergency cases of accidental exposure to crop protection products. The handbook has been thoughtfully developed to support medical practitioners with practical guidance on understanding pesticides, recommended safety precautions, identification of symptoms, timely diagnosis and appropriate treatment protocols related to accidental exposure to crop protection products.

I acknowledge and appreciate the efforts of CropLife India and the experts involved in developing this vital publication. I am confident that this handbook will strengthen the knowledge and preparedness of healthcare professionals and contribute towards improving health and safety outcomes within agricultural communities.

My best wishes for the successful publication, dissemination and effective utilization of this valuable initiative.

(P.K.Singh)

Message

It gives me immense pleasure to acknowledge that CropLife India has developed the **"Health Practitioners' Handbook: Prevention, Diagnosis & Treatment"** as a timely effort to enhance awareness and medical readiness among healthcare professionals. "It is a rare privilege to introduce a work that is as timely as it is timeless." If you are holding this book, you are already looking for a change and you have come to the right place."

Agriculture is key to India's food security, economic growth and farmers' livelihoods. With the increasing adoption of modern agricultural practices including crop protection products, it is essential to promote awareness regarding their safe, responsible, efficient and scientific use.

Although farmers are encouraged to use Crop Protection Products (CPPs) judiciously, safely and responsibly as pesticides are toxic substance, hence accidental pesticide exposure or poisoning may occur. In such situations, health practitioners play a crucial role in assisting farming communities, especially in facilitating prompt diagnosis and treatment in instances of pesticide exposure. Reference materials such as this handbook can bolster their capacity to respond effectively and promote better health outcomes in rural regions. "What makes these pages special is not just the advice, but the raw honesty behind it."

I appreciate CropLife India for this important initiative. I am confident that this handbook will serve as a useful reference resource for health practitioners and contribute to improved awareness, preparedness, and timely medical response in the interest of farmer and community well-being.

I wish CropLife India success in the dissemination of this handbook and trust that it will be utilised effectively for the benefit of health practitioners and farming communities.

डॉ. सुभाष चंद / Dr. Subhash Chand
Secretary, CIB&RC
Ministry of Agriculture & Farmers Welfare, Government of India.

Agriculture plays a very significant role in our nation's economy and food security, and our farmers are its centre stage. CropLife India always promotes the safe use of crop protection products, as ensuring the health and safety of our farming communities is our highest priority.

It gives me immense pleasure to present the **"Health Practitioners' Handbook: Prevention, Diagnosis & Treatment,"** developed by CropLife India to promote the safe, responsible, and sustainable use of crop protection products in India.

This handbook will serve as a practical, science-based reference to strengthen the knowledge and preparedness of medical practitioners and allied healthcare professionals in effectively managing accidental exposure of the pesticides.

I congratulate CropLife India and all those associated with this important initiative, and extend my best wishes for its successful dissemination and effective utilization. As Chairman of CropLife India, I am deeply committed to the philosophy of stewardship, which extends from the development of a molecule to its safe usage. We believe that maximizing agricultural productivity must go hand-in-hand with ensuring the highest standards of safety and health for our farming communities.

Ankur Aggarwal
Chairman, CropLife India

CropLife India is committed to promoting responsible crop care for the safe and sustainable development of Indian agriculture. As an association of 17 R&D-driven crop science companies, we promote the safe, responsible, and judicious use of crop protection products through stewardship, Integrated Pest Management (IPM), and science-based practices.

Although crop protection products are safe when used as directed, accidental exposure may occasionally occur. Timely diagnosis and appropriate medical treatment are essential to minimizing health risks.

The **"Health Practitioners' Handbook: Prevention, Diagnosis & Treatment**" has been developed as a practical, science-based reference to support medical practitioners and allied healthcare professionals in managing such cases effectively.

I sincerely thank Dr. Debabrata Kanungo and the CropLife India's Stewardship Committee for their support, coordination in the development of this Handbook. I hope this handbook will serve as a valuable resource for the medical fraternity and contribute to improving healthcare response and patient outcomes in cases of accidental pesticide exposure.

Durgesh Chandra Sharma
Secretary General, CropLife India

About

CropLife India is an association of the technology-driven plant science industry, committed to responsible crop care and crop production for the safe and sustainable development of Indian agriculture.

CropLife India promotes the benefits and responsible use of crop protection products, as well as sound regulatory frameworks in support of sustainable agriculture in India. We are a unit of CropLife International, a global federation of the plant science industry in over 91 countries.

CropLife India works in close coordination with CropLife Asia and CropLife International, the parent organizations, to drive its programs on stewardship, regulatory affairs, IPR/data protection, and the promotion of safe, responsible, and judicious use of crop protection products under an IPM approach.

CropLife India is a non-profit organization, wholly funded by membership.

CropLife India Members:

ADAMA

BASF The Chemical Company

Bayer CropScience

CORTEVA agriscience

CRYSTAL

dhanuka

FMC

Gharda agrovet

indofil

Pi

RALLIS INDIA LIMITED A TATA Enterprise

SUMITOMO CHEMICAL

SWAL

syngenta

Our Associate Members:

BCA

Nisso

Stanes

Introduction

As Indian agriculture continues to embrace modern technologies and advanced crop protection solutions, healthcare practitioners play a vital role in the **early recognition, accurate diagnosis, effective management, and prevention of pesticide exposure and poisoning.**

However, healthcare practitioners may have limited familiarity with the **behaviour, absorption, distribution, metabolism, and effects of pesticides in the human body, while pesticide poisoning cases often require rapid recognition and timely intervention within a limited window of opportunity.** Strengthening the knowledge and preparedness of healthcare professionals is therefore essential to ensure prompt, appropriate, and effective management of pesticide exposure and poisoning cases.

Like all areas of clinical practice, clinical toxicology is a dynamic and evolving field, with incremental advances in the science relating to the subject of management of pesticide poisoning and periodic changes in recommendations.

Prevention of pesticide poisoning remains a far more effective approach to ensuring safety and health than relying solely on treatment. It is therefore essential to carefully read and follow the instructions and precautions provided on the pesticide label while using these products.

Routes of Exposure

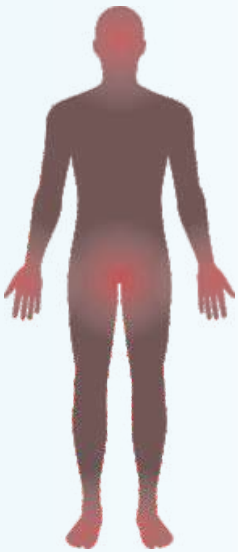
The human body may get exposed to pesticides through three main ways:

1. *By absorption through the skin or eyes (dermal exposure)*
2. *Through the mouth (oral exposure)*
3. *By breathing into the lungs through the nose (inhalation)*

Dermal Exposure

Dermal exposure is usually the primary route through which pesticides are absorbed into the body during the handling of pesticides, including spraying. Absorption can continue as long as the pesticide remains in contact with the skin. The rate of dermal absorption varies depending on the part of the body and also on the specific pesticide involved.

Pesticides can also be transferred from the hands to other parts of the body, such as the cheeks or the genital area, where the rate of absorption is higher.



Oral Exposure

Oral exposure most commonly occurs when a person deliberately drinks a concentrated pesticide formulation for self-harm or accidentally ingests it. This constitutes gross misuse or abuse of the pesticide and may result in serious harm or even death. Some cases also occur accidentally.

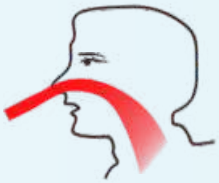
The most common accidental oral exposures occur when pesticides are removed from their original containers and placed into unlabeled bottles, jars, or food containers.

Follow these guidelines:

- Always store pesticides in their original labeled containers.
- Never use the mouth to clear a spray hose or nozzle, or to begin siphoning a pesticide.
- Never eat, drink, or use tobacco until after leaving the work area and washing thoroughly.

Respiratory Exposure

Respiratory exposure is potentially more hazardous because pesticide particles can be rapidly absorbed by the lungs into the bloodstream. Pesticides can cause serious damage to the nose, throat, and lung tissue if inhaled in excessive amounts. Vapors and very small particles pose more serious hazards .



The lungs can be exposed to pesticides by inhalation of powders, airborne droplets, or vapors. Handling concentrated wettable powders can pose a hazard, as it can accumulates in throat and may cause ingestional toxicity. However, the risk from inhaling pesticide spray droplets is relatively low when dilute sprays are applied with low-pressure application equipment, as most droplets are too large to remain airborne long enough to be inhaled.

Effects of Pesticide Exposure

Effects of exposure to pesticides generally fall into four categories:

1 Allergic effects

Topical & Sensitivity effects

Some people react to exposure to certain pesticides. Dermal exposure to pyrethroids can result in Subjective Facial Sensation (SFS), also known as pyrethroid-induced paraesthesia. This is a local effect on the intracutaneous nerve endings of the skin and is not an indication of toxicity.

2 Acute effects

Acute Effects

Acute effects appear immediately or within 24 hours of exposure. They are often reversible if appropriate medical care is provided promptly, but may be fatal if not treated. Acute effects of pesticides are classified according to the route of exposure: oral, inhalation, dermal, and eye exposures.

3 Delayed effects

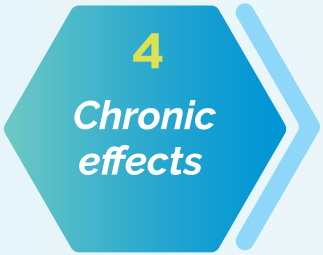
Delayed Effects

A delayed effect occurs after a single, acute exposure (or a very short-term exposure), but the clinical symptoms do not manifest until hours, days, or even weeks later. The poison is inside the system, but the biological damage takes time to become apparent.

The Mechanism: The chemical initiates a cascade of molecular or cellular damage that requires a latency period to show clinical pathology.

Classic Examples:

- **Organophosphate-Induced Delayed Polyneuropathy (OPIDP)**
- **Paraquat Poisoning:** Ingestion causes rapid gastrointestinal distress, but the lethal effect–progressive, irreversible pulmonary fibrosis–develops days to weeks later because the compound actively accumulates in the lungs, generating destructive reactive oxygen species (ROS).
- **Anticoagulant Rodenticides (e.g., Brodifacoum):** These inhibit Vitamin K epoxide reductase. Signs of severe internal bleeding don't appear for 2 to 5 days, until the body's existing clotting factors are completely depleted.



Chronic Effects *(Long-Term Toxicity)*

A chronic effect occurs due to repeated, low-dose exposure over an extended duration (months, years, or a lifetime). The individual doses are often sub-clinical, meaning a single exposure wouldn't cause any noticeable symptoms, but the cumulative impact over time leads to permanent disease or systemic dysfunction.

The Mechanism: Continuous exposure results in either the accumulation of the toxicant within tissues (bioaccumulation) or the progressive accumulation of unrepaired cellular and genetic damage (such as DNA adducts or endocrine disruption).

Classic Examples:

- **Carcinogenicity, Neurodegenerative Disorders, Endocrine Disruption:** Many organochlorines and triazine herbicides act as endocrine-disrupting chemicals (EDCs). Over years, they mimic or block natural hormones, leading to reproductive toxicity, infertility, or developmental defects.

However the pesticides before allowed to be used are thoroughly evaluated by regulators [Central Insecticide Board and Registrtion Committee (CIB & RC)] under Ministry of Agriculture and Farmers' Welfare,Govt. of India and registers for use only those pesticides which donot induce the delayed effect or chronic effects as enumerated above.

History of Pesticide Exposure

A history of pesticide exposure is an important parameter in the diagnosis of pesticide-related poisoning.

General symptoms that might indicate pesticide poisoning

Suggests Mild Poisoning

Any of the following symptoms:

- Irritation of the nose, throat, eyes, or skin
- Headache
- Dizziness
- Loss of appetite
- Sweating
- Weakness or fatigue
- Restlessness
- Nervousness
- Diarrhea
- Thirst
- Changes in mood
- Nausea
- Insomnia

Headaches

Nausea

Dizziness

Suggests Mild Poisoning

Any of the mild symptoms, plus any of the following:

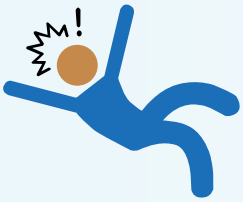
- Vomiting
- Rapid pulse
- Excessive salivation
- Coughing
- Feeling of constriction in the throat and chest
- Excessive perspiration
- Profound weakness
- Trembling
- Muscular incoordination
- Abdominal cramps
- Mental confusion
- Blurring of vision

Suggests Severe Poisoning

Any of the mild or moderate symptoms, plus any of the following:

- Inability to breathe
- Extra phlegm or mucus in the airways
- Small or pinpoint pupils
- Chemical burns on the skin
- Increased rate of breathing
- Loss of reflexes
- Uncontrollable muscular twitching
- Unconsciousness

Breathlessness



Collapse

Loss Of Consciousness

First Aid for Acute Pesticide Poisonings

Skin decontamination

The hands and forearms account for the majority of skin exposures to pesticides. These exposures usually result from splashing or spilling of pesticides during the mixing operation. All contaminated clothing should be removed immediately. Wash the exposed area with a generous amount of water and soap. If much of the body is exposed, shower the victim with soap and water, and use shampoo to remove chemicals from the scalp and hair. Also consider that pesticides may be held under fingernails and in skin folds. Persons attending the victim should avoid direct contact with heavily contaminated clothing and wear chemical-resistant gloves while washing the victim.

Respiratory exposure

Move the victim to fresh air immediately. Ensure that a clear airway exists. If the victim is convulsing, watch breathing and protect the person from falls and blows to the head. Pull the victim's chin forward so that the tongue does not block the air passage. If the victim appears neurologically impaired, it may be necessary to administer oxygen.

Pesticides in the eye

It is important to wash the eye as quickly and as gently as possible, as some pesticides can cause damage on contact. Hold the eyelids open and wash the eyes with a gentle stream of clean running water, preferably at body temperature.

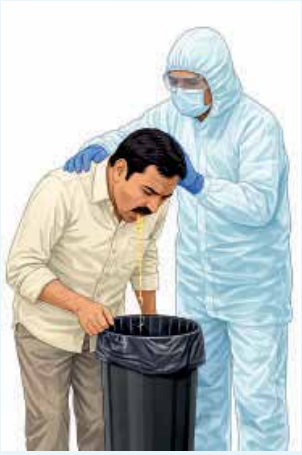
Continue washing for at least 15 minutes. Do not use chemicals or drugs in the wash water, as they may increase the potential for injury.

Chemical burns on the skin

Remove contaminated clothing. Wash the skin with large quantities of cold running water. Avoid using ointments, greases, powders, and other drugs in first aid treatment of chemical burns.

Swallowed Pesticide

Ingestion of a pesticide requires immediate medical attention.



If pesticide is still in the mouth, wash it out with plenty of water. Quickly but carefully read the first aid section of the pesticide label again or contact the **Poison Control Center** to see if the swallowed pesticide should be diluted. The label or the Poison Control Center will specify what should be used to dilute the pesticide. Some pesticides should never be diluted; this information will be stated on the label or is available from the Poison Control Center.impaired, it may be necessary to administer oxygen.

1. Check to see if vomiting should be induced. If so, move the victim to a kneeling position to prevent choking. You can use syrup of ipecac to induce vomiting, but if it is not available, put your finger in the victim's mouth and touch the back of the victim's throat. Do not use salt water to induce vomiting or attempt to give liquids.
2. Do not induce vomiting if the victim is unconscious,because the victim could choke.
3. First aid for some swallowed pesticides includes giving activated charcoal after vomiting. This material adsorbs many chemicals and is available without a prescription. It is a powder mixed with water and given to the victim to drink. It should not be given at the same time as syrup of ipecac; the charcoal adsorbs the syrup, thus negating the beneficial effects of the syrup.
4. Keep the victim calm and contact the local emergency response system, or take the victim to the nearest medical facility. Also take the product label and any Material Safety Data Sheets you have about the swallowed pesticide.

General principles for dealing with serious cases of pesticide poisoning (oral ingestion/massive respiratory exposure):

1. If respiration or pulse are absent, start resuscitation but avoid self-contamination.
2. Remove contaminated clothing and keep the victim at rest. Wash the skin with soap and water.
3. Quick and accurate treatment in cases of poisoning can make all the difference.
4. It is necessary first to identify the pesticide that is ingested; the product label is usually the best way to do so.
5. Pesticide poisoning can mimic the signs and symptoms of other common diseases.
7. Most pesticides will cause only non-specific symptoms such as nausea, vomiting, abdominal pain, and diarrhea.
8. Pesticide poisoning is likely only when there is a recent exposure to a pesticide.
9. A clear history of exposure and its circumstances is essential.
10. Consider other possible causes for the symptoms, e.g., heat exhaustion/heat stroke, food poisoning.
11. Identification is confirmed by the bottle of the product with a legible label.
12. In cases of suspected Paraquat poisoning, biochemical confirmation utilizing urine samples is ideally performed.
13. In the absence of clear identifiers, look for clues: blue-green discoloration around the mouth (Paraquat); typical signs and symptoms such as excessive secretions, slow pulse, lung rales (Organophosphates); breath odour such as decaying fish odour (Aluminium Phosphide).
14. If pesticides are ingested, do not induce vomiting unless the label specifically advises doing so. Absolute contraindications include when the patient is not fully conscious, or when the pesticide is a solvent-based formulation or is corrosive.
15. If the amount ingested is known and is significantly less than a potentially lethal dose, observe the patient. No specific treatment is necessary.
16. Gastric aspiration can be considered, but only after the airway is protected, and it is ideally performed within 1 hour, and at most 2 hours after ingestion. This should only be undertaken if the potential benefit clearly outweighs the risk, and not as a routine procedure.
17. Other general treatment modalities to consider include activated charcoal (ideally the powder mixed with water), although its adsorptive capacity for most pesticides is not established and its clinical usefulness is not clearly proven.
18. General supportive measures may include oxygen, monitoring of fluid and electrolyte balance, and anticonvulsants if fits occur. Avoid respiratory depressants unless otherwise indicated.

Medical Treatment for Pesticide Poisoning

Acaricides / Miticides

1. Bifenazate

Active Ingredient	Bifenazate
Category	Acaricide
Chemical Class	Hydrazinecarboxylic acid
Symptoms of Poisoning	The early symptoms after ingestion may be combination of nausea, vomiting, and when inhaled, it may be irritating to nose, throat including bronchial tubes and lung tissues as the formulations are fine dust which are irritant.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

2. Fenazaquin

Active Ingredient	Fenazaquin
Category	Acaricide
Chemical Class	Quinazoline
Symptoms of Poisoning	Diarrhea, lethargy, headache, dizziness, stomach ache etc.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

3. Fenpyroximate 5% EC

Active Ingredient	Fenpyroximate 5% EC
Category	Acaricide
Chemical Class	Pyrazol
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, dizziness, headache, fatigue, tremors (in severe cases), difficulty breathing or respiratory irritation (if inhaled), skin irritation, rash or redness (if in contact with skin), eye irritation, redness, or tearing (if splashed in eyes)
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive.

4. Dicofol 18.5% EC

Active Ingredient	Dicofol 18.5%
Category	Miticides
Chemical Class	Organochlorine
Symptoms of Poisoning	Early manifestations of poisoning are often sensory disturbances: Hyperesthesia and paresthesias of the face and extremities. Headache, dizziness, nausea, vomiting, incoordination, tremor and mental confusion are also reported. More severe poisoning results in myoclonic jerking movements, often followed by generalized tonic-clonic convulsions. Coma and respiratory depression may follow the seizures.
Treatments including Antidote	If ingested, give gastric lavage. Give mixture containing activated charcoal 2 parts, magnesium oxide 1 part & tanic acid in 1 part in 300 ml water. Treat symptomatically. 1. If convulsions occur, place the victim in the left lateral decubitus position with the head down. Aspirate oral and pharyngeal secretion and, when possible, insert an oropharyngeal airway to maintain an open passage unobstructed by the tongue. Minimize noise and any manipulation of the patient that may trigger seizure activity. 2. Administer oxygen by mask. 3. Control convulsions - Seizures in patients caused by organochlorine toxicity are likely the prolonged and difficult to control.

	4. Administer Diazepam at dosage of: Adults: 5-10 mg IV and repeat every 5-10 minutes to maximum of 30 mg. Children: 0.2 to 0.5 mg/kg every 5 minutes to maximum of 10 mg in children over 5 years, and a maximum of 5 mg in children under 5 years. Some cases have required aggressive seizure management including the addition of phenobarbital and the induction of pentobarbital coma. 5. Monitor Cardiac Status of severely poisoned patients by continuous ECG recording to detect arrhythmia. 6. Do Not Give Epinephrine, other adrenergic amines or atropine unless absolutely necessary. The enhanced myocardial irritability induced by chlorinated hydrocarbons predisposes to ventricular fibrillation. 7. Use Cholestryamine Resin to accelerate the biliary-fecal excretion of the more slowly eliminated organochlorine compounds. Dosage of Cholestryamine Resin - Adults: 4-gram doses, 4 times a day, before meals and at bedtime. Children: 240 mg/kg/24 hours, divided, every 8 hours.

5. Propargite

Active Ingredient	Propargite
Category	Miticide
Chemical Class	Organosulfite
Symptoms of Poisoning	No systemic poisonings have been reported in humans. However, many workers having dermal contact with this compound, especially during the summer months, have experienced skin irritation and eye irritation.
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive.

Antibiotics

1. Aureofungin

Active Ingredient	Aureofungin
Category	Antibiotic
Chemical Class	Heptaene type of antifungal antibiotic.
Symptoms of Poisoning	No specific symptoms of poisoning.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

2. Streptomycin

Active Ingredient	Streptomycin
Category	Antibiotic
Chemical Class	Aminoglycosides
Symptoms of Poisoning	Its major modes of toxicity are nephrotoxicity and ototoxicity. Fortunately, it is poorly absorbed from the gastrointestinal tract, so systemic toxicity is unlikely with ingestion. It may cause some minor nausea and GI upset. Skin rash and exfoliative dermatitis, vestibular damage, nystagmus or postural imbalance. Dysfunction of optic nerve, peripheral neuritis. Stupor, flaccidity, coma, and respiratory depression. Toxic effects on vision have been rare, but several instances have been reported. Anaphylactic shock and hematopoietic reactions.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

Fungicides

1. Azoxystrobin 23% SC

Active Ingredient	Azoxystrobin 23% SC
Category	Fungicide
Chemical Class	Strobilurin type: Methoxyacrylate
Symptoms of Poisoning	If Ingested: The early symptoms may be a single or a combination of nausea, vomiting, diarrhea and abdominal pain.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

2. Captan 50% WP

Active Ingredient	Captan 50% WP
Category	Fungicide
Chemical Class	Phthalimide
Symptoms of Poisoning	Basically an irritant, can cause irritation to skin, eyes and upper respiratory tract on skin contact and/or inhalation. On ingestion it may cause nausea, vomiting, headache etc.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

3. Carbendazim

Active Ingredient	Carbendazim
Category	Fungicide
Chemical Class	Benzimidazole
Symptoms of Poisoning	EYE: May cause slight transient (temporary) eye irritation. SKIN: Prolonged exposure may cause skin irritation. Repeated exposure may cause skin burns. INGESTION: Single dose oral toxicity is moderate. Swallowing larger amounts may cause serious injury, even death. INHALATION: At room temperature, exposures to vapors are minimal due to physical properties; higher temperatures may generate vapor levels sufficient to cause adverse effects.
Treatments including Antidote	No specific antidote. Treat Symptomatically.

4. Carboxin

Active Ingredient	Carboxin
Category	Fungicide
Chemical Class	Carboxanilide
Symptoms of Poisoning	Carboxin 75 WP is a primary skin irritant. Nausea and dizziness are the possible symptoms of accidental swallowing. Prolonged inhalation may cause headache.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

5. Copper Hydroxide

Active Ingredient	Copper Hydroxide
Category	Fungicide
Chemical Class	Inorganic
Symptoms of Poisoning	In High Doses: Stomach pain, nausea and vomiting, diarrhea, blue or green-colored stool, dark, sticky stool containing blood; headache, dizziness, fatigue, fever or chills, aching muscles, extreme thirst, tachycardia or abnormally fast heart rate, changes in taste that can lead to decreased appetite or anorexia.
Treatments including Antidote	Treat symptomatically. Chelation therapy: Binds copper particles in the bloodstream into a compound that the kidneys filter and excrete in the urine. The drug of choice is any one of below depending on situation. 1. D-Penicillamine 2. Trientine Hydrochloride (Trientine) 3. Dimercaprol (British Anti-Lewisite / BAL) 4. Dimercaptosuccinic Acid (DMSA / Succimer) Stomach pumping: Directly removes copper from the stomach. Medications: Medicines, such as corticosteroids, can help reduce swelling in the brain. Hemodialysis: This treatment is beneficial for people with kidney damage.

6. Copper Oxychloride 50% WP

Active Ingredient	Copper Oxychloride 50% WP
Category	Fungicide
Chemical Class	Inorganic
Symptoms of Poisoning	In High Doses: Stomach pain, nausea and vomiting, diarrhea, blue or green-colored stool, dark, sticky stool containing blood; headache, dizziness, fatigue, fever or chills, aching muscles, extreme thirst, tachycardia or abnormally fast heart rate, changes in taste that can lead to decreased appetite or anorexia.
Treatments including Antidote	Treat symptomatically. Chelation therapy: Binds copper particles in the bloodstream into a compound that the kidneys filter and excrete in the urine.

	The drug of choice is any one of below depending on situation. 1. D-Penicillamine 2. Trientine Hydrochloride (Trientine) 3. Dimercaprol (British Anti-Lewisite / BAL) 4. Dimercaptosuccinic Acid (DMSA / Succimer) Stomach pumping: Directly removes copper from the stomach. Medications: Medicines, such as corticosteroids, can help reduce swelling in the brain. Hemodialysis: This treatment is beneficial for people with kidney damage.

7. Chlorothalonil

Active Ingredient	Chlorothalonil
Category	Fungicide
Chemical Class	Chloronitriles
Symptoms of Poisoning	Burning sensation, redness, pain, blurred vision, abdominal pain.
Treatments including Antidote	No specific antidotes. Treat symptomatically.

8. Difenoconazole

Active Ingredient	Difenoconazole
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	Poisoning may cause symptoms of sedation, dyspnea & hunched posture.
Treatments including Antidote	No specific antidote is known. Apply symptomatic therapy.

9. Dimethomorph 50% WP

Active Ingredient	Dimethomorph 50% WP
Category	Fungicide
Chemical Class	Morpholine
Symptoms of Poisoning	Dullness, salivation, respiratory distress, combination of nausea and vomiting.
Treatments including Antidote	No specific antidote is known. Apply symptomatic therapy.

10. Dinocap

Active Ingredient	Dinocap
Category	Fungicide
Chemical Class	Inorganic
Symptoms of Poisoning	Irritation of eyes, skin & mucous membrane. Dust inhalation may irritate upper respiratory tract. Due to irritant properties, swallowing may result in burns/ ulceration of mouth, stomach and lower gastrointestinal tract.
Treatments including Antidote	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

11. Dithionon

Active Ingredient	Dithionon
Category	Fungicide
Chemical Class	Quinine
Symptoms of Poisoning	It has low acute toxicity to humans under normal use conditions, but ingestion whether accidental or intentional can lead to poisoning, with symptoms depending on the amount consumed and individual susceptibility. Below are the potential signs and symptoms of chlorothalonil poisoning: 1. Gastrointestinal Symptoms: Nausea and vomiting, abdominal pain or cramps, diarrhea. 2. Respiratory Symptoms: Difficulty in breathing may occur if the chemical causes systemic toxicity or irritation to the respiratory tract. Coughing or throat Irritation, particularly if the chemical is inhaled during ingestion or vomited and re-aspirated. 3. Neurological Symptoms: Dizziness or headache, possibly due to systemic effects or dehydration. Confusion or altered mental state in severe cases or with high doses. Weakness or fatigue from dehydration, systemic effects, or electrolyte imbalance. Shock, in severe poisoning cases. 4. Skin and Eye Symptoms: Burning sensation or irritation, in the mouth, throat, or stomach lining. Rashes or dermatitis, if chlorothalonil is absorbed through skin contact during ingestion or handling.

	5. Cardiovascular and Systemic Symptoms - Increased heart rate as a stress response or due to systemic toxicity. 6. Seizures - Rare but possible in severe poisoning cases
Treatments including Antidote	**Management and First Aid** Do Not Induce Vomiting: Unless specifically advised. Examine the container or label for proper identification. Activated Charcoal: May be administered in a medical setting to limit absorption. Symptomatic Treatment: Includes intravenous fluids for dehydration, medications for gastrointestinal symptoms, and monitoring vital signs. Supportive Care: Focus on maintaining organ function, particularly kidney and liver health. Treat according to symptoms (decontamination, vital functions). No known specific antidote.

12. Dodine

Active Ingredient	Dodine
Category	Fungicide
Chemical Class	Guanidine Fungicide
Symptoms of Poisoning	Dodine can cause toxicity if ingested. Symptoms of poisoning can vary depending on the amount ingested and the individual's sensitivity. Common symptoms may include: Gastrointestinal Distress: Nausea, vomiting, diarrhea, and abdominal pain. Respiratory Issues: Difficulty breathing or respiratory distress. Neurological Effects: Headaches, dizziness, confusion, or in severe cases, seizures. Dermatological Reactions: Irritation or rash upon skin contact. Cardiovascular Effects: Changes in heart rate or blood pressure.
Treatments including Antidote	No specific antidotes. Treat symptomatically with supportive therapy.

13. Fenarimol

Active Ingredient	Fenarimol
Category	Fungicide
Chemical Class	Pyrimidine
Symptoms of Poisoning	Headache, nausea, vomiting, diarrhea may occur.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

14. Flusilazole

Active Ingredient	Flusilazole
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	1. Eye contact may initially include, eye irritation with discomfort, tearing or blurring of vision. Can cause eye damage. 2. Skin contact may initially include, skin irritation with discomfort or rash. 3. Inhalation may initially include, irritation of the upper respiratory passages. Coughing and/or wheezing. Difficulty in breathing
Treatments including Antidote	If ingested prepare activated charcoal slurry, suspend 50g activated charcoal in 400ml water in plastic bottle and shake well. Administer 5ml/kg, or 350ml for an average adult. No specific antidote is known. Treat symptomatically.

15. Fosetyl aluminium

Active Ingredient	Fosetyl aluminium
Category	Fungicide
Chemical Class	Ethylphosphonate (phosphonate class of compounds used as fungicides and bactericides).
Symptoms of Poisoning	Severe eye irritation.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

16. Hexaconazole 5% EC

Active Ingredient	Hexaconazole 5% EC
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	Nervousness, anxiety, tremors, convulsions & allergic manifestations.
Treatments including Antidote	If ingested, carry out gastric lavage. No specific antidote is known. Treat symptomatically.

17. Isoprothiolane 40% EC

Active Ingredient	Isoprothiolane 40% EC
Category	Fungicide
Chemical Class	Dithiolane
Symptoms of Poisoning	Gastrointestinal: Nausea, vomiting, and diarrhea are common. Central Nervous System (CNS): Dizziness, trembling, and in some cases, unconsciousness has been reported. Other: Heaviness in extremities, difficulty breathing, and cyanosis (bluish discoloration of the skin) have also been observed. Liver Toxicity: Elevated liver enzymes (AST, ALT) can indicate liver damage.
Treatments including Antidote	No specific antidote is known. Treat symptomatically. If ingested, give gastric lavage with care to prevent aspiration. The primary focus is on providing supportive care, including good nursing care and monitoring vital signs. Treatment may involve managing symptoms like vomiting and diarrhea, and addressing any electrolyte imbalances. In cases of liver damage, monitoring liver function and supportive therapy may be necessary.

18. Kresoxim - methyl 500 g/L SC

Active Ingredient	Kresoxim - methyl 500 g/L SC
Category	Fungicide
Chemical Class	Strobilurin
Symptoms of Poisoning	If ingested, the early symptoms may be a combination of nausea, vomiting, diarrhea, abdominal pain. Exposure may cause slight irritation of the skin, eyes, mouth or respiratory tract (including rhinitis and cough).
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

19. Mancozeb

Active Ingredient	Mancozeb
Category	Fungicide
Chemical Class	Dithiocarbamates
Symptoms of Poisoning	Itching, tightness in chest, palpitation, hypotension, fatigue, headache, nausea, vomiting, diarrhoea. Hypothermia and ataxia may occur. In severe cases potential symptoms may include impaired vision, convulsions, slurred speech, and confusion.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

20. Mandipropamid

Active Ingredient	Mandipropamid
Category	Fungicide
Chemical Class	Mandelamide
Symptoms of Poisoning	No case of human poisoning is on record. In laboratory studies, poisoning symptoms in rodents were non-specific and transient: salivation, increased breathing depth etc. Mandipropamid, a fungicide, has low or minimal acute toxicity via oral, dermal, and inhalation routes. Gastrointestinal: Nausea, vomiting, and diarrhea may occur in heavy dose. May cause irritation in skin, nose, eyes and throat if exposed.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

21. Metalaxyl-M

Active Ingredient	Metalaxyl-M
Category	Fungicide
Chemical Class	Phenylamide - Acylalanine type
Symptoms of Poisoning	Itching, tightness in chest, palpitation, hypotension, fatigue, headache, nausea, vomiting, diarrhea. Hypothermia and ataxia may occur. In severe cases potential symptoms may include impaired vision, convulsions, slurred speech and confusion.
Treatments including Antidote	No specific Antidote is known. Apply symptomatic therapy.

22. Myclobutanyl

Active Ingredient	Myclobutanyl
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	Respiratory Exposure: Irritation, coughing, shortness of breath, potential for acute lung injury and ARDS. Ingestion in large quantities may cause: Nausea, vomiting, abdominal pain. There may be Neurological symptoms: Seizures, confusion, coma. Other: Potential for liver toxicity (degeneration, necrosis, and hypertrophy), testicular atrophy after long-term exposures, and developmental effects (fetal death and skeletal variation) in laboratory animals.
Treatments including Antidote	No specific antidote. Treat symptomatically. Prompt medical attention is crucial. Treatment will depend on the severity of the poisoning and the symptoms presented. Supportive care, including respiratory support and management of gastrointestinal symptoms, may be necessary.

23. Propiconazole 25% EC

Active Ingredient	Propiconazole 25% EC
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	Poisoning Skin Contact: May cause an allergic skin reaction with symptoms like redness, swelling, and rash. Eye Contact: Can cause irritation with symptoms of redness and watering. Ingestion: May irritate the mouth, throat, and stomach, leading to abdominal pain, nausea, vomiting, and diarrhea. Inhalation: Can cause throat irritation, sneezing, and coughing.
Treatments including Antidote	No specific antidotes. Treatment is symptomatic and supportive.

24. Pyraclostrobin 20% WG

Active Ingredient	Pyraclostrobin 20% WG
Category	Fungicide
Chemical Class	Strobilurin
Symptoms of Poisoning	Low acute toxicity to humans, exposure can cause eye and skin irritation, and in some cases, respiratory symptoms like throat irritation, sneezing, and coughing. If swallowed, there may be Nausea and vomiting.
Treatments including Antidote	No Specific antidote is known. Treatment is symptomatic and supportive.

25. Sulphur 80% WG

Active Ingredient	Sulphur 80% WG
Category	Fungicide
Chemical Class	Non-Metallic Element
Symptoms of Poisoning	Headache, dizziness, nausea, vomiting, irritation of eyes & bronchial tubes if inhaled.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

26. Tebuconazole 25.9% EC

Active Ingredient	Tebuconazole 25.9% EC
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	Weakness, Fatigue, Dyspnoea Eye Contact: Mild irritant to the eyes Skin contact: Mild irritant to skin Ingestion: May be harmful if swallowed.
Treatments including Antidote	Immediately offer drinking water to the person, if able to swallow. Do not induce vomiting, but do not stop if it happens spontaneously. There is no specific antidote. Treat symptomatically.

27. Tetraconazole 3.8% EW

Active Ingredient	Tetraconazole 3.8% EW
Category	Fungicide
Chemical Class	Tetrafluoroethoxy
Symptoms of Poisoning	No symptoms on human have been observed. Tetraconazole has low acute toxicity when ingested, but can cause mild symptoms like nausea, vomiting, headaches and dizziness. More severe cases, reported in some studies involving TETS (a closely related compound), include seizures, consciousness reduction, and even death from respiratory failure.
Treatments including Antidote	No specific antidote. Treat Symptomatically.

28. Tricyclazole

Active Ingredient	Tricyclazole
Category	Fungicide
Chemical Class	Triazole
Symptoms of Poisoning	While direct poisoning in humans due to tricyclazole ingestion is rare, accidental or intentional ingestion could lead to toxic effects. Symptoms and signs depend on the amount ingested and individual sensitivity. These may include: 1. Gastrointestinal Symptoms- Nausea and Vomiting. Abdominal pain caused by irritation of the gastrointestinal tract. Diarrhea due to irritation or disruption of normal gut flora. 2. Neurological Symptoms- Dizziness: A general response to poisoning. Headache: Often reported with chemical exposures. Confusion or Drowsiness: In severe cases, central nervous system depression might occur. 3. Respiratory Symptoms- Difficulty in breathing: Potential if the chemical irritates the respiratory tract or causes systemic toxicity.
Treatments including Antidote	No specific antidotes. Treatment is symptomatic and supportive.

29. Validamycin 3L

Active Ingredient	Validamycin 3L
Category	Fungicide
Chemical Class	Isolated from the soil actinomycete Streptomyces hygroscopicus
Symptoms of Poisoning	Headache, giddiness, nausea, vomiting and anxiety. Some times allergic manifestation.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

Herbicides

1. Alachlor 10% GR

Active Ingredient	Alachlor 10% GR
Category	Herbicide
Chemical Class	Chloroacetanilide
Symptoms of Poisoning	Alachlor can cause various symptoms if ingested by humans. Symptoms of poisoning may include:- Gastrointestinal Symptoms: Nausea, vomiting, diarrhea, abdominal pain. Neurological Symptoms: Headache, dizziness, tremors, weakness, confusion or altered mental state Respiratory Symptoms: Difficulty breathing or shortness of breath Cardiovascular Symptoms: Low blood pressure (hypotension), Rapid heart rate (tachycardia). Dermatological Reactions: Skin irritation or rashes if there is skin exposure.
Treatments including Antidote	Treatment typically involves supportive care, which may include activated charcoal, hydration, and monitoring vital signs. 1. Syrup of Ipecac, followed by 1-2 glasses of water. Dose for adults & children (above 12 years of age) - 30 ml. Dose for children (below 12 years of age) -12 ml 2. Activated Charcoal: Administer 30-50 gms a slurry in tap water, after vomiting stops. 3. Sodium/Magnesium Sulphate: 0.25 gm/kg in tap water; as cathartic. 4. No specific antidote. Treat symptomatically.

2. Ametryn 80% WG

Active Ingredient	Ametryn
Category	Herbicide
Chemical Class	Triazine
Symptoms of Poisoning	Slightly toxic. Symptoms of acute exposure to high doses include nausea, vomiting, diarrhea, muscle weakness, and salivation.
Treatments including Antidote	There is no antidote. Medical care focuses strictly on decontamination, symptomatic relief, and supportive treatment

3. Ammonium Salt of Glyphosate – 71% SG

Active Ingredient	Ammonium Salt of Glyphosate – 71% SG
Category	Herbicide
Chemical Class	Organophosphorous group (EPSP synthase inhibitors)
Symptoms of Poisoning	Ingestion of glyphosate-containing products can lead to a range of symptoms in humans, varying in severity depending on the concentration of glyphosate, the amount ingested, and the presence of other ingredients (surfactants) in the formulation. Common Symptoms: Irritation of the mouth and throat: Burning sensation and pain. Nausea and vomiting: May sometimes involve blood. Abdominal pain and cramps, diarrhea, increased saliva. Less Common or More Severe Symptoms: Dizziness, headache, drowsiness, weakness, low blood pressure (hypotension), Slow heart rate (bradycardia). breathing difficulties. Blue lips or fingernails (cyanosis), indicating low oxygen levels. Anxiety, kidney failure, liver impairment, metabolic acidosis. Hyperkalemia (high potassium levels), impaired consciousness. Pulmonary edema (fluid in the lungs). Shock, cardiac arrhythmias (irregular heartbeat), coma. In severe cases of intentional large ingestions, fatalities have been reported. **It's important to note that some studies suggest that the surfactants present in many glyphosate-based herbicides, such as polyoxyethyleneamine (POEA), may contribute significantly to the overall toxicity and can exacerbate some of these symptoms, particularly gastrointestinal and cardiovascular effects.** If you suspect someone has ingested glyphosate, seek immediate hospitalisation. **Do not induce vomiting** unless directed by a medical professional or poison control center.
Treatments including Antidote	There is no specific antidote for glyphosate poisoning. Treatment focuses on supportive care to manage the symptoms.

4. Atrazine 50% WP

Active Ingredient	Atrazine 50% WP
Category	Herbicide
Chemical Class	Triazine
Symptoms of Poisoning	Mild irritating skin, eyes and upper respiratory tract. Systemic toxicity is unlikely unless very large amount has been ingested giddiness, combing, diarrhea, etc.
Treatments including Antidote	Ingestion of small amounts (less than 10mg/kg body weight) occurring less than an hour before treatment, are best treated by: 1. Syrup of Ipecac, followed by 1-2 glasses of water. Dose for adults and children above 12 years 30ml. Dose for children under 12 years 12ml. 2. Activated charcoal administers 30-50 gm as slurry in tap water. 3. Sodium/ Magnesium sulphate 0.25 gm/kg in tap water, as a cathartic. 4. No specific antidote is known. Treat symptomatically.

5. Azimsulfuron

Active Ingredient	Azimsulfuron
Category	Herbicide
Chemical Class	Sulfonyl urea
Symptoms of Poisoning	While Azimsulfuron is considered to have low mammalian toxicity, exposure can still lead to adverse effects. General Symptoms: Faintishness and weakness. Gastrointestinal: Nausea, vomiting (possibly with blood), severe pain in the mouth and throat (if ingested), drooling, speech problems. Skin: Urticarial rash (hives), skin irritation, burning sensation Eyes: Eye irritation, burning sensation. Cardiovascular: Rapid development of low blood pressure (shock), rapid pulse. Respiratory: Breathing difficulty, chest pain (tightness), choking, coughing, coughing up blood, shortness of breath. Other potential symptoms: Fever, bluish skin, lips and fingernails (cyanosis).
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

6. Butachlor

Active Ingredient	Butachlor
Category	Herbicide
Chemical Class	Acetanilide
Symptoms of Poisoning	Common Symptoms Gastrointestinal: Nausea, vomiting (sometimes with blood), diarrhoea, abdominal pain. Neurological: Drowsiness, decreased level of consciousness, stupor, seizures, dizziness. Cardiovascular: Bradycardia (slow heart rate) or tachycardia (fast heart rate), hypotension (low blood pressure). Respiratory: Difficulty in breathing, chest pain (tightness), coughing, shortness of breath. Other: Fever, excessive salivation, lacrimation (excessive tearing), pallor, sweating, muscle spasms, urinary incontinence.
Treatments including Antidote	There is no specific antidote for this poisoning. Treatment focuses on supportive care, managing symptoms, and preventing complications, if any.

7. Carfentrazone ethyl

Active Ingredient	Carfentrazone-ethyl
Category	Herbicide
Chemical Class	Triazolinone
Symptoms of Poisoning	General: Shaking, low body temperature Gastrointestinal: Ingestion may cause irritation, burning sensation, and reddening of the mouth and throat. Eyes: lacrimation mild irritation. Skin: Mild irritation, itchiness, and redness may occur with contact. Respiratory: Inhalation may cause mild respiratory irritation. In higher concentrations, it can be toxic if inhaled.
Treatments including Antidote	There is no specific antidote for this poisoning. Treatment focuses on supportive care, managing symptoms, and preventing complications, if any.

8.Chlorimuron ethyl

Active Ingredient	Chlorimuron ethyl
Category	Herbicide
Chemical Class	Sulfonyl urea
Symptoms of Poisoning	Common Symptoms: Eye Irritation: May cause discomfort, tearing, or blurring of vision. Skin Irritation: May cause discomfort or rash. Gastrointestinal: Nausea, vomiting, and diarrhea have been reported. Respiratory: Coughing and shortness of breath may occur.
Treatments including Antidote	There is no specific antidote for this poisoning. Treatment focuses on supportive care, managing symptoms, and preventing complications, if any.

9.Clodinafop-Propargyl (also referred to as Piroxofop propinyl)

Active Ingredient	Clodinafop - Propargyl (Piroxofop Propinyl)
Category	Herbicide
Chemical Class	Aryloxyphenoxypropionate
Symptoms of Poisoning	Likely low mammalian toxicity and potential irritant effects. Inappropriate use, accidental exposure, or ingention can lead to poisoning. Redness or irritation or Dry and itchy skin. May cause mild irritation, redness, and possibly a burning sensation. Ingestion may cause mild nausea, vomiting, Diarrhea or gastrointestinal irritation, respiratory irritation, and abdominal cramps or discomfort, difficulty breathing, or wheezing, headache or dizziness in severe cases.
Treatments including Antidote	No specific antidotes is known. Treat symptomatically including IV fluids and monitoring for respiratory or gastrointestinal complications. Activated charcoal may be used in case of significant ingestion. 500ml of 30% suspension of sterilized bento or fullers earth may be given orally.

10. Clomazone

Active Ingredient	Clomazone
Category	Herbicide
Chemical Class	Isoxazole
Symptoms of Poisoning	May cause nausea and vomiting. CNS depression, potentially leading to drowsiness or a "drunken" feeling. Inhalation may cause dizziness and headache. High concentrations could lead to a lack of coordination and judgment, and eventually unconsciousness. Inhalation of mist or vapors may cause respiratory irritation. Mild eye irritation, tearing, and redness. Solvents in the formulation may cause degreasing and dermatitis with prolonged or repeated contact.
Treatments including Antidote	There is no specific antidote for Clomazone poisoning. Treatment for Clomazone poisoning is primarily symptomatic and supportive.

11. Cyhalofop butyl

Active Ingredient	Cyhalofop butyl
Category	Herbicide
Chemical Class	Aryloxyphenoxypropionate
Symptoms of Poisoning	While it is considered relatively safe for humans, accidental exposure (through ingestion, inhalation, or skin contact) can lead to poisoning. Symptoms of cyhalofop-butyl poisoning may vary depending on the route and level of exposure. Possible Symptoms of Poisoning: Neurological symptoms such as dizziness or confusion, Weakness or fatigue. Dermal or Ocular Exposure: Skin irritation or rash, redness, itching, or burning sensation on the skin, eye irritation, redness, or watering eyes. Inhalation: Respiratory irritation, coughing, shortness of breath or difficulty breathing, Headache or dizziness. Ingestion: Nausea or vomiting, abdominal pain, diarrhea, drowsiness or lethargy in severe cases.

Symptoms of Poisoning	Treat symptomatically. Treatment based on judgment of the physician in response to reactions of the patient. No specific antidote is available.

12. Fluazifop-p-butyl

Active Ingredient	Fluazifop-p-butyl
Category	Herbicide
Chemical Class	Aryloxyphenoxypropionate
Symptoms of Poisoning	While it is considered relatively safe for humans, accidental exposure (through ingestion, inhalation, or skin contact) can lead to poisoning. Symptoms of Fluazifop-p-butyl poisoning may vary depending on the route and level of exposure. Possible Symptoms of Poisoning: Possible allergic reaction, Neurological symptoms such as dizziness or confusion, Weakness or fatigue. Dermal or Ocular Exposure: Skin irritation or rash, redness or itching or burning sensation on the skin, Eye irritation, redness or watering eyes. Inhalation: Respiratory irritation, coughing, shortness of breath or difficulty in breathing, headache or dizziness. Ingestion: Nausea or vomiting, abdominal pain, diarrhea. Drowsiness or lethargy in severe case.
Treatments including Antidote	No specific antidote is known. Apply supportive and symptomatic therapy.

13. Imazethapyr 10% SL

Active Ingredient	Imazethapyr 10% SL
Category	Herbicide
Chemical Class	Imidazolinone
Symptoms of Poisoning	Though Imazethapyr is considered to have low toxicity to humans accidental or excessive exposure (via ingestion, inhalation, or dermal contact) may cause mild to moderate poisoning symptoms. Symptoms may be: Dizziness or headache, general malaise, fatigue or lethargy, nausea or vomiting, abdominal pain, diarrhea. Mild skin irritation, redness, or rash. Eye irritation, including redness, watering, or a burning sensation. Mild respiratory irritation, coughing or sore throat.
Treatments including Antidote	No specific antidote. Treat symptomatically.

14. IPA Salt of Glyphosate

Active Ingredient	IPA Salt of Glyphosate
Category	Herbicide
Chemical Class	(EPSP) Synthase Inhibitors
Symptoms of Poisoning	Glyphosate has minimal biological activity in humans. Medical symptoms appear to be due primarily to the effect of surfactant. Skin: Not an allergic sensitizer. May produce mild to moderate skin irritation, especially if occluded or abraded. Eye: Topical irritation or corneal abrasion may occur. Serious or permanent injury to the eye appears to be rare. Ingestion of fully diluted formulation for application generally does not produce serious illness or injury. Ingestion of the 41% concentrate may produce nausea, vomiting, and superficial burns of the upper or lower gastrointestinal tract. Full thickness burns or permanent injury are rare. Laryngeal edema is reported.

Symptoms of Poisoning	Systemic effects are primarily cardiovascular with progressive hypotension which may not respond to fluids or pressor agents. Secondary renal injury may occur along with fluid and electrolyte disturbances. Central nervous system effects appear to be due primarily to general metabolic disturbance rather than to direct CNS effect, but alterations of mental status and seizures may occasionally occur. Inhalation of mist or dust may produce respiratory irritation, mainly of the upper respiratory tract, but serious respiratory injury is highly unlikely. (May produce aspiration injury if aspirated during or following ingestion.)
Treatments including Antidote	Glyphosate is not a cholinesterase inhibitors. Atropine and oxime treatment is not indicated for glyphosate ingestions. There is no specific antidote for this product. For routes of exposure other than ingestion, care is generally not necessary beyond first aid as indicated. Topical treatment may occasionally be required for skin (topical anti-inflammatory) or eye (antimicrobial plus anti-inflammatory) exposures. While glyphosate is dialyzable, it is not the primary toxic component. The ability of dialysis to remove the surfactant has not been established. Dialysis should be considered for correction of serious fluid and electrolyte imbalance in seriously ill individuals but is not indicated in asymptomatic or minimally affected individuals or for routine removal of toxic substances at this time. Ingestion: Upper endoscopy is not routinely recommended as injury has generally been superficial in nature, but can be considered if patient cannot properly handle secretions. Care is primarily supportive in nature with management of fluid and electrolyte disturbances and management of hypotension on an emergent basis with fluids and administration of vasopressors. Hypotension may not respond to therapy. Airway management and treatment of aspiration pneumonitis or secondary pneumonia should be considered as indicated.

15. Isoproturon 50% WP

Active Ingredient	Isoproturon 50% WP
Category	Herbicide
Chemical Class	Urea compound
Symptoms of Poisoning	Isoproturon although considered to be moderately toxic to humans, accidental exposure to isoproturon through ingestion, inhalation, or skin contact can lead to poisoning. The severity of symptoms depends on the dose and route of exposure. Symptoms are: Nausea and vomiting, diarrhea, abdominal pain or cramping, drowsiness, fatigue or lethargy. Skin irritation, redness, or rash, burning or itching sensation on the skin. Eye irritation, redness, or watering. Severe exposure may lead to dermatitis or eye inflammation. Respiratory irritation, coughing or sore throat, difficulty in breathing or wheezing. Headache or dizziness in cases of prolonged exposure. Rare but serious: Cardiovascular issues such as low blood pressure or arrhythmias.
Treatments including Antidote	Do not induce vomiting unless directed by a medical professional. Then administer 30 gm sodium sulphate and 150 ml liquid paraffin. Otherwise apply symptomatic treatment. Castor oil, milk and alcohol are contraindicated while there is no antidote, prompt decontamination, supportive care, and symptom management can significantly improve outcomes in cases of isoproturon poisoning.

16. Metribuzin 70% WP

Active Ingredient	Metribuzin 70% WP
Category	Herbicide
Chemical Class	Triazines
Symptoms of Poisoning	Weakness, fatigue, excessive lacrimation.
Treatments including Antidote	Give a glass of water containing medicinal charcoal. Treatment by physician should be symptomatic. Keep the patient in fresh air and call the doctor immediately.

17. Metsulfuron methyl

Active Ingredient	Metsulfuron methyl
Category	Herbicide
Chemical Class	Triazines
Symptoms of Poisoning	Metsulfuron-methyl is considered to have low toxicity in humans, but accidental exposure or ingestion can cause mild to moderate poisoning symptoms. Symptoms are nausea and vomiting, abdominal pain or cramping, diarrhea. Mild skin irritation, redness or rash. Eye irritation, redness, or watering. Burning or itching sensation in severe cases. Irritation of the respiratory tract, coughing or sore throat. Shortness of breath or wheezing in sensitive individuals. Dizziness or headache with prolonged exposure. Weakness or general fatigue. Allergic reactions in hypersensitive individuals.
Treatments including Antidote	No specific antidote is known. Treat symptomatically with supportive treatment.

18. Oxyflourfen 23.5% EC

Active Ingredient	Oxyflourfen 23.5% EC
Category	Herbicide
Chemical Class	Diphenyl ether
Symptoms of Poisoning	Oxyfluorfen is considered moderately toxic to humans, exposure through ingestion, inhalation, or dermal contact can cause poisoning. Symptoms Poisoning: Skin irritation, redness, or rash. Eye irritation, redness, or watering. Irritation of the respiratory tract, coughing or sore throat. Shortness of breath. Headache or dizziness with prolonged exposure. Nausea and vomiting. Abdominal pain or cramping. Diarrhea, burning sensation in the mouth or throat.

Treatments including Antidote	Ingestions of small amounts (less than 10 mg/Kg body weight) occurring less than an hour before treatment are best treated by: 1. Syrup of Ipecac followed by 1-2 glasses of water. Dose for adults and children above 12 years 30ml. Dose for children under 12 years 12ml. 2. Activated charcoal administer 30-50gm as a slurry in tap water after vomiting stops. 3. Sodium /magnesium sulphate 0.25gm/kg in Tap water, as a cathartic. Prompt management is crucial, although there is no specific antidote for oxyfluorfen poisoning. Treatment focuses on symptomatic and supportive care.

19. Paraquate Dichloride 24% SL

Active Ingredient	Paraquate Dichloride 24% SL
Category	Herbicide
Chemical Class	Dipyridylium
Symptoms of Poisoning	Paraquat is a highly toxic herbicide, and poisoning by ingestion or exposure can cause severe symptoms and potentially fatal outcomes. Symptoms typically progress through distinct phases depending on the route and dose of exposure. Here's an overview: Acute Symptoms (within hours to days if ingested): Severe nausea and vomiting, abdominal pain, diarrhea (may be bloody). Mouth and throat burns. Pain and swelling in the mouth, throat, and esophagus. Ulceration or erosion in the oral cavity and gastrointestinal tract, Respiratory Symptoms: Acute lung damage leading to difficulty breathing, Inhalation exposure may cause lung inflammation, Acute kidney injury (oliguria, hematuria). Liver dysfunction (elevated liver enzymes). Cardiovascular Symptoms: Low blood pressure (shock), rapid heart rate. Subacute to Chronic Symptoms (days to weeks): Pulmonary fibrosis, progressive scarring of lung tissue, severe shortness of breath (dyspnea). Cyanosis (blue discoloration of skin). Confusion or altered mental status (in severe cases).

	Other Potential Symptoms: Skin burns and irritation if contact occurs, Eye irritation or damage from splashes, Multi-organ failure.
Treatments including Antidote	There is no specific antidote for Paraquat poisoning. Treatment focuses on supportive care, including gastric decontamination (e.g., activated charcoal, fuller's earth). Hemodialysis or hemoperfusion for toxin removal (early stages), Antioxidant therapy (e.g., vitamin C, vitamin E, or N-acetylcysteine). Administer 15% aqueous suspension of fuller's earth (Bentonite/ activated charcoal) plus a suitable purgative e.g., Mannitol 20% solution, Sodium Sulphate. If Haemoral or Haemoperfusion is necessary, it must be started within 24 hrs of ingestion. Avoid use of high concentration oxygen. Immediate transfer to hospital if significant ingestion. **Oxygen is contraindicated unless otherwise required.**

20. Pendimethalin 30% EC

Active Ingredient	Pendimethalin 30% EC
Category	Herbicide
Chemical Class	Dinitroaniline
Symptoms of Poisoning	Pendimethalin is considered to have low toxicity in humans, but acute exposure, particularly to high concentrations, can still result in mild to moderate symptoms. Potential poisoning symptoms: Nausea and vomiting, abdominal discomfort or cramping, diarrhea (mild to moderate). Irritation of the throat and nasal passages, coughing or sneezing, difficulty breathing in cases of prolonged exposure. Dermatological Symptoms (Skin contact): Redness, itching, or mild rash. Dry or flaky skin. Eye redness and irritation, watery or burning eyes and blurred vision in severe cases.
Treatments including Antidote	No Specific antidote is known. Apply supportive and symptomatic therapy.

21. Penoxsulam

Active Ingredient	Penoxsulam
Category	Herbicide
Chemical Class	Triazolopyrimidine sulfonamide
Symptoms of Poisoning	Penoxsulam considered to have low toxicity to humans but, poisoning incidents may occur under on accidental exposure, ingestion, or inappropriate handling. Symptoms are: Nausea, vomiting, or abdominal discomfort. Diarrhea or mild gastrointestinal irritation, Irritation of the respiratory tract. Coughing or shortness of breath. Mild skin irritation or redness, allergic reactions in rare cases. Redness or irritation or temporary discomfort of eye.
Treatments including Antidote	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Rinse the mouth with water. Do not induce vomiting unless advised. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control centre or going for treatment.

22. Pinoxaden

Active Ingredient	Pinoxaden
Category	Herbicide
Chemical Class	Phenylpyrazoline
Symptoms of Poisoning	Penoxaden considered to have low toxicity to humans but, poisoning incidents may occur under on accidental exposure, ingestion, or inappropriate handling. Symptoms are: Nausea, vomiting, or abdominal discomfort. Diarrhea or mild gastrointestinal irritation, Irritation of the respiratory tract. Coughing or shortness of breath. Mild skin irritation or redness, allergic reactions in rare cases. Redness or irritation or temporary discomfort of eye.
Treatments including Antidote	Treat Symptomatically. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Rinse the mouth with water. Do not induce vomiting.

23. Pretilachlor 50% EC

Active Ingredient	Pretilachlor 50% EC
Category	Herbicide
Chemical Class	Chloroactamide
Symptoms of Poisoning	Pretilachlor is considered to have low toxicity to mammals, inappropriate use, accidental exposure, or ingestion can lead to poisoning. Symptoms of Poisoning: Nausea, vomiting, abdominal cramps or discomfort. Diarrhea or gastrointestinal irritation. Respiratory irritation, coughing, difficulty in breathing or wheezing. Headache or dizziness in severe cases. Redness or irritation or Dry or itchy skin, Eye irritation, discomfort, temporary blurred vision.
Treatments including Antidote	No specific antidote is known. Symptomatic treatment in a healthcare setting, including IV fluids and monitoring for respiratory or gastrointestinal complications. Activated charcoal may be used in cases of significant ingestion if recommended by a poison control centre or doctor.

24. Propaquizafop 10% EC

Active Ingredient	Propaquizafop 10% EC
Category	Herbicide
Chemical Class	Aryloxyphenoxypropionate
Symptoms of Poisoning	Propaquizafop is considered to have low toxicity to mammals, inappropriate use, accidental exposure, or ingestion can lead to poisoning. Symptoms of Poisoning: Nausea, vomiting, abdominal cramps or discomfort. Diarrhoea or gastrointestinal irritation. Respiratory irritation: Coughing, difficulty breathing, or wheezing. Headache or dizziness in severe cases. Redness or irritation or dry or itchy skin. Eye irritation, discomfort, temporary blurred.
Treatments including Antidote	No specific antidote. Symptomatic treatment in a healthcare setting, including IV fluids and monitoring for respiratory or gastrointestinal complications. Activated charcoal may be used in cases of significant ingestion if recommended by a poison control centre.

25. Quizalofop-p-tefuryl

Active Ingredient	Quizalofop-p-tefuryl
Category	Herbicide
Chemical Class	Aryloxyphenoxypropionate
Symptoms of Poisoning	Quizalofop-p-tefuryl has a relatively low acute toxicity to humans when handled properly, exposure to high levels may cause poisoning. Symptoms depend on the exposure route (inhalation, ingestion, skin contact, or eye contact) and the amount of exposure. Symptoms: Mild to moderate skin irritation, possible allergic reactions in sensitive individuals. Eye irritation, redness or tearing. Irritation to nose, coughing or throat discomfort. In case of ingestion - Nausea, vomiting, abdominal discomfort, diarrhea, drowsiness, dizziness, or general malaise.
Treatments including Antidote	No specific antidote is known Symptomatic treatment in a healthcare setting, including IV fluids and monitoring for respiratory or gastrointestinal complications. Activated charcoal may be used in cases of significant ingestion. Do not induce vomiting unless warranted.

26. Sulfosulfuron 75% WG

Active Ingredient	Sulfosulfuron 75% WG
Category	Herbicide
Chemical Class	Sulfonyl Urea
Symptoms of Poisoning	Sulfosulfuron is considered low toxicity. Accidental or significant exposure may lead to poisoning symptoms. Symptoms are: Mild skin irritation, redness, itching or rash. Rare allergic skin reactions in sensitive individuals; Eye Irritation, redness, or tearing, burning or stinging sensation. Sensitivity to light in severe cases. Irritation of the nose and throat, coughing or sneezing, difficulty breathing in rare cases of significant inhalation exposure. Headache, dizziness, or general discomfort in severe cases. On ingestion there may be nausea, vomiting, or abdominal pain and diarrhea. There may be drowsiness, dizziness, or fatigue.
Treatments including Antidote	No specific antidotes. Treat symptomatically. Do not induce vomiting unless warranted. Rinse the mouth with water and drink small sips of water.

27. Trifluralin 48% EC

Active Ingredient	Trifluralin 48% EC
Category	Herbicide
Chemical Class	Aryloxyphenoxypropionate
Symptoms of Poisoning	Trifluralin is considered to have low acute toxicity to humans under normal use conditions, but exposure to significant amounts can result in poisoning. Symptoms: Nausea, vomiting, or abdominal pain, diarrhea, drowsiness, dizziness or general fatigue. Mild skin irritation or rash, redness, itching or dryness. Rare allergic reactions. Eye Irritation, redness, or watering of the eyes. Coughing, wheezing, or throat discomfort. Headache, dizziness, or nausea in cases of significant inhalation
Treatments including Antidote	No specific antidotes. Treat symptomatically. Do not induce vomiting unless warranted. Rinse the mouth with water and drink small sips of water.

Insecticides

1. Acetamiprid

Active Ingredient	Acetamiprid
Category	Insecticides
Chemical Class	Neonicotinoid
Symptoms of Poisoning	Acetamiprid is a neonicotinoid insecticide that primarily affects the nervous system by acting on nicotinic acetylcholine receptors. Ingestion, whether accidental or intentional, can cause various symptoms depending on the dose. Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhea, Dizziness, Headache, Fatigue, Tremors, Mild tachycardia or Palpitations. Eye irritation and respiratory tract irritation: Convulsions or Seizures (in severe poisoning). Altered mental status, Confusion, agitation or even Coma (in severe poisoning). Muscle weakness or fasciculation. Cardiorespiratory Symptoms like respiratory distress or difficulty breathing. Hypotension or shock in extreme cases. Sometimes Hyper Glycemia, metabolic acidosis and multi-organ dysfunction (rare but possible in severe cases).
Treatments including Antidote	There is no specific antidote for Acetamiprid poisoning; management is largely supportive. Ensure airway, breathing, and circulation (ABCs) are stable. Remove the patient from exposure and decontaminate skin if applicable. Gastric decontamination (e.g., activated charcoal) may be considered in early ingestion cases under medical supervision. Administer intravenous fluids for dehydration. Monitor vital signs, including ECG for cardiac monitoring. Control seizures with benzodiazepines if present.

2. Acephate 75% SP

Active Ingredient	Acephate 75% SP
Category	Insecticides
Chemical Class	Organophosphate
Symptoms of Poisoning	Acephate toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. **General Symptoms:** Muscarinic Effects: Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, Vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and increased bronchial secretions. **Nicotinic Effects:** Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. **CNS Effects:** Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be sweating. Cyanosis (in severe cases due to respiratory compromise).
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization: Airway, Breathing, Circulation (ABC), Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management: Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM): Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care: Respiratory Support, Fluids and Electrolytes Balance Monitoring, Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

3. Alphacypermethrin 5% WP

Active Ingredient	Alphacypermethrin 5% WP
Category	Insecticides
Chemical Class	Neonicotinoid
Symptoms of Poisoning	Alphacypermethrin, being a Type II pyrethroid acute poisonings are generally more severe than Type I pyrethroid poisoning. The symptoms may be characterized by fine tremor and reflex hyperexcitability. Typically shown severe salivation, hyperexcitability and choreoathetosis. Other signs and symptoms of toxicity include abnormal facial sensation, dizziness, headache, fatigue, vomiting, diarrhea and irritability to sound and touch. In more severe cases, pulmonary edema, muscle fasiculations, seizures and coma can develop. A large ingestion (200 to 500 ml) of concentrated formulations may cause coma and seizures within 20 minutes. Initial symptoms following ingestion include gastrointestinal events (i.e., abdominal pain, vomiting and diarrhea) generally within 10 to 60 minutes. In minor exposure reported symptoms were headache, nausea, eye irritation, muscle weakness, anxiety and shortness of breath. Apart from central nervous system toxicity, some pyrethroids do cause distressing paresthesias when liquid or volatilized materials contact human skin. These symptoms are described as stinging, burning, itching and tingling, progressing to numbness. The skin of the face seems to be most commonly affected, but the hands, forearms and neck are sometimes involved. Sweating, exposure to sun or heat and application of water enhance the disagreeable sensations. Sometimes the paresthetic effect is noted within minutes of exposure, but a 1-2 hour delay in appearance of symptoms is more common. Sensations rarely persist more than 24 hours. The paresthetic reaction is not allergic in nature, though sensitization and allergic responses have been reported.
Treatments including Antidote	No antidote available for alfa cypermethrin poisoning, and its treatment is largely symptomatic and supportive. In case of Seizures or Neurological Symptoms administer benzodiazepines (e.g., diazepam or lorazepam) for seizures or agitation. For respiratory Distress provide mechanical ventilation if necessary. Treat hypotension with intravenous fluids and vasopressors if needed. Manage tremors with medications such as propranolol. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability.

	In case of allergic manifestation antihistaminic can be given. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning. Vitamin E oil preparation (di-alpha tocopheryle acetate) is uniquely effective in preventing and stopping parasthesia. Corn oil application is also some what effective, but possible side effects with continued use made it less suitable

4. Azadirachtin 5% EC

Active Ingredient	Azadirachtin 5% EC
Category	Insecticides
Chemical Class	Tetranotriterpenoid (Neem Based) Azadirachtin
Symptoms of Poisoning	Azadirachtin causes severe dermal and gastrointestinal irritation. Central nervous system stimulation and depression have been seen. Headache, giddiness, nausea, vomiting, convulsion may occur.
Treatments including Antidote	Wash skin thoroughly with soap and water if skin has been exposed. Do not use gastric emptying or catharsis because of severe gastrointestinal irritation. Do not use activated charcoal. No antidote available its treatment is largely symptomatic and supportive.

5. Bifenthrin

Active Ingredient	Bifenthrin
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	In cases of contact to this product the first sign of exposure is a specific paresthesia/irritation, often described as "cold burn". This may appear immediately or shortly after contact to the substance, may last up to 24 (rarely to 48) hours, and often is reported to be worsened by warmth (e.g. showering). This "cold burn" is due to a stimulation of free nerve endings, and is dependent on concentration, not on dose. The irritation can occur both on the skin and on the mucous membranes of the airways. In hypersensitive individuals an asthma-like unspecific response can be triggered. In case of ingestion in high quantity, there could be nausea, vomiting, abdominal cramo, diarrhea. In extremecases there could be convulsion. Some times toxicity strongly depends on the “solvent” used.

Treatments including Antidote	There is no specific antidote, treatment is thus can only be symptomatic and supportive. Gastric lavage should be considered in cases of significant ingestions within the first 2 hour(s); However, the application of activated charcoal and sodium sulphate is always advisable in significant ingestions. The skin application of oils or lotions containing vitamin E may be considered. The skin irritation may be painful and require the application of analgetics. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. In case of convulsions diazepam is the anticonvulsant of choice. Thus seizure management should follow standard practice using benzodiazepines (with oxygen and airway protection), if insufficiently effective followed by Phenobarbital infusion as required for status epilepticus. A suggested regimen would be: Start with 10 to 30 mg diazepam by intravenous injection according to body weight, for children pro rata. This dose is to be repeated every 10 to 30 minutes according to the patient's response. If there is allergic manifestation antihistaminics may be administered.

6. Buprofezin 25% SC

Active Ingredient	Buprofezin 25% SC
Category	Insecticide
Chemical Class	Thiadiazine
Symptoms of Poisoning	Dizziness, Headache, nervousness, anxiety, salivation tumours, convulsions, allergy, localised skin effects like itching, slight skin erythema, hypoactivity.
Treatments including Antidote	No specific antidote. Treatment is symptomatic and supportive.

7. Carbaryl 50% WP
8. Carbofuran 3% CG
9. Carbosulfan 25% EC

Active Ingredient	Carbaryl 50% WP//Carbofuran 3% CG//Carbosulfan 25% EC
Category	Insecticides
Chemical Class	Carbamate
Symptoms of Poisoning	Malaise, muscle weakness, dizziness and sweating are commonly reported early symptoms. Miosis with blurred vision, incoordination, muscle twitching and slurred speech are reported. Headache, salivation, nausea, vomiting, abdominal pain and diarrhea are often prominent. Transient hyperbilirubinemia may occur. The most severe manifestations of poisoning occur in the respiratory and central nervous (CNS) systems. CNS findings include coma, seizures and hypotonicity, and nicotinic effects including hypertension and cardiorespiratory depression. The respiratory depression also results from skeletal muscle impairment in which the chest wall cannot expand for adequate respiration. Dyspnea, bronchospasm and bronchorhea with eventual pulmonary edema are other serious signs. Data indicate that children and adults differ in their clinical presentation. Children are more likely than adults to present with the CNS symptoms above. While children can develop the classic muscarinic signs, the absence of them does not exclude the possibility of carbamate poisoning in the presence of CNS depression.
Treatments including Antidote	**Antidote – Atropine** 1. Ensure that a clear airway exists. Intubate the patient and aspirate the secretions with a large bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. 2. Administer atropine sulphate intravenously or intramuscularly. Carbamates may reverse with smaller dosages of atropine than those required to reverse organophosphates, though the required dosage is still considerably larger than that required to atropinize a non-poisoned patient.

A common dosing pitfall is giving too little atropine initially to achieve timely atropinization. Severely poisoned individuals may exhibit remarkable tolerance to atropine and require large doses.

Dosage of Atropine

Adults and Children Over 12 Years

Initial Dose: 1-3 mg IV. Repeat in 3-5 minutes if no change in clinical symptoms. Dose may be doubled with each administration until the patient is atropinized. Once adequate atropinization has been achieved, the patient can be maintained on an atropine continuous infusion at about 10%-20% of the loading dose and titrated to effect. Clear breath sounds and absent pulmonary secretions are the primary end point. Other signs of atropinization including flushing, drymouthand dilated pupils; tachycardia (pulse of 140 per minute) may occur. Early in therapy, monitor for improving blood pressure and heart rate (above 80 beats/ minute), normal pupil size and drying of the skin and axillae.

If symptoms persist, but the history is consistent with carbamate poisoning, then continue atropine therapy. However, if the clinical picture is unclear, clinicians should reassess and consider alternative causes of poisoning, such as pyrethroid insecticide poisoning, which may present a similar clinical picture. In moderately severe poisoning (hypersecretion and other end-organ manifestations without central nervous system depression) the following dosage schedules have proven effective. Reversal of muscarinic manifestations, rather than a specific dosage, is the object of atropine therapy. Pralidoxime is probably of little value in N-methyl carbamate poisonings and is not indicated in isolated carbamate poisonings. Atropine alone usually is effective.

Children Under 12 Years

Initial Dose: 0.02 mg/kg body weight IV. As with adults, double the dose every 5 minutes until pulmonary secretions are controlled. Consider continuous infusion at 10%-20% of the required loading dose and titrate. Signs of atropinization, including flushing, dry mouth,dilatedpupils and heart rates vary depending on age of child, with young toddlers having a rate approaching 200. Crackles in the lung bases nearly always indicate inadequate atropinization, and pulmonary improvement may not parallel other signs. Continuation of, or return of, cholinergic signs indicate the need for more atropine.

2-PAM should not be given.

10. Cartap Hydrochloride

Active Ingredient	Cartap Hydrochloride
Category	Insecticides
Chemical Class	Nereistoxin analogue group
Symptoms of Poisoning	Cartap Hydrochloride is an insecticide belongs to the nereistoxin analogue group. Acute toxicity of the compound that has been described is nausea, vomiting tremulousness, salivation, spasms, dyspnea, and mydriasis
Treatments including Antidote	At present the recommended antidotes for Cartap poisoning are an intravenous injection of 100–200 mg of L-cysteine or an intramuscular injection of 20–60 mg of British Anti Lewisite (Dimercaprol; 2, 3-dimercapto propanol).

11. Chlorantraniliprole

Active Ingredient	Chlorantraniliprole
Category	Insecticides
Chemical Class	Anthranilic diamide
Symptoms of Poisoning	Chlorantraniliprole is classified as having low acute toxicity to humans. Severe poisoning is uncommon, but large doses could potentially cause symptoms. Mild symptoms: Skin or eye irritation, dizziness, or nausea. Severe symptoms (rare): Headaches, vomiting, difficulty breathing, or neurological effects.
Treatments including Antidote	No specific antidote. Treatment is Symptomatic and supportive.

12. Chlorfenapyr 10% EC

Active Ingredient	Chlorfenapyr
Category	Insecticides
Chemical Class	Halogenated pyroles
Symptoms of Poisoning	Nausea, vomiting, fever, diaphoresis, tachypnea, rhabdomyolysis, and mental state changes, uncontrol high fever. Reported symptoms approximately 2 weeks after chlorfenapyr ingestion. Fatality may be encountered with delayed adverse neurological effect after about 10-12 days of ingestion.
Treatments including Antidote	No specific antidote. Treatment is Symptomatic and supportive. However the patient may become asymptomatic by third day but need to be followed up for at least for a fortnight for development of any neurological disorder.

13. Chlorpyrifos

Active Ingredient	Chlorpyrifos
Category	Insecticides
Chemical Class	Organophosphate
Symptoms of Poisoning	Chlorpyrifos toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, lacrimation (tearing), urination, gastointestinal cramping, vomiting, bradycardia, hypotension, constricted pupils, bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, weakness or paralysis (including respiratory muscles), tachycardia, hypertension. CNS Effects:- Anxiety, restlessness, confusion, seizures, coma in severe cases. Other signs may be sweating, cyanosis (in severe cases due to respiratory compromise).

Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms.Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

14. Chlorthianidin 50% WDG

Active Ingredient	Chlorthianidin
Category	Insecticides
Chemical Class	Neonicotinoid
Symptoms of Poisoning	Chlorthianidin, a neonicotinoid, poisoning is uncommon because it has relatively low toxicity to humans under normal usage conditions. However, overexposure or accidental ingestion can lead to toxic effects. The toxicity of clothianidin primarily involves the nervous system because it mimics nicotine and acts on nicotinic acetylcholine receptors. Symptoms depend on the degree of exposure. Mild Exposure may give rise to Nausea and vomiting, Headache, Dizziness, Fatigue, Mild skin or eye irritation (if contact occurs). Moderate exposure can give to Sweating, Abdominal pain, Palpitations, Restlessness, Muscle tremors or twitching. Severe Exposure may exhibit Tachycardia or bradycardia (irregular heart rate), Hypotension (low blood pressure), Confusion or agitation and may be seizures, respiratory distress and Loss of consciousness in extreme cases.

Treatments including Antidote	Clothianidin poisoning does not have a specific antidote; treatment focuses on supportive symptomatic care. Do not induce vomiting, monitor heart rate and blood pressure for abnormalities. Administer fluids or medications to stabilize vital signs as needed.

15. Cypermethrin

Active Ingredient	Cypermethrin
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	Cypermethrin is a synthetic pyrethroid generally considered to have low toxicity in humans, poisoning can occur through ingestion, inhalation, or dermal exposure. Cypermethrin primarily affects the nervous system by altering sodium channel function in nerve cells. Symptoms Poisoning-Mild Exposure: Skin irritation (burning, tingling, or itching at the site of contact), Eye irritation (redness, tearing, or burning sensation), Nausea, Dizziness, Headache. Moderate Exposure: Numbness or tingling in extremities, Abdominal pain, Vomiting or Diarrhea, Fatigue, Restlessness or agitation. Severe Exposure: Tremors or seizures, Respiratory distress, Muscle twitching or weakness, Excessive salivation, Loss of consciousness (in extreme cases).
Treatments including Antidote	No antidote available for cypermethrin poisoning, and its treatment is largely symptomatic and supportive. Antihistamines or corticosteroids for severe skin or eye reactions. Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhea. Monitoring and stabilization of vital signs. Continuous cardiac monitoring if severe poisoning is suspected. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin parastesia topical application of Vit E oil may be done. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning.

16. Cyphenothrin 5% EC

Active Ingredient	Cyphenothrin
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	Cyphenothrin is a synthetic pyrethroid generally considered to have low toxicity in humans, poisoning can occur through ingestion, inhalation, or dermal exposure. Cyphenothrin primarily affects the nervous system by altering sodium channel function in nerve cells. Symptoms Poisoning-Mild Exposure:Skin irritation (burning, tingling, or itching at the site of contact, parasthetia), Eye irritation (redness, tearing, or burning sensation), Nausea, Dizziness, Headache. Moderate Exposure: Numbness or tingling in extremities, Abdominal pain, Vomiting or diarrhea, Fatigue, Restlessness or agitation.: Severe Exposure: Tremors or seizures, Respiratory distress, Muscle twitching or weakness, Excessive salivation, Loss of consciousness (in extreme cases)
Treatments including Antidote	Treatment is supportive, as no specific antidote exists for cyphenothrin poisoning. Antihistamines or corticosteroids for severe skin or eye reactions. Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhea. Monitoring and stabilization of vital signs. Continuous cardiac monitoring if severe poisoning is suspected. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin paraesthesia topical application of Vit E oil may be done. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning.

17. Deltamethrin 100 EC

Active Ingredient	Deltamethrin
Category	Insecticides
Chemical Class	Synthetic pyrethroids
Symptoms of Poisoning	Deltamethrin is relatively safe for humans when used as directed, exposure to high doses or improper use can lead to poisoning. Symptoms of deltamethrin poisoning can vary depending on the route of exposure (inhalation, ingestion, or dermal contact) and the dose. Common Symptoms: Neurological Symptoms (due to its effect on sodium channels in nerves): Tingling or burning sensation (paresthesia), especially on the skin, headache, dizziness, nausea and vomiting, restlessness or agitation, tremors or muscle twitching, seizures (in severe cases). Respiratory Symptoms (if inhaled): Shortness of breath, coughing, throat irritation, chest tightness, bronchospasm, abdominal pain or cramps. Skin and Eye Irritation (if contacted): Redness, itching, or rash on the skin. In severe cases there may be convulsion, loss of consciousness and respiratory failure. Cardiac arrhythmia are rare.
Treatments including Antidote	No antidote available for Deltamethrin poisoning, and its treatment is largely symptomatic and supportive. Antihistamines or corticosteroids for severe skin or eye reactions. Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhea. Monitoring and stabilization of vital signs. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin paraesthesia topical application of Vit E oil may be done. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning. However if salivation is very strong a single dose of atropine may be of help: 0.6-1.2 mg for adults, 0.02 mg/kg body weight for children. Recovery is spontaneous and without sequelae.

18. Diafenthiuron

Active Ingredient	Diafenthiuron
Category	Insecticides
Chemical Class	Thiourea
Symptoms of Poisoning	Poisoning may cause symptoms of subdued behavior, prostration, lethargy, piloerection, headache, giddiness, vertigo, nausea, vomiting, blurred vision, sweating, excessive lacrimation & salivation. In severe Systemic poisoning Symptoms may be Cyanosis (bluish discoloration of the skin, lips, or nails) due to methemoglobinemia (rare but possible with thiourea compounds), Hypotension (low blood pressure), Tachycardia, Coma or respiratory failure (in extreme cases of exposure)
Treatments including Antidote	No specific antidote is known. Apply supportive and symptomatic therapy. Supportive Care: Administer oxygen if respiratory distress occurs. Provide IV fluids to maintain hydration and blood pressure. Treat methemoglobinemia with methylene blue if diagnosed. Use anticonvulsants (e.g., diazepam) for seizures. Address gastrointestinal symptoms with appropriate medications.

19. Dichlorovos 76% EC

Active Ingredient	Dichlorovos 76% EC
Category	Insecticides
Chemical Class	Organophosphate
Symptoms of Poisoning	Dichlorovos toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, vomiting, Bradycardia, Hypotension, constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).

Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs.Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

20. Diflubenzuron

Active Ingredient	Diflubenzuron
Category	Insecticides
Chemical Class	Benzamide
Symptoms of Poisoning	Diflubenzuron is an insect growth regulator (IGR) generally less harmful to humans. However, exposure to high levels or improper handling of diflubenzuron can cause poisoning. The symptoms depend on the route of exposure and the dose. Symptoms of Diflubenzuron Poisoning includes: Gastrointestinal Symptoms (if ingested): Nausea and vomiting, Abdominal pain or discomfort, Diarrhea, Loss of appetite. Neurological Symptoms: Headache, Dizziness or light-headedness, Fatigue or weakness, Tremors or twitching (in severe cases). Respiratory Symptoms (if inhaled): Coughing, Throat irritation, Shortness of breath or difficulty breathing. On skin/eye contact: Redness, irritation, or rash on the skin, Burning sensation, Eye redness, irritation, or watering.

	In rare and prolonged exposure cases there may be formation of methemoglobinemia (a condition where hemoglobin is altered, reducing oxygen delivery to tissues). Cyanosis (bluish skin, lips, or nails).
Treatments including Antidote	Apply supportive and symptomatic therapy. Supportive Care: Administer oxygen if respiratory distress occurs. Provide IV fluids to maintain hydration and blood pressure. Do not induce vomiting unless warranted. Administer activated charcoal if advised. Treat methemoglobinemia with methylene blue if diagnosed. No specific antidote is known. Treat symptomatically.

21. Dimethoate 30% EC

Active Ingredient	Dimethoate
Category	Insecticides
Chemical Class	Organophosphorous
Symptoms of Poisoning	Dimethoate toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, Vomiting, Bradycardia, Hypotension, constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or Paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects: - Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g.,diazepam or lorazepam) for seizures.

Treatments including Antidote	**Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

22. Emamectin Benzoate 5% SG

Active Ingredient	Emamectin Benzoate
Category	Insecticides
Chemical Class	Avermectine
Symptoms of Poisoning	Reports of acute toxicity are uncommon in the medical literature. Clinical manifestations appear to most prominently involve the nervous, GI and respiratory systems. Patients may initially present with nausea, vomiting, salivation, diarrhea and dizziness. More severe manifestations may include aspiration pneumonia, respiratory failure, hypotension and coma. Rhabdomyolysis has also been reported. Most patients who ingested less than 40 mg/kg exhibited either mild or no toxicity.
Treatments including Antidote	Provide supportive treatment as there is no antidotal therapy.

23. Etofenprox 10% EC

Active Ingredient	Etofenprox 10% EC
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	Etofenprox is less toxic than many other pyrethroids due to its lower absorption in mammals, but individual sensitivity may vary. Severe toxicity is rare but may occur in individuals with predisposing conditions or after substantial exposure. Etofenprox is relatively safe for humans when used as directed, exposure to high doses or improper use can lead to poisoning. Symptoms of Etofenprox 10% EC poisoning can vary depending on the route of exposure (inhalation, ingestion, or dermal contact) and the dose. Common Symptoms: Neurological Symptoms (due to its effect on sodium channels in nerves): Tingling or burning sensation (paresthesia), especially on the skin, Headache, Dizziness, Nausea and vomiting, Restlessness or agitation, Tremors or muscle twitching, Seizures (in severe cases),Respiratory Symptoms (if inhaled): Shortness of breath, Coughing, Throat irritation, Chest tightness, bronchospasm, Abdominal pain or cramps, Skin and Eye Irritation (if contacted): Redness, itching, or rash on the skin, Redness, itching, or rash on the skin. In severe cases there may be convulsion, loss of consciousness and respiratory failure. Cardiac arrhythmia are rare. There may be allergic manifestation.
Treatments including Antidote	Symptoms of Etofenprox poisoning are typically mild and resolve with supportive care. No specific antidote is known. Apply supportive and symptomatic therapy.

24. Fenpropathrin 10 EC

Active Ingredient	Fenpropathrin 10 EC
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	Fenpropathrin is known for its neurotoxic effects. Exposure can cause a range of symptoms in humans, depending on the dose and route of exposure (ingestion, inhalation, skin contact, or eye contact). The toxic effects are primarily due to the overexcitation of the nervous system, as pyrethroids disrupt sodium ion channels in nerve cells.

	Neurological Symptoms:- The nervous system is the primary target of pyrethroid toxicity. Symptoms may include: Headache, Dizziness, Fatigue or weakness, Tingling, itching, or burning sensations (paresthesia), especially on exposed skin, Tremors, Muscle twitching or fasciculations, Hyperexcitability or irritability, Convulsions or seizures (in high-dose or severe poisoning cases), Incoordination or difficulty walking. Respiratory Symptoms: Inhalation of Fenpropathrin fumes or mist can lead to: Throat irritation, Coughing, Shortness of breath (dyspnea), Respiratory distress in severe cases. Gastrointestinal Symptoms: Oral ingestion of Fenpropathrin can cause: Nausea, vomiting, abdominal pain, diarrhea. Direct contact with Fenpropathrin 10 EC may result in: Skin-Redness, rash, or irritation, Paresthesia (burning, stinging, or tingling sensations), which is usually transient. Eyes: Redness and tearing, Eye pain or discomfort. Systemic Symptoms: Severe poisoning can lead to systemic effects such as: Tachycardia (rapid heartbeat) or bradycardia (slow heartbeat), Hypotension (low blood pressure) or hypertension (high blood pressure), Excessive sweating, Fever (rare).
Treatments including Antidote	No antidote available for Fenpropathrin poisoning, and its treatment is largely symptomatic and supportive. Antihistamines or corticosteroids for severe skin or eye reactions. Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhea. Monitoring and stabilization of vital signs. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin paraesthesia topical application of Vit E oil may be done. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning.

25. Fenvalerate 20% EC

Active Ingredient	Fenvalerate 20% EC
Category	Insecticides
Chemical Class	Synthetic Nonester Pyrethroid
Symptoms of Poisoning	Fenvalerate is relatively safe for humans when used as directed, exposure to high doses or improper use can lead to poisoning. Symptoms of Fenvalerate poisoning can vary depending on the route of exposure (inhalation, ingestion, or dermal contact) and the dose. Common Symptoms : Neurological Symptoms (due to its effect on sodium channels in nerves): Tingling or burning sensation (paresthesia), especially on the skin, Headache, Dizziness, Nausea and vomiting, Restlessness or agitation, Tremors or muscle twitching, Seizures (in severe cases). Respiratory Symptoms (if inhaled): Shortness of breath, Coughing, Throat irritation, Chest tightness, bronchospasm, Abdominal pain or cramps, Skin and Eye Irritation (if contacted): Redness, itching, or rash on the skin, Redness, itching, or rash on the skin. In severe cases there may be convulsion, loss of consciousness and respiratory failure. Cardiac arrhythmia are rare. Allergic manifestation can be seen in hypersensitive patients.
Treatments including Antidote	No antidote available for Fenvalerate poisoning, and its treatment is largely symptomatic and supportive. Antihistamines or corticosteroids for severe skin or eye reactions. Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhea. Monitoring and stabilization of vital signs. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin paraesthesia topical application of Vit E oil may be done. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning. Recovery is spontaneous and without sequelae.

26. Fipronil 0.3 GR

Active Ingredient	Fipronil
Category	Insecticides
Chemical Class	Phenyl pyrazole
Symptoms of Poisoning	Fipronil's mechanism of action is by inhibition of GABA-gated chloride channels. This inhibits passage of chloride ions, thus producing hyperexcitability. This effect is similar to the mechanism of action for the organochlorine insecticides, the difference being that fipronil acts only on the GABAA channels, while organochlorines inhibit both the GABAA and GABAC. Signs and Symptoms of Poisoning- Despite the higher selective affinity for insects, there have been some reports of acute human toxicity. Patients may present with nausea and vomiting within several hours of ingestion. These appear to be self-limiting, and no long-term gastrointestinal effects have been reported. Consistent with the fact that the central nervous system is the primary target of fipronil, neurological symptoms have been the most commonly observed health effects. Neurologic symptoms have been confirmed in cases of human poisoning following ingestion. Patients may present with altered mental status. In severe cases, unconsciousness and generalized tonic-clonic seizures may also occur. Most episodes of seizures or altered mental status appeared to be self-limiting and have resolved within hours. The patient may present with symptoms of conjunctivitis, headache, dizziness, nausea, vomiting, abdominal pain, oropharyngeal pain, cough, sweating, sensory impairment, weakness, drowsiness, agitation and seizure. For Confirmation of Poisoning, the parent compound can be measured in plasma and in urine, although the test is not widely available in most hospitals. Levels reported with acute symptomatic human poisoning have been recorded as 1,600 µg/L–3,740 µg/L.46 The levels peaked by approximately 3-4 hours following ingestion.
Treatments including Antidote	No specific antidote is available. Only supportive and systematic treatment need to be given. In case of ingestion a gastric lavage within the first hour after ingestion and after intubation only with consecutive application of activated charcoal and sodium sulphate may be considered, though its efficacy has not been proven. Fipronil has a significant enterohepatic circulation.

Treatments including Antidote	Thus the repeated oral application of activated charcoal (e.g. 50 – 100 g, 6 times in 24 hours or by drip via gastral tube) should be considered, though clinical experience does not seem to clearly prove a beneficial effect. Additionally, cholestyramine 12-16g/day distributed to 4-6 doses may be given to assist elimination in severe cases. As there is no antidote for fipronil the treatment has to be supportive and symptomatic. In severe poisoning cases tonic - clonic seizures have been observed. Diazepam at 10-15 mg IV terminated these fits. Thus seizure management should follow standard practice using benzodiazepines (with oxygen and airway protection), if insufficiently effective followed by Phenobarbital infusion as required for status epilepticus. A suggested regimen would be: Start with 10 to 30 mg diazepam by intravenous injection according to body weight. This dose is to be repeated every 10 to 30 minutes according to the patient's response. Even when symptoms of fipronil intoxication are rapidly reversed by treatment, the treatment must be continued for several days, gradually decreasing the dose of the anti-convulsive drug based on the patient's clinical response. This is necessary due to the slow elimination of fipronil, patients who have had seizures need to be monitored until anticonvulsive treatment can be completely stopped. Note: Onset of symptoms may be delayed due to slow absorption of the compound. Thus, in the event of a large amount (more than one mouthful) being ingested, the patient must be hospitalised for at least 48 hours for observation and treatment.

27. Fipronil 80 WG

Active Ingredient	Fipronil 80 WG
Category	Insecticides
Chemical Class	Phenyl pyrazole
Symptoms of Poisoning	Fipronil's mechanism of action is by inhibition of GABA-gated chloride channels. This inhibits passage of chloride ions, thus producing hyperexcitability. This effect is similar to the mechanism of action for the organochlorine insecticides, the difference being that fipronil acts only on the GABAA channels, while organochlorines inhibit both the GABAA and GABAC.

	Signs and Symptoms of Poisoning. Despite the higher selective affinity for insects, there have been some reports of acute human toxicity. Patients may present with nausea and vomiting within several hours of ingestion. These appear to be self-limiting, and no long-term gastrointestinal effects have been reported. Consistent with the fact that the central nervous system is the primary target of fipronil, neurological symptoms have been the most commonly observed health effects. Neurologic symptoms have been confirmed in cases of human poisoning following ingestion. Patients may present with altered mental status. In severe cases, unconsciousness and generalized tonic-clonic seizures may also occur. Most episodes of seizures or altered mental status appeared to be self-limiting and have resolved within hours. The patient may present with symptoms of conjunctivitis, headache, dizziness, nausea, vomiting, abdominal pain, oropharyngeal pain, cough, sweating, sensory impairment, weakness, drowsiness, agitation and seizure. For Confirmation of Poisoning, the parent compound can be measured in plasma and in urine, although the test is not widely available in most hospitals. Levels reported with acute symptomatic human poisoning have been recorded as 1,600 µg/L–3,740 µg/L.46 The levels peaked by approximately 3-4 hours following ingestion.
Treatments including Antidote	No specific antidote is available. Only supportive and systematic treatment need to be given. In case of ingestion a gastric lavage within the first hour after ingestion and after intubation only with consecutive application of activated charcoal and sodium sulphate may be considered, though its efficacy has not been proven. Fipronil has a significant enterohepatic circulation. Thus the repeated oral application of activated charcoal (e.g. 50 – 100 g, 6 times in 24 hours or by drip via gastral tube) should be considered, though clinical experience does not seem to clearly prove a beneficial effect. Additionally, cholestyramine 12-16g/day distributed to 4-6 doses may be given to assist elimination in severe cases. As there is no antidote for fipronil the treatment has to be supportive and symptomatic. In severe poisoning cases tonic-clonic seizures have been observed. Diazepam at 10-15 mg IV terminated these fits. Thus seizure management should follow standard practice using benzodiazepines (with oxygen and airway protection), if insufficiently effective followed by Phenobarbital infusion as required for status epilepticus.

	A suggested regimen would be: Start with 10 to 30 mg diazepam by intravenous injection according to body weight. This dose is to be repeated every 10 to 30 minutes according to the patient's response. Even when symptoms of fipronil intoxication are rapidly reversed by treatment, the treatment must be continued for several days, gradually decreasing the dose of the anti-convulsive drug based on the patient's clinical response. This is necessary due to the slow elimination of fipronil Patients who have had seizures need to be monitored until anticonvulsive treatment can be completely stopped. Note: Onset of symptoms may be delayed due to slow absorption of the compound. Thus, in the event of a large amount (more than one mouthful) being ingested, the patient must be hospitalised for at least 48 hours for observation and treatment.

28. Flubendiamide 20% WG

Active Ingredient	Flubendiamide
Category	Insecticides
Chemical Class	Phthalic acid diamides
Symptoms of Poisoning	Flubendiamide is generally considered to have low toxicity to humans under normal exposure, accidental ingestion or improper handling can lead to poisoning. Symptoms may vary depending on the dose and the route of exposure (oral, dermal, or inhalation). Symptoms: Gastrointestinal Symptoms (if ingested): Nausea, vomiting, abdominal pain, diarrhea. Neurological Symptoms: Headache, dizziness, weakness or fatigue. Respiratory Symptoms (if inhaled): Difficulty breathing, Cough or throat irritation. Skin irritation or rash, Eye irritation (redness, tearing, or pain). General Symptoms: Allergic reactions in sensitive individuals, such as swelling, itching, or hives. Rarely, systemic toxicity might include muscle cramps or spasms due to calcium modulation effects.
Treatments including Antidote	No specific antidote. Management relies on symptomatic and supportive care.

29. Flubendiamide 480 SC

Active Ingredient	Flubendiamide 480 SC
Category	Insecticides
Chemical Class	Phthalic acid diamides
Symptoms of Poisoning	Flubendiamide is generally considered to have low toxicity to humans under normal exposure, accidental ingestion or improper handling can lead to poisoning. Symptoms may vary depending on the dose and the route of exposure (oral, dermal, or inhalation). Gastrointestinal Symptoms (if ingested): Nausea, Vomiting, Abdominal pain, Diarrhea. Neurological Symptoms: Headache, Dizziness, Weakness or fatigue. Respiratory Symptoms (if inhaled): Difficulty breathing, Cough or throat irritation. Skin irritation or rash, Eye irritation (redness, tearing, or pain). General Symptoms: Allergic reactions in sensitive individuals, such as swelling, itching, or hives. Rarely, systemic toxicity might include muscle cramps or spasms due to calcium modulation effects.
Treatments including Antidote	No specific antidote. Management relies on symptomatic and supportive care.

30. Imidacloprid

Active Ingredient	Imidacloprid
Category	Insecticides
Chemical Class	Neonicotinoid
Symptoms of Poisoning	Toxic effects bear some resemblance to those of acute nicotine poisoning except for GI corrosive injuries, which may be related to solvent effects. Human poisoning appears most likely following ingestion or inhalation. Most clinical effects are based on excessive nicotinic stimulation. Symptoms: Disorientation, confusion and agitation, headache, drowsiness, dizziness, weakness, tremor and, in some situations, loss of consciousness. No seizures have been reported, Following ingestion, ulceration was noted in the posterior pharynx, esophagus and stomach. It was not clear if the effects were due to the toxicity of the active ingredient or the accompanying solvent.

	There is evidence that a solvent found in some formulations, N-methyl pyrrolide (NMP), has a severe irritant effect. This emphasizes the importance of identifying and understanding the effects of inert ingredients in any pesticide exposure. Unfortunately, identification of such ingredients is usually difficult as they are not disclosed on the label and it is necessary to contact the formulator directly to determine which inert ingredients are in the formulation. Respiratory Signs and symptoms include labored breathing, chest tightness, dyspnea, hypoxia and aspiration pneumonia. In severe cases, respiratory failure has ensued, requiring mechanical ventilation. Rhabdomyolysis may occur in severe poisoning; with creatine phosphokinase levels being reported as high as 1,200 U/L. Renal function and serum electrolytes were normal in this case. Patients will usually present with tachycardia due to nicotinic receptor over-stimulation of the autonomic nervous system. Cardiovascular effects include tachycardia, bradycardia, hypertension, hypotension and palpitations. One case of fatal arrhythmia has been reported in which the patient presented within hours of ingesting 200 ml of imidacloprid. She initially had sinus tachycardia that rapidly progressed to ventricular tachycardia and subsequently ventricular fibrillation.
Treatments including Antidote	1. Provide supportive treatment, as there is no specific antidote for neonicotinoid poisoning. Patients with significant mental status changes should ideally be managed in the intensive care setting, at least initially. 2. Use GI decontamination as per guidelines. 3. Control extreme agitation with lorazepam or propofol. 4. Consider cardiac monitoring, especially in patients with risk factors for coronary artery disease. 5. In a severe poisoning, send patient to an intensive care setting for respiratory support.

31. Indoxacarb

Active Ingredient	Indoxacarb
Category	Insecticides
Chemical Class	Oxadiazines
Symptoms of Poisoning	Mild eye irritation with tearing, pain or blurred vision; itching, burning, redness, swelling or rashes on the skin, vapour inhalation may cause irritation of the upper respiratory passages with coughing and discomfort. Based on animal tests, massive overdose might lead to signs of neurotoxicity. Prolonged overexposure would be expected to result in loss of body weight and mild, reversible anaemia.
Treatments including Antidote	No specific antidote. Management relies on symptomatic and supportive care.

32. Lambda cyhalothrin

Active Ingredient	Lambda cyhalothrin
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	Lambda cyhalothrin is relatively safe for humans when used as directed, exposure to high doses or improper use can lead to poisoning. Symptoms of Lambda cyhalothrin poisoning can vary depending on the route of exposure (inhalation, ingestion, or dermal contact) and the dose. Common Symptoms: Neurological Symptoms (due to its effect on sodium channels in nerves): Tingling or burning sensation (paresthesia), especially on the skin, Headache, Dizziness, Nausea and vomiting, Restlessness or agitation, Tremors or muscle twitching, Seizures (in severe cases). Respiratory Symptoms (if inhaled): Shortness of breath, Coughing, Throat irritation, Chest tightness, bronchospasm, Abdominal pain or cramps, Skin and Eye Irritation (if contacted): Redness, itching, or rash on the skin. In severe cases there may be convulsion, loss of consciousness and respiratory failure. Cardiac arrhythmia are rare. Allergic manifestation can be seen in hypersensitive patients.
Treatments including Antidote	No antidote available for Lambda cyhalothrin poisoning, and its treatment is largely symptomatic and supportive. Antihistamines or corticosteroids for severe skin or eye reactions.

Treatments including Antidote	Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhoea. Monitoring and stabilization of vital signs. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin paraesthesia topical application of Vit E oil may be done. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning. Recovery is spontaneous and without sequelae.

33. Lufenuron

Active Ingredient	Lufenuron
Category	Insecticide
Chemical Class	Benzoylurea
Symptoms of Poisoning	Poisoning may cause symptoms of subdued behavior, headache, giddiness, vertigo, nausea, vomiting, blurred vision, sweating, excessive lachrymation & salivation, ataxia, somnolence and abnormal breathing.
Treatments including Antidote	No specific Antidote is known. Apply symptomatic therapy. Note: Never give anything by mouth to an unconscious person. Do not induce vomiting.

34. Methomyl

Active Ingredient	Methomyl
Category	Insecticides
Chemical Class	N – methyl carbamate
Symptoms of Poisoning	Malaise, muscle weakness, dizziness and sweating are commonly reported. Early symptoms. Miosis with blurred vision, incoordination, muscle twitching and slurred speech are reported. Headache, salivation, nausea, vomiting, abdominal pain and diarrhoea are often prominent. Transient hyperbilirubinemia may occur. Acute pancreatitis has also been reported in some of the cases of aldicarb and methomyl poisoning.

	Some cases of pancreatitis have required surgical drainage of a pancreatitic pseudocyst. The most severe manifestations of carbamate poisoning occur in the respiratory and central nervous (CNS) systems. CNS findings include coma, seizures and hypotonicity, and nicotinic effects including hypertension and cardiorespiratory depression. The respiratory depression also results from skeletal muscle impairment in which the chest wall cannot expand for adequate respiration. Dyspnea, bronchospasm and bronchorhea with eventual pulmonary edema are other serious signs. Data indicate that children and adults differ in their clinical presentation. Children are more likely than adults to present with the CNS symptoms above. While children can develop the classic muscarinic signs, the absence of them does not exclude the possibility of carbamate poisoning in the presence of CNS depression.
Treatments including Antidote	**Antidote - Atropine** 1. Ensure that a clear airway exists. Intubate the patient and aspirate the secretions with a large bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. 2. Administer atropine sulfate intravenously or intramuscularly. If intravenous injection is not possible, Atropine can be administered in small volume doses through an endotracheal tube if initial IV access is difficult to obtain. Carbamates may reverse with smaller dosages of atropine than those required to reverse organophosphates, though the required dosage is still considerably larger than that required to atropinize a non-poisoned patient. A common dosing pitfall is giving too little atropine initially to achieve timely atropinization. Severely poisoned individuals may exhibit remarkable tolerance to atropine and require large doses.

Dose of Atropine - Adults and Children Over 12 Years

Initial Dose: 1-3 mg IV. Repeat in 3-5 minutes if no change in clinical symptoms. Dose may be doubled with each administration until the patient is atropinized. Once adequate atropinization has been achieved, the patient can be maintained on an atropine continuous infusion at about 10%-20% of the loading dose and titrated to effect. Clear breath sounds and absent pulmonary secretions are the primary end point. Other signs of atropinization including flushing, dry mouth and dilated pupils; tachycardia (pulse of 140 per minute) may occur. Early in therapy, monitor for improving blood pressure and heart rate (above 80 beats/ minute), normal pupil size and drying of the skin and axillae. Autoinjectors containing 2.0 mg atropine for IM injection are also available.

Children Under 12 Years -

Initial Dose: 0.02 mg/kg body weight IV. As with adults, double the dose every 5 minutes until pulmonary secretions are controlled. Consider continuous infusion at 10%-20% of the required loading dose and titrate. Signs of atropinization, including: flushing, dry mout, dilated pupils and heart rates vary depending on age of child, with young toddlers having a rate approaching 200. Crackles in the lung bases nearly always indicate inadequate atropinization, and pulmonary improvement may not parallel other signs. Continuation of, or return of, cholinergic signs indicate the need for more atropine.

The objective of atropine antidotal therapy is to antagonize the effects of excessive concentrations of acetylcholine at end-organs having muscarinic receptors. Atropine does not reactivate AChE or accelerate excretion or breakdown of carbamate.

3. Consider pralidoxime in cases of mixed carbamate/ organophosphate poisoning and cases of an unknown pesticide with muscarinic symptoms on presentation Pralidoxime has been used in some cases of carbamate poisoning, although other cases have resolved from supportive care alone. Pralidoxime is probably of little value in N-methyl carbamate poisonings and is not indicated in isolated carbamate poisonings. Atropine alone usually is effective.
4. Observe patient closely for at least 24-48 hours to ensure that symptoms (sweating, visual disturbances, vomiting, diarrhea, chest and abdominal distress, and sometimes pulmonary oedema) do not recur as atropinization is withdrawn.

	The observation period should be longer in the case of mixed pesticide ingestion, because of the prolonged and delayed symptoms associated with organophosphate poisoning. As the dosage of atropine is reduced over time, check the lung bases frequently for crackles. Atropinization must be reestablished promptly if crackles are heard or if there is a return of miosis, sweating or other signs of poisoning. Monitor pulmonary ventilation carefully, particularly in poisonings by large doses. of N-methyl carbamates, even after recovery from muscarinic symptomatology, to forestall respiratory failure. 5. Monitor cardiac status in severely poisoned patients by continuous ECG recording. 6. Give adrenergic amines (n-morphine, succinlycholine, theophylline, phenothiazines and reserpine) only if there is a specific indication, such as marked hypotension. Otherwise, they are probably contraindicated in N-methyl carbamate poisoning cases. 7. Treat cases in which liquid concentrates of some carbamates formulated in a petroleum product base have been ingested as acute respiratory distress syndrome. Hydrocarbon aspiration may complicate these poisonings. Pulmonary edema and poor oxygenation in these cases will not respond to atropine.

35. Monocrotophos 36% SL

Active Ingredient	Monocrotophos 36% SL
Category	Insecticides
Chemical Class	Organophosphorous
Symptoms of Poisoning	Monocrotophos toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, Vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and Increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension; CNS Effects: Anxiety, Restlessness, Confusion.

	Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM) :- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

36. Neem Based EC Containing Azadirachtin - 1% (10000 ppm) Min

Active Ingredient	Neem Based EC Containing Azadirachtin-1%
Category	Insecticide
Chemical Class	Triterpenoid
Symptoms of Poisoning	Eye irritation, skin irritation, reduced activity, shallow respiration, nasal discharge, photo reaction, diarrhea.
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive. Wash skin thoroughly with soap and water if skin has been exposed. Do not use gastric emptying or catharsis because of severe gastrointestinal irritation. Do not use activated charcoal when there is severe GI irritation.

37. Novaluron 10% EC

Active Ingredient	Novaluron 10% EC
Category	Insecticide
Chemical Class	Benzylurea (Insect growth regulator)
Symptoms of Poisoning	While Novaluron is considered to have relatively low toxicity to humans, accidental exposure or poisoning can cause symptoms. Inhalation may cause coughing, shortness of breath, chemical pneumonitis, lung oedema, bronchospasm. Ingestion may cause vomiting, nausea, diarrhea. In case of skin contact - redness, oedema or dermatitis may occur. Eye contact may result in tears or redness.
Treatments including Antidote	Therein no specific antidote. Treat symptomatically and give supportive therapy. It ingested, perform gastric lavage and administer activated charcoal.

38. Permethrin 25% EC

Active Ingredient	Permethrin 25% EC
Category	Insecticides
Chemical Class	Synthetic Pyrethroid
Symptoms of Poisoning	Permethrin is relatively safe for humans when used as directed, exposure to high doses or improper use can lead to poisoning. Symptoms of Permethrin poisoning can vary depending on the route of exposure (inhalation, ingestion, or dermal contact) and the dose. Neurological Symptoms (due to its effect on sodium channels in nerves): Tingling or burning sensation (paresthesia), especially on the skin, Headache, Dizziness, Nausea and vomiting, Restlessness or agitation, Tremors or muscle twitching, Seizures (in severe cases), Respiratory Symptoms (if inhaled): Shortness of breath, Coughing, Throat irritation, Chest tightness, Bronchospasm, Abdominal pain or cramps. Skin and Eye Irritation (if contacted): Redness, itching, or rash on the skin, Redness, itching, or rash on the skin. In severe cases there may be convulsion, loss of consciousness and respiratory failure. Cardiac arrhythmia are rare. Allergic manifestation can be seen in hypersensitive patients.

Treatments including Antidote	No antidote available for Permethrin poisoning, and its treatment is largely symptomatic and supportive. Antihistamines or corticosteroids for severe skin or eye reactions. Benzodiazepines (e.g., diazepam) to control seizures or tremors. Bronchodilators and oxygen therapy for respiratory distress. IV fluids to manage dehydration from vomiting or diarrhea. Monitoring and stabilization of vital signs. For respiratory Distress provide mechanical ventilation if necessary. Administer intravenous calcium gluconate if symptoms suggest neuromuscular irritability. In case of allergic manifestation antihistaminic can be given. In case of skin paraesthesia topical application of Vit E oil may be done. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. Avoid atropine (commonly used for organophosphate poisoning) as it is not effective in pyrethroid poisoning. Recovery is spontaneous and without sequelae.

39. Phenthoate 50% EC

Active Ingredient	Phenthoate 50%EC
Category	Insecticides
Chemical Class	Organophosphate
Symptoms of Poisoning	Phenthoate toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, vomiting, Bradycardia, Hypotension, constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects: Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects: Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).

Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

40. Phosphamidon 40% SL

Active Ingredient	Phosphamidon 40% SL
Category	Insecticides
Chemical Class	Organophosphate
Symptoms of Poisoning	Phosphamidon toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).

Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

41. Profenofos

Active Ingredient	Profenofos
Category	Insecticides
Chemical Class	Organophosphate
Symptoms of Poisoning	Profenofos toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, vomiting, Bradycardia, Hypotension, constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects: - Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).

Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

42. Propoxur 20% EC

Active Ingredient	Propoxur
Category	Insecticides
Chemical Class	Carbamate
Symptoms of Poisoning	Propuxure is a moderately toxic Insecticide. The signs and symptoms are based on excessive cholinergic stimulation. Carbamate poisonings tend to be of shorter duration than organophosphate poisonings because of the reversibility of the AChE binding and the more rapid metabolism of carbamates. Malaise, muscle weakness, dizziness and sweating are commonly reported early symptoms. Miosis with blurred vision, incoordination, muscle twitching and slurred speech are reported. Headache, salivation, nausea, vomiting, abdominal pain and diarrhea are often prominent. Transient hyperbilirubinemia may occur. The most severe manifestations of carbamate poisoning occur in the respiratory and central nervous (CNS) systems. CNS findings include coma, seizures and hypotonicity, and nicotinic effects including hypertension and cardiorespiratory depression.

	The respiratory depression also results from skeletal muscle impairment in which the chest wall cannot expand for adequate respiration. Dyspnea, bronchospasm and bronchorhea with eventual pulmonary edema are other serious signs. Data indicate that children and adults differ in their clinical presentation. Children are more likely than adults to present with the CNS symptoms above. While children can develop the classic muscarinic signs, the absence of them does not exclude the possibility of carbamate poisoning in the presence of CNS depression.
Treatments including Antidote	**Antidote-Atropine** 1.Ensure that a clear airway exists. Intubate the patient and aspirate the secretions with a large bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. 2.Administer atropine sulfate intravenously or intramuscularly. If intravenous injection is not possible, Atropine can be administered in small volume doses through an endotracheal tube if initial IV access is difficult to obtain. Carbamates may reverse with smaller dosages of atropine than those required to reverse organophosphates, though the required dosage is still considerably larger than that required to atropinize a non-poisoned patient. A common dosing pitfall is giving too little atropine initially to achieve timely atropinization. Severely poisoned individuals may exhibit remarkable tolerance to atropine and require large doses. **Dose of Atropine -** Adults and Children over 12 years- Initial Dose: 1-3 mg IV. Repeat in 3-5 minutes if no change in clinical symptoms. Dose may be doubled with each administration until the patient is atropinized. Once adequate atropinization has been achieved, the patient can be maintained on an atropine continuous infusion at about 10%-20% of the loading dose and titrated to effect. Clear breath sounds and absent pulmonary secretions are the primary end point. Other signs of atropinization including flushing, dry mouth and dilated pupils; tachycardia (pulse of 140 per minute) may occur.

	Early in therapy, monitor for improving blood pressure and heart rate (above 80 beats/ minute), normal pupil size and drying of the skin and axillae. Autoinjectors containing 2.0 mg atropine for IM injection are also available. Children Under 12 years- Initial Dose: 0.02 mg/kg body weight IV. As with adults, double the dose every 5 minutes until pulmonary secretions are controlled. Consider continuous infusion at 10%-20% of the required loading dose and titrate. Signs of atropinization, including: flushing, dry mouth, dilated pupils and heart rates vary depending on age of child, with young toddlers having a rate approaching 200. Crackles in the lung bases nearly always indicate inadequate atropinization, and pulmonary improvement may not parallel other signs. Continuation of, or return of, cholinergic signs indicate the need for more atropine. The objective of atropine antidotal therapy is to antagonize the effects of excessive concentrations of acetylcholine at end - organs having muscarinic receptors. Atropine does not reactivate AChE or accelerate excretion or breakdown of carbamate. Multiple doses of atropine may be necessary, as recrudescence of poisoning can occur if tissue concentrations of toxicant remain high when the antidotal effect wears off. Atropine is effective against muscarinic manifestations, but is ineffective against nicotinic actions, specifically muscle weakness and twitching, and respiratory depression. Despite these limitations, atropine is often a lifesaving agent in carbamate poisonings. Reassess the clinical situation after an adequate loading dose has been given. If symptoms persist, but the history is consistent with carbamate poisoning, then continue atropine therapy. However, if the clinical picture is unclear, clinicians should reassess and consider alternative causes of poisoning, such as pyrethroid insecticide poisoning, which may present a similar clinical picture. In moderately severe poisoning (hypersecretion and other end-organ manifestations without central nervous system depression) the in above dosage schedules have proven effective. 3. Pralidoxime is probably of little value in carbamate poisonings and is not indicated in isolated carbamate poisonings. Atropine alone usually is effective. 4. Observe patient closely for at least 24-48 hours to ensure that symptoms (sweating, visual disturbances, vomiting, diarrhoea,

	chest and abdominal distress, and sometimes pulmonary oedema) do not recur as atropinization is withdrawn. The observation period should be longer in the case of mixed pesticide ingestion, because of the prolonged and delayed symptoms associated with organophosphate poisoning. As the dosage of atropine is reduced over time, check the lung bases frequently for crackles. Atropinization must be reestablished promptly if crackles are heard or if there is a return of miosis, sweating or other signs of poisoning. Monitor pulmonary ventilation carefully, particularly in poisonings by large doses. of carbamates, even after recovery from muscarinic symptomatology, to forestall respiratory failure. 5. Monitor cardiac status in severely poisoned patients by continuous ECG recording. 6. Give adrenergic amines (n-morphine, succinlycholine, theophylline, phenothiazines and reserpine) only if there is a specific indication, such as marked hypotension. Otherwise, they are probably contraindicated in carbamate poisoning cases. 7. Treat cases in which liquid concentrates of some carbamates formulated in a petroleum product base have been ingested as acute respiratory distress syndrome. Hydrocarbon aspiration may complicate these poisonings. Pulmonary edema and poor oxygenation in these cases will not respond to atropine.

43. Pyridalyl 10 % EC

Active Ingredient	Pyridalyl 10 % EC
Category	Insecticides
Chemical Class	Unclassified
Symptoms of Poisoning	Ingestion: Nausea, Vomiting, Abdominal pain, Diarrhea, Possible irritation to the gastrointestinal tract. Inhalation: Respiratory irritation, Coughing, Shortness of breath, Dizziness or headache in cases of prolonged exposure to high concentrations. Skin Contact: Mild skin irritation, Redness or rash, Eye irritation, Fatigue, Dizziness, Muscle weakness
Treatments including Antidote	No known Antidotes. Treatment is symptomatic and supportive.

44. Pyriproxyfen 0.5% GR

Active Ingredient	Pyriproxyfen 0.5% GR
Category	Insecticide
Chemical Class	Oxadiazine
Symptoms of Poisoning	No specific sign and symptom however transient to minimal symptoms such as decrease of spontaneous activity, soft feaces and diarrhea may observed.
Treatments including Antidote	No specific antidotes. Treat symptomatically. Do not induce vomiting unless advised by a healthcare professional. Rinse the mouth with water and drink small sips of water.

45. Quinalphos 25% EC

Active Ingredient	Quinalphos 25% EC
Category	Insecticide
Chemical Class	Organophosphate
Symptoms of Poisoning	Quinalphos toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, Vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures.

	Antidotes: Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure.

46. Spinosad

Active Ingredient	Spinosad
Category	Insecticides
Chemical Class	Spinosin
Symptoms of Poisoning	Spinosad is a biologically based synthetic pesticide. Spinosad has low mammalian oral toxicity (LD50 rat is >3,000 mg/kg). Similar to fipronil, Spinosad have a much higher affinity for insects than for mammals. There have not been reports of human toxicity in the medical literature.
Treatments including Antidote	No known Antidotes. Treatment is symptomatic and supportive.

47. Spiromesifen 240 SC

Active Ingredient	Spiromesifen 240 SC
Category	Insecticides
Chemical Class	Ketoanol
Symptoms of Poisoning	No human poisoning cases have been reported.
Treatments including Antidote	No known Antidotes. Treatment is symptomatic and supportive.

48. Thiacloprid 240 SC

Active Ingredient	Thiacloprid 240
Category	Insecticides
Chemical Class	Neonicotinoid
Symptoms of Poisoning	Toxic effects bear some resemblance to those of acute nicotine poisoning except for GI corrosive injuries, which may be related to solvent effects. Human poisoning appears most likely following ingestion or inhalation. Most clinical effects are based on excessive nicotinic stimulation. Symptoms:- Disorientation, Confusion and Agitation. Headache, drowsiness, dizziness, weakness, tremor and in some situations, loss of consciousness. No seizures have been reported. Following ingestion, ulceration was noted in the posterior pharynx, esophagus and stomach. It was not clear if the effects were due to the toxicity of the active ingredient or the accompanying solvent. There is evidence that a solvent found in some formulations, N-methyl pyrrolide (NMP), has a severe irritant effect. This emphasizes the importance of identifying and understanding the effects of inert ingredients in any pesticide exposure. Unfortunately, identification of such ingredients is usually difficult as they are not disclosed on the label and it is necessary to contact the formulator directly to determine which inert ingredients are in the formulation. Respiratory Signs and symptoms include labored breathing, chest tightness, dyspnoea, hypoxia and aspiration pneumonia. In severe cases, respiratory failure has ensued, requiring mechanical ventilation. Rhabdomyolysis may occur in severe poisoning; with creatine phosphokinase levels being reported as high as 1,200 U/L. Renal function and serum electrolytes were normal in this case. Patients will usually present with tachycardia due to nicotinic receptor over-stimulation of the autonomic nervous system. Cardiovascular effects include tachycardia, bradycardia, hypertension, hypotension and palpitations. (One case of fatal arrhythmia has been reported in which the patient presented within hours of ingesting 200 ml of imidacloprid. She initially had sinus tachycardia that rapidly progressed to ventricular tachycardia and subsequently ventricular fibrillation).

Treatments including Antidote	1. Provide supportive treatment, as there is no specific antidote for neonicotinoid poisoning. Patients with significant mental status changes should ideally be managed in the intensive care setting, at least initially. 2. Use GI decontamination as per guidelines. 3. Control extreme agitation with lorazepam or propofol. 4. Consider cardiac monitoring, especially in patients with risk factors for coronary artery disease. 5. In a severe poisoning, send patient to an intensive care setting for respiratory support.

49. Thiamethoxam

Active Ingredient	Thiamethoxam
Category	Insecticides
Chemical Class	Neonicotinoid
Symptoms of Poisoning	Toxic effects bear some resemblance to those of acute nicotine poisoning except for GI corrosive injuries, which may be related to solvent effects. Human poisoning appears most likely following ingestion or inhalation. Most clinical effects are based on excessive nicotinic stimulation. Symptoms: Disorientation, confusion and agitation, headache, drowsiness, dizziness, weakness, tremor and, in some situations, loss of consciousness. No seizures have been reported. Following ingestion, ulceration was noted in the posterior pharynx, esophagus and stomach. It was not clear if the effects were due to the toxicity of the active ingredient or the accompanying solvent. There is evidence that a solvent found in some formulations, N-methyl pyrrolide (NMP), has a severe irritant effect. This emphasizes the importance of identifying and understanding the effects of inert ingredients in any pesticide exposure. Unfortunately, identification of such ingredients is usually difficult as they are not disclosed on the label and it is necessary to contact the formulator directly to determine which inert ingredients are in the formulation. Respiratory Signs and symptoms include labored breathing, chest tightness, dyspnoea, hypoxia and aspiration pneumonia. In severe cases, respiratory failure has ensued, requiring mechanical ventilation.

	Rhabdomyolysis may occur in severe poisoning; with creatine phosphokinase levels being reported as high as 1,200 U/L. Renal function and serum electrolytes were normal in this case. Patients will usually present with tachycardia due to nicotinic receptor over-stimulation of the autonomic nervous system. Cardiovascular effects include tachycardia, bradycardia, hypertension, hypotension and palpitations. One case of fatal arrhythmia has been reported in which the patient presented within hours of ingesting 200 mL of imidacloprid. She initially had sinus tachycardia that rapidly progressed to ventricular tachycardia and subsequently ventricular fibrillation.
Treatments including Antidote	1. Provide supportive treatment, as there is no specific antidote for neonicotinoid poisoning. Patients with significant mental status changes should ideally be managed in the intensive care setting, at least initially. 2. Use GI decontamination as per guidelines. 3. Control extreme agitation with lorazepam or propofol. 4. Consider cardiac monitoring, especially in patients with risk factors for coronary artery disease. 5. In a severe poisoning, send patient to an intensive care setting for respiratory support.

50. Thiodicarb 75 WP

Active Ingredient	Thiodicarb 75
Category	Insecticides
Chemical Class	Carbamate
Symptoms of Poisoning	The signs and symptoms are based on excessive cholinergic stimulation. Carbamate poisonings tend to be of shorter duration than organophosphate poisonings because of the reversibility of the AChE binding and the more rapid metabolism of carbamates. Malaise, muscle weakness, dizziness and sweating are commonly reported early symptoms. Miosis with blurred vision, incoordination, muscle twitching and slurred speech are reported. Headache, salivation, nausea, vomiting, abdominal pain and diarrhoea are often prominent. Transient hyperbilirubinemia may occur. The most severe manifestations of carbamate poisoning occur in the respiratory and central nervous (CNS) systems.

	CNS findings include coma, seizures and hypotonicity, and nicotinic effects including hypertension and cardiorespiratory depression. The respiratory depression also results from skeletal muscle impairment in which the chest wall cannot expand for adequate respiration. Dyspnea, bronchospasm and bronchorhea with eventual pulmonary edema are other serious signs. Data indicate that children and adults differ in their clinical presentation. Children are more likely than adults to present with the CNS symptoms above. While children can develop the classic muscarinic signs, the absence of them does not exclude the possibility of carbamate poisoning in the presence of CNS depression.
Treatments including Antidote	**Antidote-Atropine** 1. Ensure that a clear airway exists. Intubate the patient and aspirate the secretions with a large bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. 2. Administer atropine sulfate intravenously or intramuscularly. If intravenous injection is not possible, Atropine can be administered in small volume doses through an endotracheal tube if initial IV access is difficult to obtain. Carbamates may reverse with smaller dosages of atropine than those required to reverse organophosphates, though the required dosage is still considerably larger than that required to atropinize a non-poisoned patient. A common dosing pitfall is giving too little atropine initially to achieve timely atropinization. Severely poisoned individuals may exhibit remarkable tolerance to atropine and require large doses. Dose of Atropine- Adults and Children over 12 years Initial Dose: 1-3 mg IV. Repeat in 3-5 minutes if no change in clinical symptoms. Dose may be doubled with each administration until the patient is atropinized. Once adequate atropinization has been achieved, the patient can be maintained on an atropine continuous infusion at about 10%-20% of the loading dose and titrated to effect. Clear breath sounds and absent pulmonary secretions are the primary end point.

Treatments including Antidote	Other signs of atropinization including flushing, dry mouth and dilated pupils; tachycardia (pulse of 140 per minute) may occur. Early in therapy, monitor for improving blood pressure and heart rate (above 80 beats/ minute), normal pupil size and drying of the skin and axillae. Auto-injectors containing 2.0 mg atropine for IM injection are also available. Children Under 12 Years Initial Dose: 0.02 mg/kg body weight IV. As with adults, double the dose every 5 minutes until pulmonary secretions are controlled. Consider continuous infusion at 10%-20% of the required loading dose and titrate. Signs of atropinization, including: flushing, dry mout, dilated pupils and heart rates vary depending on age of child, with young toddlers having a rate approaching 200. Crackles in the lung bases nearly always indicate inadequate atropinization, and pulmonary improvement may not parallel other signs. Continuation of, or return of, cholinergic signs indicate the need for more atropine. The objective of atropine antidotal therapy is to antagonize the effects of excessive concentrations of acetylcholine at end-organs having muscarinic receptors. Atropine does not reactivate AChE or accelerate excretion or breakdown of carbamate. Multiple doses of atropine may be necessary, as recrudescence of poisoning can occur if tissue concentrations of toxicant remain high when the antidotal effect wears off. Atropine does not reactivate AChE or accelerate excretion or breakdown of carbamate. Multiple doses of atropine may be necessary, as recrudescence of poisoning can occur if tissue concentrations of toxicant remain high when the antidotal effect wears off. Atropine is effective against muscarinic manifestations, but is ineffective against nicotinic actions, specifically muscle weakness and twitching, and respiratory depression. Despite these limitations, atropine is often a lifesaving agent in carbamate poisonings. Reassess the clinical situation after an adequate loading dose has been given. If symptoms persist, but the history is consistent with carbamate poisoning, then continue atropine therapy. However, if the clinical picture is unclear, clinicians should reassess and consider alternative causes of poisoning, such as pyrethroid insecticide poisoning, which may present a similar clinical picture. In moderately severe poisoning (hypersecretion and other end-organ manifestations without central nervous system depression) the in above dosage schedules have proven effective.

	3. Pralidoxime is probably of little value in carbamate poisonings and is not indicated in isolated carbamate poisonings. Atropine alone usually is effective. 4. Observe patient closely for at least 24-48 hours to ensure that symptoms (sweating, visual disturbances, vomiting, diarrhea, chest and abdominal distress, and sometimes pulmonary oedema) do not recur as atropinization is withdrawn. The observation period should be longer in the case of mixed pesticide ingestion, because of the prolonged and delayed symptoms associated with organophosphate poisoning. As the dosage of atropine is reduced over time, check the lung bases frequently for crackles. Atropinization must be reestablished promptly if crackles are heard or if there is a return of miosis, sweating or other signs of poisoning. Monitor pulmonary ventilation carefully, particularly in poisonings by large doses of carbamates, even after recovery from muscarinic symptomatology, to forestall respiratory failure. 5. Monitor cardiac status in severely poisoned patients by continuous ECG recording. 6. Give adrenergic amines (n-morphine, succinlycholine, theophylline, phenothiazines and reserpine) only if there is a specific indication, such as marked hypotension. Otherwise, they are probably contraindicated in carbamate poisoning cases..

Long lasting insecticide impregnated net

1. HDPE long lasting nets incorporated with permethrin 2% w/w

Active Ingredient	Permethrin
Category	Long lasting insecticide impregnated net
Chemical Class	Syntheic pyrethroid
Symptoms of Poisoning	Poisoning symptoms could be due to dermal contact or inhalation. Mostly allergic manifestations.
Treatments including Antidote	No antidote. Antihistaminic could be given. For skin irritation Vit E oil could be applied.

Microbial

1. *Bacillus thrungiensis var Krustaki* (Dipel 8L strain HD-1, Serotype 3A, 3B)

Active Ingredient	Bacillus thrungiensis var Krustaki (Dipel 8L strain HD-1, Serotype 3A, 3B)
Category	Microbial
Chemical Class	*B.t. subsp. kurstaki*
Symptoms of Poisoning	Usually no symptoms in human. A single case of corneal ulcer caused by a splash of B. thuringiensis suspension into the eye has been reported. Observe a patient who has ingested the product for manifestations of bacterial gastroenteritis: abdominal cramps, vomiting and diarrhea. The illness is likely to be self-limited if it occurs at all.
Treatments including Antidote	The patient should be treated symptomatically and fluid support provided as appropriate. Remove eye contamination by copious flushing of the eyes with clean wateror saline. If irritation persists, or if there is any indication of infection, refer patient for further treatment by appropriate specialist.

2. *Bacillus thrungiensis varisraelensis serotype H14*

Active Ingredient	Bacillus thrungiensis varisraelensis serotype H14
Category	Microbial
Chemical Class	*B.t. subsp. israelensis*
Symptoms of Poisoning	Usually no symptoms in human. A single case of corneal ulcer caused by a splash of B. thuringiensis suspension into the eye has been reported. Observe a patient who has ingested the product for manifestations of bacterial gastroenteritis: abdominal cramps, vomiting and diarrhea. The illness is likely to be self-limited if it occurs at all.
Treatments including Antidote	The patient should be treated symptomatically and fluid support provided as appropriate. Remove eye contamination by copious flushing of theeyes with clean water or saline. If irritation persists, or if there is any indication of infection, refer patient for further treatment by appropriate specialist.

Plant Growth Regulator

1. Chlormequat Chloride 50% SL

Active Ingredient	Chlormequat Chloride 50%
Category	Plant Growth Regulator
Chemical Class	Quaternary ammonium compound
Symptoms of Poisoning	Though Chlormequat Chloride (CCC) is considered to have low toxicity in humans, improper use or exposure to high concentrations can result in poisoning. Inhalation:- Irritation of the respiratory tract, Coughing, Shortness of breath, Sore throat, Dizziness or headache (in severe cases), Ingestion:- Nausea, Vomiting, Abdominal pain, Diarrhea Salivation, Weakness or drowsiness in severe exposure Skin irritation, Redness or rash, Allergic reaction in sensitive individuals, Eye irritation, Redness and tearing, Burning or stinging sensation in the eyes. Severe or Prolonged Exposure Symptoms: Hypotension (low blood pressure) in cases of large ingestion and Neurological symptoms such as Confusion, Dizziness, or Lethargy.
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive. If ingested, evacuate stomach contents by Gastric lavage 1-3 mg of neostigmine methyl sulfate, intravenously combined with 0.6-1.2 mg of atropine sulfate for depolarizing type of GBA.

2. Ethephon

Active Ingredient	Ethephon
Category	Plant Growth Regulator
Chemical Class	Organophsphate
Symptoms of Poisoning	Ethephon toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and increased bronchial secretions.

	Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects: - Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise).
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed.

3. Gibberellic Acid (GA)

Active Ingredient	Gibberellic Acid (GA)
Category	Organic acid derivatives (Growth Promoting Agent)
Chemical Class	Gibberelline
Symptoms of Poisoning	No human poisonings have been reported. Sensitization has not been reported, and irritant effects are not remarkable.
Treatments including Antidote	Provide supportive treatment for any toxic effects in humans, as there is no known antidote. Wash contamination from skin with soap and water. Flush contamination from eyes with clean water or saline. If irritation occurs, refer patient for further medical treatment. For significant ingestion, consider gastrointestinal decontamination although that may not be necessary.

4. Napthalene Acetic Acid

Active Ingredient	Napthalene Acetic Acid
Category	Plant Growth Regulator
Chemical Class	Organic Acid derivative
Symptoms of Poisoning	Irritation of the eyes and upper respiratory tract. Headache, dizziness, nausea, and vomiting. Hemolysis, secondary renal tubular damage, convulsions, coma, ecephalopathy, and kernicterus.
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive.

5. Paclobutrazole 23.5% SC

Active Ingredient	Paclobutrazole 23.5%
Category	Plant Growth Regulator
Chemical Class	Triazole
Symptoms of Poisoning	Nervousness, anxiety, tremors, convulsions, allergic manifestations
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive.

6. Triacontanol

Active Ingredient	Triacontanol
Category	Plant Growth Regulator
Chemical Class	Aliphatic alcohol
Symptoms of Poisoning	Liquid may irritate eyes Prolonged skin contact may cause dermatitis. Inhalation and ingestion have a very low order of toxicity.
Treatments including Antidote	No antidote is known. Treatment is symptomatic and supportive.

7. Trichloroacetic Acid (TCA)

Active Ingredient	Trichloroacetic acid (TCA)
Category	Organic Acid derivative
Chemical Class	Organic Acid
Symptoms of Poisoning	Burning sensation. Cough. Headache. Laboured breathing. Nausea. Shortness of breath. Sore throat. Vomiting. Symptoms may be delayed. Redness. Skin burns. Pain. Blisters. Abdominal pain. Burning sensation. Shock or collapse.
Treatments including Antidote	There is no specific antidote for trichloroacetic acid (TCA) poisoning. Treatment is primarily supportive and symptomatic, focusing on mitigating the corrosive effects and managing complications.

Rodenticide

1. Alluminum Phosphide

Active Ingredient	Alluminum Phosphide
Category	Rodenticide
Chemical Class	Metal
Symptoms of Poisoning	The principal manifestations of poisoning are fatigue, nausea, headache, dizziness, thirst, cough, shortness of breath, tachycardia, chest tightness, paresthesia and jaundice. Cardiogenic shock is present in more severe cases. Pulmonary edema is a common cause of death. In other fatalities, ventricular arrhythmias, conduction disturbances and asystole developed. The odor of phosphine is said to resemble that of decaying fish.
Treatments including Antidote	Experience suggests that therapy with magnesium sulfate may decrease the likelihood of a fatal outcome. The mechanism is unclear, but may possibly be due to the membrane stabilization properties of magnesium in protecting the heart from fatal arrhythmias. Dosage for Magnesium Sulfate - 3 grams during the first 3 hours as a continuous infusion, followed by 6 grams per 24 hours for the next 3 to 5 days. No specific antidote, treat symptomatically.

2. Bromadiolon

Active Ingredient	Bromadiolon
Category	Rodenticide
Chemical Class	Anticoagulant
Symptoms of Poisoning	Bleeding nose/gums, hematuria, melena, eccymoses days after ingestion, headache, confusion, loss of consciousness, seizures Increase in PT/INR.
Treatments including Antidote	Monitor PT/INR Give Vitamin K1 upon PT/ INR evidence. Dose of Vitamin K1-Adults: 10-50 mg orally, 2-4 times per day Children: 5-10 mg (or 0.4 mg/kg/dose) orally, 2-4 times per day. Give patients who present with active bleeding fresh frozen plasma or whole blood, while also receiving vitamin K1. This will temporize the bleeding until the vitamin K1 has time to replenish the missing factors. *Vitamin K3 or K4 are contraindicate.*

3. Coumatetralyl

Active Ingredient	Coumatetralyl
Category	Rodenticide
Chemical Class	Anticoagulant
Symptoms of Poisoning	Bleeding nose/gums, hematuria, melena, eccymoses days after ingestion, headache, confusion, loss of consciousness, seizures Increase in PT/INR.
Treatments including Antidote	Monitor PT/INR Give Vitamin K1 upon PT/ INR evidence. Dose of Vitamin K1- Adults: 10-50 mg orally, 2-4 times per day. Children: 5-10 mg (or 0.4 mg/kg/dose) orally, 2-4 times per day. Give patients who present with active bleeding fresh frozen plasma or whole blood, while also receiving vitamin K1. This will temporize the bleeding until the vitamin K1 has time to replenish the missing factors. *Vitamin K3 or K4 are contraindicate.*

4. Flocoumafen Block bait

Active Ingredient	Flocoumafen 0.025g/kg (0.0025% w/w)
Category	Rodenticide
Chemical Class	4-hydroxycoumarin
Symptoms of Poisoning	Symptoms: coagulation disorders Increased tendency to bleed. In severe cases, massive bleeding from internal organs may result in circulatory shock, which could prove fatal. The onset of symptoms is delayed for up to 4 days after uptake. Hazards: The substance / product is an anticoagulant rodenticide with a coumarin-type mode of action
Treatments including Antidote	Treatment: Symptomatic treatment (decontamination, vital functions). Antidote: Vitamin K1 preparation as antidote.

5. Sodium Cyanide

Active Ingredient	Sodium Cyanide
Category	Rodenticide
Chemical Class	Fumigant
Symptoms of Poisoning	Low-dose exposures cause a constriction and numbness in the throat, stiffness of the jaw, salivation, nausea, vomiting, lightheadedness and apprehension. Worsening of the poisoning manifests as violent tonic or clonic convulsions. Fixed, dilated pupils, bradycardia and irregular gasping respiration. Cyanosis is a late sign and indicates circulatory collapse. The heart often continues to beat after breathing has stopped. A bitter almond odor to the breath or vomitus may be a clue to poisoning, but not all individuals are able to detect this odor.
Treatments including Antidote	1. Hydroxycobalamin has been known from animal studies to be an effective antidote for cyanide poisoning. Hydroxycobalamin has a higher affinity for cyanide than do tissue cytochromes, thereby competitively binding and inactivating both free and cytochrome-bound cyanide. The cyanocobalamin formed is readily excreted by the kidney. The product became commercially available in 2007 in the United States.

	2. Administer oxygen continuously. Hyperbaric oxygen has been evaluated as effective in this condition. If respiration fails, maintain pulmonary ventilation mechanically. 3. Measure haemoglobin and methaemoglobin in blood. If more than 50% of total haemoglobin has been converted to methaemoglobin, consider blood transfusion or exchange transfusion, because conversion back to normal haemoglobin proceeds slowly. 4. Although various cobalt salts, chelators and organic combinations have shown some promise as antidotes to cyanide, they are not generally available.

6. Warfaren

Active Ingredient	Warfaren
Category	Rodenticide
Chemical Class	Anticoagulant
Symptoms of Poisoning	Bleeding nose/gums, hematuria, melena, eccymoses days after ingestion, headache, confusion, loss of consciousness, seizures Increase in PT/INR.
Treatments including Antidote	Monitor PT/INR Give Vitamin K1 upon PT/ INR evidence. Dose of Vitamin K1-Adults: 10-50 mg orally, 2-4 times per day Children: 5-10 mg (or 0.4 mg/kg/dose) orally, 2-4 times per day. Give patients who present with active bleeding fresh frozen plasma or whole blood, while also receiving vitamin K1. This will temporize the bleeding until the vitamin K1 has time to replenish the missing factors. Vitamin K3 or K4 are contraindicate.

7. Zinc Phosphide

Active Ingredient	Zinc Phosphide
Category	Rodenticide
Chemical Class	Inorganic
Symptoms of Poisoning	Less corrosive than yellow phosphorus. Can be very toxic following Ingestion. Nausea and vomiting, agitation, chills, chest tightness, dyspnea and cough may progress to pulmonary edema. These symptoms, as well as systemic toxicity, may be delayed or present after initial benign exam. Patients face many of the same systemic toxicities encountered with yellow phosphorous, including hepatic failure with jaundice and hemorrhage, delirium, convulsions and coma (from toxic encephalopathy); tetany from hypocalcemia and anuria from renal tubular damage. Ventricular arrhythmias from cardiomyopathy and shock also may occur common cause of death. Severe hypoglycemia has also been reported, which is also thought to be of hepatic origin by inhibition of glycogenolysis and gluconeogenesis. (Conversely, hyperglycemia has been reported following ingestion of the fumigant aluminum phosphide). Inhalation of phosphine gas from improper use of phosphide rodenticides has resulted in pulmonary edema, myocardial injury and multisystem involvement.
Treatments including Antidote	Experience suggests that therapy with magnesium sulfate may decrease the likelihood of a fatal outcome. The mechanism is unclear, but may possibly be due to the membrane stabilization properties of magnesium in protecting the heart from fatal arrhythmias. Dosage for Magnesium Sulfate - 3 grams during the first 3 hours as a continuous infusion, followed by 6 grams per 24 hours for the next 3 to 5 days. No specific antidote, treat symptomatically.

MANAGEMENT OF POISONING DUE TO COMBINATION PESTICIDES

Management of poisoning due to **combination of two or more pesticides** involves several steps, guided by **toxicological principles, clinical symptoms, and known toxicodynamics** of the compounds and systematic evidence-based and supportive approach. Since mixtures can involve **synergistic or additive toxic effects,** treatment needs to be **comprehensive, supportive, and anticipatory.**

Triage is a process of prioritizing patients based on the severity of their condition and the resources available, ensuring that those with the most critical needs receive immediate attention. It's a system for sorting and categorizing patients to determine the order in which they should be seen and treated. The goal is to optimize care in situations where there are more patients than available resources, like in emergency situations or mass casualty incidents.

Step 1:
Initial Assessment and Stabilization

ABCDE approach:

AIRWAY: Ensure patency; intubate if patient is unconscious or has compromised airway.

BREATHING: Provide oxygen; ventilate if respiratory depression or failure.

CIRCULATION: Monitor pulse, BP; IV fluids for hypotension.

DISABILITY: Assess GCS, pupils, seizure activity.

EXPOSURE: Decontaminate patient; remove clothing; wash skin.

Step 2:
History and Identification

Ask for exposure history: Product names, amount ingested, route (oral, dermal, inhalation), time since exposure.
Obtain product label or container for exact chemical composition.

Organophosphate + Pyrethroid

Carbamate + Fungicide

Herbicide + Insecticide

Insecticide + Insect Growth Regulator (IGR)

Herbicide + Herbicide

Step 3:
Triage Based on Major Classes

Once components are known, identify the toxic action of each:

Class	Key Toxicity	Antidote
Organophosphate	Cholinergic crisis	Atropine, Pralidoxime
Carbamates	Similar to OP, shorter duration	Atropine (Pralidoxime usually not needed)
Pyrethroids	Neurotoxicity, seizures	Supportive, Benzodiazepines
Paraquat	Pulmonary fibrosis, multi-organ failure	No specific antidote, aggressive decontamination
Glyphosate	GI corrosive, cardiovascular	Supportive
Organochlorines	CNS excitation	Supportive, benzodiazepines
Neonicotinoids	CNS symptoms	Supportive

If multiple compounds have the same effect (e.g., cholinergic), expect potentiation.

Step 4:
Decontamination

If within 1 hour	Gastric lavage (if no contraindication).
Activated charcoal	1 g/kg if not contraindicated.
Whole bowel irrigation	Consider if large ingestion or slow-release formulation.
Skin/Eye decontamination	Irrigate with water.

Step 5:
Symptomatic and Supportive Therapy

Seizures	Benzodiazepines (Diazepam, Lorazepam)
Arrhythmias	ECG monitoring; correct electrolyte imbalance
Hypotension/Shock	IV fluids, vasopressors if needed
Ventilatory support	For respiratory failure or OP poisoning

Step 6:
Specific Antidotes (If Identified)

Atropine	For muscarinic symptoms (e.g., OP, carbamate)
Pralidoxime	Only if OP poisoning confirmed
Sodium bicarbonate	In severe metabolic acidosis or arrhythmias
N-acetylcysteine (NAC)	Consider if liver injury suspected

Step 7:
Monitoring and Lab Evaluation

Serum cholinesterase	If OP/carbamate involved
Renal and Liver Function Tests,	
ABG, Electrolytes, Glucose	
Chest X-ray	If aspiration or pulmonary edema suspected
Urine analysis	For hematuria or specific metabolites

Step 8:
Prognosis and Referral

Monitor for delayed toxicity (e.g., paraquat lung fibrosis) **Admit to ICU** If unstable, severe symptoms, or unknown compounds
Organophosphate-Induced Delayed Polyneuropathy (OPIDP): Anticoagulant Rodenticides (e.g., Brodifacoum), Chlorfenapyr for delayed neurological effect after about 10 days

Important Notes

Avoid mixing antidotes blindly without identifying components.
Combination products can have **unexpected toxicity** due to formulation additives or solvents

Fungicide Combiination Products

1. Captan 70% + Hexaconazole 5% WP

Active Ingredient	Captan 70% + Hexaconazole 5%
Category	Fungicides
Chemical Class	Phthalimide + Triazole
Symptoms of Poisoning	Nausea, vomiting, abdominal pains and irritation of nose, throat and bronchia. May be allergic to some persons.
Treatments including Antidote	Treat symptomatically. If ingested induce vomiting by tickling the back of the throat. Repeat this operation until vomit is clear.

2. Carbendazim 12% + Mancozeb 63% WP

Active Ingredient	Carbendazim 12% + Mancozeb 63%
Category	Fungicids
Chemical Class	Phthalimide + Triazole
Symptoms of Poisoning	Symptoms of over exposure are headaches, nausea, vomiting, cramps, weakness, blurred vision, pin point pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eyes, drooling, muscle spasms and may be coma.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

3. Carboxin 37.5% + Thiram 37.5% DS

Active Ingredient	Carboxin 37.5% + Thiram 37.5% DS
Category	Fungicides
Chemical Class	Carboxanilide + Dithiocarbamate
Symptoms of Poisoning	The early symptoms may be combination of nausea, vomiting, when inhaled as fine droplets it may be irritating to be bronchial tubes and lung tissues.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

4. Cymoxanil 8% + Mancozeb 64% WP

Active Ingredient	Cymoxanil 8% + Mancozeb 64%
Category	Fungicides
Chemical Class	Cymoxanil – Cyanoacteamide oxime; Mancozeb- alkylenebis (dithiocarbamate)
Symptoms of Poisoning	Dizziness, incoordination, drownsiness or unconsciousness with weight loss, eye irritation with discomfort, pain or blurred vision, irritation of nose & throat with sneezing, sore throat & running nose, skin irritation with itching, redness, burning, swelling or rash.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

5. Famoxadone 16.6% + Cymoxanil 22.1% SC

Active Ingredient	Famoxadone 16.6% + Cymoxanil 22.1% SC
Category	Fungicides
Chemical Class	Famoxadone – Oxazolidinedione; Cymoxanil – Cyanoacteamide oxime
Symptoms of Poisoning	1. Ingestion of this material may cause temporary central nervous system depression with dizziness, headache, confusion, in coordination, loss of consciousness. 2. Eye contact may cause transient mild eye irritation with discomfort, tearing, pain or blurred vision. 3. Skin contact may cause irritation with itching, burning, redness, swelling, discomfort or rash. 4. Inhalation may cause irritation of upper respiratory passage with coughing and discomfort. 5. But does not cause skin sensitization.
Treatments including Antidote	No specific antidote available, treat symptomatically. If other symptoms due to cymoxanil occurs, then hydration, antibiotic, anti-edematous (mannitol) and analgesic treatment may be given.

6. Hexaconazole 4% + Zineb 68% WP

Active Ingredient	Hexaconazole 4% + Zineb 68% WP
Category	Fungicides
Chemical Class	Triazole + Dithiocarbamate
Symptoms of Poisoning	**Gastrointestinal:** Nausea, vomiting, and diarrhea are common. **Central Nervous System (CNS):** Dizziness, trembling, and in some cases, unconsciousness have been reported. **Other:** Heaviness in extremities, difficulty in breathing, and cyanosis (bluish discoloration of the skin) have also been observed. **Liver Toxicity:** Elevated liver enzymes (AST, ALT) can indicate liver damage.
Treatments including Antidote	No specific Antidote is known. Treat symptomatically. The primary focus is on providing supportive care, including good nursing care and monitoring vital signs. Treatment may involve managing symptoms like vomiting and diarrhea, and addressing any electrolyte imbalances. In cases of liver damage, monitoring liver function and supportive therapy may be necessary.

7. Mancozeb 64% + Metalaxyl 8% WP

Active Ingredient	Mancozeb 64% + Metalaxyl 8% WP
Category	Fungicides
Chemical Class	Dithiocarbamates + phenylamide
Symptoms of Poisoning	Itching, tightness in chest, palpitation, hypotension, fatigue, headache, nausea, vomiting, diarrhea. Hypothermia and ataxia may occur. In severe cases potential symptoms may include impaired vision, convulsions, slurred speech, and confusion
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

8. Metiram 55% + Pyraclostrobin 5% WG

Active Ingredient	Metiram 55% + Pyraclostrobin 5%
Category	Fungicides
Chemical Class	Ethylene bisdithiocarbamate + Strobilurin
Symptoms of Poisoning	Low acute toxicity to humans, exposure can cause eye and skin irritation, and in some cases, respiratory symptoms like throat irritation, sneezing, and coughing. If swallowed, there may be Nausea, and vomiting.
Treatments including Antidote	No Specific antidote is known. Apply symptomatic therapy.

9. Tricyclazole 18% + Mancozeb 62% WP

Active Ingredient	Tricyclazole 18% + Mancozeb 62%
Category	Fungicides
Chemical Class	Triazole + dithiocarbamate
Symptoms of Poisoning	Early symptoms may be combination of headache, giddiness, nausea, and convulsions if swallowed. due to, accidental or intentional ingestion could lead to toxic effects. Symptoms and signs depend on the amount ingested and individual sensitivity. These may include: 1. Gastrointestinal Symptoms: Nausea and Vomiting, Abdominal Pain- caused by irritation of the gastrointestinal tract. Diarrhea- due to irritation or disruption of normal gut flora. 2. Neurological Symptoms: Dizziness- a general response to poisoning. Headache- often reported with chemical exposures. Confusion or Drowsiness- in severe cases, central nervous system depression might occur. 3. Respiratory Symptoms: Difficulty in breathing- potential if the chemical irritates the respiratory tract or causes systemic toxicity.
Treatments including Antidote	No specific antidote is known. Treat symptomatically.

Herbicides Combination Products

1. 2,4-D Sodium Salt 50% (w/w) + Metribuzin 15% (w/w) WP
2. Metribuzin 16.8% + 2,4-D Sodium Salt 56% WP

Active Ingredient	1. 2,4-D Sodium Salt 48% + Metribuzin 15% (w/w) WP 2. Metribuzin-16.8% + 2,4-D Sodium Salt 56% WP
Category	Combination product - Herbicide
Chemical Class	2,4-D- chlorophenoxy herbicides Metribuzin- Triazinone herbicides
Symptoms of Poisoning	Major toxicity may be due to 2,4-D Sodium Salt, May cause mild irritation or GI upset; Nausea, vomiting, abdominal pain, Confusion, ataxia, seizures, Musculoskeletal: Muscle rigidity, rhabdomyolysis, Renal: Haematuria, oliguria (myoglobinuria-related), Liver: Elevated transaminases.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

3. 2,4-D Sodium Salt 48% + Metribuzin 32% + Chlorimuron ethyl 0.85% WDG

Active Ingredient	2,4-D Sodium Salt 48% + Metribuzin 32% + Chlorimuron ethyl 0.85% WDG
Category	Combination product - Herbicide
Chemical Class	2,4-D-Chlorophenoxy herbicides; Metribuzin-Triazinone herbicide) Chlorimuron ethyl - Sulfonylurea
Symptoms of Poisoning	Major toxicity may be due to 2,4-D Sodium Salt. May cause mild irritation or GI upset; Nausea, vomiting, abdominal pain, confusion, ataxia, seizures, Musculoskeletal: Muscle rigidity, rhabdomyolysis, Renal: Haematuria, oliguria (myoglobinuria-related), Liver: Elevated transaminases headache, dizziness (rare).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

4. 2,4-D Sodium salt 44% + Metribuzin 35% + Pyrazosulfuron ethyl 1.0% WDG

Active Ingredient	2,4-D sodium salt 44% + Metribuzin 35% + Pyrazosulfuron ethyl 1.0% WDG
Category	Combination product - Herbicide
Chemical Class	2,4-D - Chlorophenoxy herbicides; Metribuzin -Triazinone herbicide) Pyrazosulfuron ethyl - Sulfonylurea
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, burning sensation in mouth or throat, diarrhea, dizziness, headache, malaise or muscle weakness. **Severe Toxicity (high dose or delayed treatment):** CNS depression: confusion, agitation, coma, muscle twitching, hypotonia (esp. from 2,4-D), Seizures (rare), Respiratory distress or aspiration pneumonia (due to vomiting).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

5. Anilofos 24% + 2,4-D Ethyl Ester 32% EC

Active Ingredient	Anilofos 24% + 2,4-D ethyl Ester 32% EC
Category	Combination product - Herbicide
Chemical Class	Anilophos - Organophosphorus Herbicide; 2,4-D Ethyl Ester - Chlorophenoxy Herbicide
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, bitter/chemical taste, headache, dizziness, muscle twitching or stiffness, ataxia, confusion, agitation, or coma (in severe cases), cough, dyspnoea, can be **aspiration pneumonitis** (due to solvent), Pulmonary edema (rare), Muscle weakness, cramping, possible rhabdo-myolysis (esp. from 2,4-D), tachycardia.
Treatments including Antidote	**Anilofos-cholinesterase reactivation,** Rarely needed, but if signs of OP poisoning (SLUDGE symptoms): **Atropine:** Start with 0.6–1.2 mg IV every 5–10 min until secretions dry and HR>80 bpm; **Pralidoxime (2-PAM):** Consider if cholinergic crisis (not routinely used with Anilofos) **Alkaline diuresis:** For 2,4-D to enhance renal elimination (in severe cases).

Treatments including Antidote	Sodium bicarbonate + IV fluids;Requires careful monitoring of electrolytes and urine pH; **Avoid lipid solvents (e.g., oils, milk)** – increase absorption of EC formulations. **Monitoring-** Vital signs, ECG, CBC, RFT, LFT, electrolytes, CPK and ABG .

6. Ametryn 73.1% w/w + Trifloxysulfuron sodium 1.8% w/w WG

Active Ingredient	Ametryn 73.1% w/w + Trifloxysulfuron sodium 1.8% w/w WG
Category	Combination product-Herbicide
Chemical Class	Ametryn -Triazine; Trifloxysulfuron sodium - ulfonylurea
Symptoms of Poisoning	Nausea, vomiting, abdominal cramps, diarrhea, bitter taste, oral/throat irritation, headache, dizziness, fatigue, weakness, Drowsiness or confusion (with large doses of Ametryn), **Hepatic/Renal (less common, high dose),** Elevated liver enzymes.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

7. Bensulfuron methyl 0.6% + Pretilachlor 6%

Active Ingredient	Bensulfuron methyl 0.6% + Pretilachlor 6%
Category	Combination product-Herbicide
Chemical Class	Bensulfuron methyl – Sulfonyl urea Pretilachlor – Chloroacetanilide
Symptoms of Poisoning	Gastrointestinal: Nausea, vomiting (sometimes with blood), diarrhoea, abdominal pain. Neurological: Drowsiness, decreased level of consciousness, stupor, seizures, dizziness. Cardiovascular: Bradycardia (slow heart rate) or tachycardia (fast heart rate), hypotension (low blood pressure). Respiratory: Difficulty breathing, chest pain (tightness), coughing, shortness of breath. Other: Fever, excessive salivation, lacrimation (excessive tearing), pallor, sweating, muscle spasms, urinary incontinence.
Treatments including Antidote	There is no specific antidote for this poisoning. Treatment focuses on supportive care, managing symptoms, and preventing complications. If any.

8. Bispyribac sodium 2% + 2,4-D sodium salt 54.3% w/w SP

Active Ingredient	Bispyribac sodium 2% + 2,4-D sodium salt 54.3% w/w SP
Category	Combination product - Herbicide
Chemical Class	2,4-D Sodium-Chlorophenoxy Herbicide, Bispyribac sodium Pyrimidinyloxybenzoic acid herbicide
Symptoms of Poisoning	Bispyribac sodium is unlikely pose acute hazard. Toxicity due to 2,4-D may; Nausea, vomiting, abdominal pain, Confusion, ataxia, seizures, Musculoskeletal: Muscle rigidity, rhabdomyolysis, Renal: Hematuria, oliguria (myoglobinuria-related).
Treatments including Antidote	No Antidote; Treatment is comprehensive, supportive, and anticipatory. Alkaline Diuresis (for 2,4-D excretion enhancement): Sodium bicarbonate IV + IV fluids; Monitor urine pH (target: 7.5–8), potassium, and fluid status; Effective in moderate to severe 2, 4-D poisoning, Urine output monitoring: Goal >1.5–2 ml/kg/hr.

9. Bispyribac Sodium 0.25% + Penoxsulam 0.25% + Pyrazosulfuron Ethyl 0.20% GR

10. Bispyribac Sodium 9.5% + Penoxsulam 7.8% (w/v) SC

11. Bispyribac Sodium 20% + Pyrazosulfuron Ethyl 15% WDG

12. Bispyribac Sodium 38% + Chlorimuron ethyl 2.5% + Metsulfuron Methyl 2.5% (w/w)

Active Ingredients	1. Bispyribac Sodium 0.25% + Penoxsulam 0.25% + Pyrazosulfuron Ethyl 0.20% GR 2. Bispyribac Sodium 9.5% + Penoxsulam 7.8% w/v 3. Bispyribac Sodium 20% + Pyrazosulfuron Ethyl 15% 4. Bispyribac Sodium 38% + Chlorimuron ethyl 2.5% + Metsulfuron Methyl 2.5% (w/w)
Category	Post-emergence herbicide; Combination herbicide
Chemical Class	Bispyribac Sodium - Primidinyl carboxy herbicide; Penoxsulam - Triazolopyrimidine sulfonamide; Pyrazosulfuron Ethyl - Sulfonylurea; Chlorimuron ethyl - Sulfonylurea; Metsulfuron Methyl - Sulfonylurea

Symptoms of Poisoning	Nausea, vomiting, abdominal discomfort, diarrhea, Headache, dizziness (rare), rare allergic or irritant reactions, mild mucosal irritation if inhaled or exposed, **Systemic toxicity:** Very unlikely due to poor absorption and low acute toxicity.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

13. Bixlozone 50% + Metribuzin 10% WG

Active Ingredient	Bixlozone 50% + Metribuzin 10%
Category	Pre-emergence/post-emergence herbicide
Chemical Class	Bixlozone - Isoxazolidinone herbicide; Metribuzin - Triazinone herbicide
Symptoms of Poisoning	Nausea, vomiting, diarrhea, abdominal cramps, dizziness, headache. Drowsiness or agitation (in moderate to high doses), **Respiratory / Hematologic (from Metribuzin, rare), Methemoglobinemia** → Cyanosis, shortness of breath, fatigue, *(Suspect if pulse oximetry is low but patient appears not in distress);* Other: Eye/skin irritation on direct contact, Mild hepatotoxicity possible with large ingestion.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

14. Carfentrazone Ethyl 0.43% + Glyphosate 30.82% EW

Active Ingredient	Carfentrazone Ethyl 0.43% + Glyphosate 30.82% EW
Category	Non selective herbicide
Chemical Class	Carfentrazone Ethyl - Aryl triazolinone; Glyphosate - Organophosphonate (non-enzymatic) herbicide
Symptoms of Poisoning	**Glyphosate formulations** (especially with surfactants like POEA) are often responsible for systemic toxicity, not glyphosate alone. Nausea, vomiting, abdominal pain, diarrhea, Mouth and throat irritation, Foul or chemical taste. In Moderate to Severe Exposure (due to surfactants in glyphosate formulations): Respiratory distress (aspiration or pulmonary edema in rare cases), Hypotension, Renal impairment (in high doses). Altered mental status (due to acidosis or hypotension).

	In Severe Toxicity (rare, in large ingestion >100–200ml concentrated product): Metabolic acidosis, Hyperkalemia, Cardiovascular collapse, Multi-organ dysfunction, Possible death (rare but reported). Carfentrazone ethyl alone is unlikely to contribute significantly to systemic symptoms.
Treatments including Antidote	As Glyphosate is Organophosphonate (non-enzymatic) herbicide the poisoning require supportive and systematic treatment. No antidote.

15. Carfentrazone Ethyl 20% + Sulfosulfuron 25% WG

Active Ingredient	Carfentrazone Ethyl 20% + Sulfosulfuron 25%
Category	Combination Herbicide
Chemical Class	Carfentrazone-Ethyl-Aryl triazolinone; Sulfosulfuron-sulfonylurea
Symptoms of Poisoning	Low toxicity: Mild oral and gastrointestinal irritation, nausea, vomiting, abdominal pain, diarrhea, In rare cases: Headache, dizziness. High doses may cause hepatic enzyme elevation or methemoglobinemia.
Treatments including Antidote	In most cases, toxicity is mild and self-limiting. No Antidote. Treatment is comprehensive, supportive, and anticipatory.

16. Clodinafop Propargyl 15% + Metsulfuron Methyl 1% WP

Active Ingredient	Clodinafop Propargyl 15% + Metsulfuron Methyl 1%
Category	Combination Herbicide
Chemical Class	Clodinafop Propargyl - AOPP; Metsulfuron Methyl - Sulfonylurea
Symptoms of Poisoning	Relatively low toxicity. Nausea, vomiting, abdominal discomfort, diarrhea, headache, dizziness, fatigue, rarely tremors or confusion, cough, throat irritation (if inhaled), dyspnea (rare); Irritation of skin/eye, redness (if contacted with skin or eyes).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

17. Clodinafop Propargyl 12.25% + Oxyfluorfen 14.7% EC

Active Ingredient	Clodinafop-Propargyl 12.25% + Oxyfluorfen 14.7% EC
Category	Combination Herbicide
Chemical Class	Clodinafop - Propargyl - Aryloxyphenoxypropionate (AOPP); Oxyfluorfen - Diphenyl Ether
Symptoms of Poisoning	Nausea, vomiting, diarrhea, GI irritation, abdominal pain Headache, dizziness, Muscle weakness, tremors (rare). Convulsions and CNS depression (in high doses or solvent toxicity). Hepatotoxicity – ↑liver enzymes in some cases, Rare: Methemoglobinemia, hemolysis, mild CNS symptoms.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

18. Clomazone 20% + 2,4-D Ethyl Ester 30% EC

Active Ingredient	Clomazone 20%+2,4-D Ethyl Ester 30% EC
Category	Combination Herbicide
Chemical Class	Clomazone - Isoxazolidinone ; 2,4-D Ethyl Ester - Chlorophenoxy
Symptoms of Poisoning	Clomazon is has relatively low acute toxicity, but 2,4-D and the solvent can cause systemic toxicity and aspiration risk.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory, **Alkaline Diuresis** (for 2,4-D excretion enhancement): **Sodium bicarbonate IV + IV fluids.** Monitor **urine pH (target: 7.5–8),** potassium, and **fluid status.** Effective in moderate to severe 2,4-D poisoning; **Urine output monitoring:** Goal >1.5–2 ml/kg/hr

19. Clomazone 22.5% w/w + Metribuzin 21% w/w WP

Active Ingredient	Clomazone 22.5% w/w + Metribuzin 21% w/w WP
Category	Combination Herbicide
Chemical Class	Clomazone: Isoxazolidinone herbicide; Metribuzin: Triazinone herbicide
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, headache, dizziness. Eye and skin irritation. Mild respiratory tract irritation.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

20. Diuron 25.6% w/w + Glyphosate 14.4% w/w + Oxyfluorfen 11.5% w/w SC

Active Ingredient	Diuron 25.6% w/w + Glyphosate 14.4% w/w + Oxyfluorfen 11.5%
Category	Combination Herbicide
Chemical Class	Diuron - Substituted urea; Glyphosate - Organophosphonate (non-enzymatic; Oxyfluorfen - Diphenyl Ether
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, oral/throat burning; Elevated liver enzymes (especially due to Oxyfluorfen). Diuron and Glyphosate may cause acute kidney injury in large doses, Acidosis, electrolyte imbalance (hyperkalemia from glyphosate). Pulmonary edema (rare, severe glyphosate poisoning). Headache, dizziness, seizures (rare), Rare cases of methemoglobinemia or hemolysis at high doses due to Oxyfluorefen.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

21. Fenoxaprop-p-ethyl 7.77% w/w + Metribuzin 13.6% w/w EC

Active Ingredient	Fenoxaprop-p-ethyl 7.77% w/w + Metribuzin 13.6% w/w EC
Category	Herbicide
Chemical Class	Fenoxaprop-p-Ethyl – Aryloxyphenoxypropionate; Metribuzin: Triazinone herbicide
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, headache, dizziness. Eye and skin irritation. Mild respiratory tract irritation; Severe Poisoning (rare, high-dose ingestion) - CNS depression, Hypotension, Liver/kidney, dysfunction (due to Metribuzin), Metabolic acidosis (in very large doses).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

22. Fenoxaprop-p-ethyl 6% + Chlorimuron ethyl 0.9% + Imazethapyr 10% SC

Active Ingredient	Fenoxaprop-p-ethyl 6% + Chlorimuron ethyl 0.9% + Imazethapyr 10% SC
Category	Herbicide
Chemical Class	Fenoxaprop-p-Ethyl – Aryloxyphenoxypropionate; Chlorimuron Ethyl - Sulfonylurea; Imazethapyr - Imidazolinone
Symptoms of Poisoning	Nausea, Vomiting, Diarrhea, Abdominal pain, Headache, Dizziness, Fatigue, Weakness, Throat irritation, Cough, Dyspnea (if aspiration or inhalation occurs), Skin irritation or redness, Eye irritation or conjunctivitis upon contact, **Rare/Severe cases (high-dose or intentional).** CNS depression, Hypotension, Hepatorenal dysfunction (very rare and dose-dependent).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

23. Fenoxaprop-p-Ethyl 5% + Chlorimuron Ethyl 0.6% + Pretilachlor 50 % ME

Active Ingredient	Fenoxaprop-p-Ethyl 5% + Chlorimuron Ethyl 0.6% + Pretilachlor 50 % ME
Category	Combination Herbicide
Chemical Class	Fenoxaprop-p-Ethyl – Aryloxyphenoxypropionate; Chlorimuron Ethyl – Sulfonylurea; Pretilachlor – Chloroacetamide
Symptoms of Poisoning	Nausea, vomiting, abdominal cramps, diarrhea; dizziness, headache, weakness, drowsiness; Rare: confusion or tremors; Respiratory - Cough, difficulty breathing, irritation (if inhaled); Dermal/Eye - Skin redness, itching, or rash, Eye burning or conjunctivitis if splashed.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

24. Fluthiacet-methyl 2.5% + Quizalofop-ethyl 10% EC

25. Florpyrauxifen-benzyl 1.31% w/w + Penoxsulam 2.1% w/w OD

26. Florpyrauxifen-benzyl 2.13% w/w + Cyhalofop-butyl 10.64% w/w EC

Active Ingredients	1. Fluthiacet-methyl 2.5% + Quizalofop-ethyl 10% EC 2. Florpyrauxifen-benzyl 1.31% w/w + Penoxsulam 2.1% w/w OD 3. Florpyrauxifen-benzyl 2.13% w/w + Cyhalofop-butyl 10.64% w/w EC
Category	Combination Herbicide
Chemical Class	Fluthiacet-methyl - Thiadiazine, Quizalofop-ethyl - Aryloxyphenoxypropionate, Penoxsulam - Triazolopyrimidine sulfonamide, Cyhalofop-butyl - Aryloxyphenoxypropionate (FOP)
Symptoms of Poisoning	Nausea, Vomiting, Abdominal pain, Drowsiness, Headache, Skin and eye irritation, Respiratory discomfort (if inhaled), Skin irritation, rash, Eye irritation, burning, or redness. Severe Poisoning (High-dose or Intentional Ingestion): Central nervous system (CNS) depression, Hypotension (from solvent absorption), Liver/kidney stress markers may increase at high doses.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

27. Fluazifop-p-butyl 11.1% w/w + Fomesafen 11.1% w/w SL

Active Ingredient	Fluazifop-p-butyl 11.1% w/w + Fomesafen 11.1% w/w SL
Category	Combination Herbicide
Chemical Class	Fluazifop-p-butyl – Aryloxyphenoxypropionate; Fomesafen - Diphenyl ether
Symptoms of Poisoning	Nausea, Vomiting, Abdominal pain, diarrhea. **Skin contact-** Redness, irritation, possible dermatitis; **Inhalation -** Cough, throat irritation, dizziness, headache; **Eye contact** - Conjunctival redness, tearing, burning sensation; **Systemic (high dose)** - Fatigue, CNS depression (from solvents), possible hepatic or renal stress.

Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

28. Fomesafen 12 % + Quizalofop ethyl 3% w/w SC

29. Fomesafen 17.5% + Clodinafop-propargyl 12.5% w/w ME

30. Fomesafen 16.8% w/w + Propaquizafop 5.2% w/w ME

Active Ingredient	Fomesafen 12 % + Quizalofop ethyl 3% w/w Fomesafen 17.5% + Clodinafop-propargyl 12.5% w/w Fomesafen 16.8% w/w + Propaquizafop 5.2% w/w
Category	Combination Herbicide
Chemical Class	Fomesafen - Diphenyl ether Quizalofop ethyl - Aryloxyphenoxypropionate (FOP) Clodinafop-propargyl - Aryloxyphenoxypropionate (FOP) Propaquizafop 5.2% w/w ME - Aryloxyphenoxypropionate (FOP)
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, **Skin contact** - Redness, irritation, possible dermatitis; Inhalation - Cough, throat irritation, dizziness, headache; **Eye contact** - Conjunctival redness, tearing, burning sensation. **Systemic (high dose)** - Fatigue, CNS depression (from solvents), possible hepatic or renal stress, Liver enzyme elevation (Fomesafen), CNS depression (solvents), rare convulsions.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

31. Fomesafen 12.5% + Fenoxaprop-p-Ethyl 10% + Chlorimuron Ethyl 0.9% ME

Active Ingredient	Fomesafen 12.5% + Fenoxaprop-p-Ethyl 10% + Chlorimuron Ethyl 0.9%
Category	Combination Herbicide
Chemical Class	Fomesafen - Diphenyl ether Fenoxaprop-p-Ethyl - Aryloxyphenoxypropionate (FOPs) Chlorimuron Ethyl - Sulfonylurea
Symptoms of Poisoning	Irritation to skin, eyes, and respiratory tract,Gastrointestinal upset: nausea, vomiting, abdominal pain if ingested, Possible liver toxicity with large exposure (rare), Mild central nervous system symptoms: headache, dizziness, Potential allergic reactions.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

32. Glufosinate ammonium 14.3 % + Glyphosate (Isopropyl Ammonium) 18.04 % SL

Active Ingredient	Glufosinate ammonium 14.3 % + Glyphosate (Isopropyl Ammonium) 18.04 % SL
Category	Systemic non-selective herbicides
Chemical Class	Glufosinate ammonium - Phosphinic acid derivative Glyphosate (Isopropyl Ammonium) Organophosphonate (non-enzymatic)
Symptoms of Poisoning	This combination can be moderately to highly toxic, especially when surfactants or large quantities are ingested. Nausea, vomiting, abdominal pain, oral/esophageal burns. Headache, dizziness, confusion, seizures, coma (glufosinate effect), Respiratory depression, pulmonary edema, Hypotension, arrhythmias, shock, Oliguria, acute renal failure, Metabolic acidosis, hyperkalemia, elevated ammonia. Neurotoxicity from Glufosinate may appear delayed (6–48 hours), including seizures, apnea, or coma.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

33. Glufosinate ammonium 13.4% + Oxyfluorfen 4.8% w/w EW

Active Ingredient	Glufosinate ammonium 13.4% + Oxyfluorfen 4.8% w/w EW
Category	Combination Herbicide
Chemical Class	Glufosinate ammonium - Phosphinic acid derivative; Oxyfluorfen - Diphenyl ether
Symptoms of Poisoning	The toxicity of this combination is significant due to Glufosinate, while Oxyfluorfen is primarily an irritant. Nausea, vomiting, abdominal pain, diarrhea, Headache, confusion, dizziness, slurred speech, convulsions, coma (severe cases); Difficulty breathing, pulmonary edema (in severe glufosinate poisoning); Dermal Irritation, redness (mostly from Oxyfluorfen and solvent; rritation, tearing, redness in eye.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

34. Halosulfuron Methyl 5% + Atrazine 48% WG

Active Ingredient	Halosulfuron Methyl 5% + Atrazine 48%
Category	Combination Herbicide
Chemical Class	Halosulfuron Methyi- Sulfonylurea; Atrazine- Triazine
Symptoms of Poisoning	Atrazine is the main toxic component, while Halosulfuron-methyl has relatively low toxicity. Nausea, vomiting, abdominal cramps, diarrhea. Headache, dizziness, drowsiness, confusion. Ataxia (in high doses); Redness, tearing, burning sensation in eye. Coughing, throat irritation, dyspnea (inhalation of spray mist). Metabolic acidosis, hypotension, renal/hepatic dysfunction, rare cardiac arrhythmias.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

35. Halosulfuron methyl 6% + Metribuzin 50% WG

Active Ingredient	Halosulfuron methyl 6% + Metribuzin 50% WG
Category	Combination Herbicide
Chemical Class	Halosulfuron methyl – Sulfonylurea; Metribuzin - Triazinone
Symptoms of Poisoning	The toxicity of this combination is largely due to **Metribuzin,** while **Halosulfuron-methyl** has low acute toxicity. Nausea, vomiting, abdominal cramps, diarrhea. Headache, dizziness, drowsiness. Blurred vision, redness, tearing, burning sensation in eye. Skin Irritation, itching, redness. Coughing, throat irritation, dyspnea (inhalation of spray mist or dust); in mega exposure, Convulsions, hypotension, liver and kidney damage (mainly due to Metribuzin).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

36. Halauxifen-methyl 20.8% + Florasulam 20.0% w/w WG (with surfactant Polyglycol 26-2 N)

Active Ingredient	Halauxifen-methyl 20.8% + Florasulam 20.0% w/w WG (with surfactant Polyglycol 26-2 N)
Category	Combination Herbicide
Chemical Class	Halauxifen-methyl - Arylpicolinate (synthetic auxin); Florasulam - Riazolopyrimidine sulfonanilide; Polyglycol 26-2 N) - Triazolopyrimidine sulfonanilide
Symptoms of Poisoning	Nausea, vomiting, abdominal cramps, diarrhea. Headache, dizziness, drowsiness. Blurred vision, redness, tearing, burning sensation in eye. Skin Irritation, itching, redness, burning sensation. Coughing, throat irritation, dyspnea (inhalation of from surfactant fumes or dust). In high dose - Headache, drowsiness, liver enzyme changes (rare).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

37. Hexazinone 13.2% + Diuron 46.8 % WP

Active Ingredient	Hexazinone 13.2% + Diuron 46.8 % WP
Category	Combination Herbicide
Chemical Class	Hexazinone – Triazinone; Diuron- Substituted urea
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, drowsiness, headache. Skin and eye irritation, Respiratory discomfort (if inhaled). Rare: CNS depression, liver/kidney involvement (in large ingestion).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

38. Imazethapyr 35% + Imazamox 35% WG

Active Ingredient	Imazethapyr 35% + Imazamox 35% WG
Category	Combination Herbicide
Chemical Class	Hexazinone – Triazinone; Diuron – Substituted urea
Symptoms of Poisoning	Though this combination is considered to have low toxicity to humans accidental or excessive exposure (via ingestion, inhalation, or dermal contact) may cause mild to moderate poisoning symptoms. Symptoms may be: Dizziness or headache, General Malaise, fatigue or lethargy, Nausea or vomiting, abdominal pain, diarrhea. Mild skin irritation, redness, or rash. Eye irritation, including redness, watering, or a burning sensation. Mild respiratory irritation, coughing or sore throat.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

39. Metsulfuron Methyl 10% + Carfentrazone ethyl 40% DF

Active Ingredient	Metsulfuron Methyl 10% + Carfentrazone ethyl 40% DF
Category	Combination Herbicide
Chemical Class	Metsulfuron Methyl - Sulfonylurea herbicides Carfentrazone ethyl - PPO inhibitor
Symptoms of Poisoning	Mild to Moderate Exposure: Nausea, vomiting, abdominal pain, diarrhea, headache, dizziness, fatigue. Skin: Irritation, redness, rash (especially from Carfentrazone-ethyl), Eyes: Irritation, watering, redness. Respiratory (if inhaled): Cough, throat irritation, shortness of breath.

	Severe (rare, high-dose ingestion or prolonged exposure): CNS depression, Liver enzyme elevations (Carfentrazone - ethyl at high doses). Electrolyte imbalance from prolonged vomiting/diarrhea.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

40. Metsufuron methyl 10% + Chlorimuron ethyl 10% WP

Active Ingredient	Metsufuron methyl 10% + Chlorimuron ethyl 10% WP
Category	Combination Herbicide
Chemical Class	Sulfonyl Urea
Symptoms of Poisoning	This combination is considered to have low toxicity in humans, but accidental exposure or ingestion can cause mild to moderate poisoning symptoms. Symptoms are nausea and vomiting, abdominal pain or cramping, diarrhea. Mild skin irritation, redness or rash. Eye irritation, redness or watering, burning or itching sensation in severe cases. Irritation of the respiratory tract, coughing or sore throat, s of breath or wheezing in sensitive individuals. Dizziness or headache with prolonged exposure. Weakness or general fatigue. Allergic reactions in hypersensitive individuals.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

41. Mesotrione 2.27% w/w + Atrazine 22.7% w/w SC

Active Ingredient	Mesotrione 2.27% w/w + Atrazine 22.7% w/w
Category	Combination Herbicide
Chemical Class	Mesotrione - Triketone; Atrazine -Triazine
Symptoms of Poisoning	Nausea, vomiting, diarrhea, abdominal cramps, headache, dizziness, blurred vision, skin rash, irritation. Rarely: CNS depression, convulsions, cardiac arrhythmias, liver or kidney damage (high doses).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

42. Mesosulfuron methyl 3% + Iodosulfuron methyl sodium 0.6% WG

Active Ingredient	Mesosulfuron methyl 3% + Iodosulfuron methyl sodium 0.6% WG
Category	Combination Herbicide
Chemical Class	Mesosulfuron methyl 3% + Iodosulfuron methyl sodium - Both Sulfonylurea herbicides
Symptoms of Poisoning	**Mild to Moderate Symptoms:** Nausea, vomiting, abdominal discomfort, headache, dizziness. Skin or eye irritation, Fatigue or weakness, Mild respiratory discomfort (if inhaled). **Severe Symptoms (rare, with large ingestion):** CNS depression (drowsiness, confusion), Tremors or muscle twitching, Hypotension (low blood pressure), Liver/kidney function impairment (delayed, rare), Allergic reactions (rash, swelling).
Treatments including Antidote	**No Antidote;** Treatment is symptomatic and supportive.

43. Metribuzin 42% + Clodinafop propargyl 12% WG

Active Ingredient	Metribuzin 42% + Clodinafop propargyl 12%
Category	Herbicide
Chemical Class	Metribuzin - Triazinone Clodinafop propargyl - Aryloxyphenoxypropionate (FOP)
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, dizziness, weakness, headache. Blurred vision, skin rash, eye irritation. In high doses: methemoglobinemia, liver and kidney dysfunction (rare). CNS depression in large doses.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

44. Oxadiargyl 1% + Pretilachlor 6% GR

Active Ingredient	Oxadiargyl 1% + Pretilachlor 6%
Category	Combination Herbicide
Chemical Class	Oxadiargyl - Diphenyl ether derivative Pretilachlor - Chloroacetanilide
Symptoms of Poisoning	**Mild to Moderate Symptoms:** Nausea, vomiting, abdominal cramps, diarrhea, headache, dizziness, drowsiness. Irritation to skin and eyes. Mild respiratory symptoms (cough, throat irritation). **Severe Exposure (rare):** CNS depression, Muscle twitching, Hypotension or convulsions (in very high doses). Liver enzyme disturbances (particularly from Oxadiargyl), Methemoglobinemia (rare).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

45. Oxyfluorfen 2.5% + Isopropyl amine salt of Glyphosate 41% w/w SC

Active Ingredient	Oxyfluorfen 2.5% + Isopropyl amine salt of Glyphosate 41% w/w SC
Category	Combination Herbicide
Chemical Class	Oxyfluorfen - Diphenyl ether; Isopropyl amine salt of Glyphosate - Organophosphonate (not an OP insecticide)
Symptoms of Poisoning	Toxicity is often **due to surfactants** in the formulation, not glyphosate alone. Burning sensation in mouth and throat. Nausea, vomiting, abdominal pain, diarrhea. Excessive salivation, skin redness, dermatitis. Headache, dizziness, Hypotension (in severe cases). Respiratory distress (aspiration risk if vomiting occurs). Renal and hepatic dysfunction (in large ingestions). Pulmonary edema or multiorgan failure (rare but fatal in high-dose poisoning).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, supportive, and anticipatory.

46. Paraquat Dichloride 7.50% + Glyphosate 30% SC

Active Ingredient	Paraquat Dichloride 7.50% + Glyphosate 30% SC
Category	Combination Herbicide
Chemical Class	Glyphosate - Organophosphonate (non-enzymatic) herbicide; Paraquat - Bipyridyl Herbicides
Symptoms of Poisoning	This combination is **highly toxic** because of the **presence of Paraquat,** a **potent systemic poison** with no effective antidote. Glyphosate alone has low-to-moderate toxicity, but when combined with Paraquat, the toxicity is **significantly increased.** Burning pain in mouth, throat, chest. Vomiting, nausea, abdominal pain, oral ulcers, drooling, diarrhea (may be bloody). **Intermediate (12 - 48 hours): Oropharyngeal and GI ulceration, Acute renal injury, Hypotension,** metabolic acidosis. Respiratory distress (if early lung damage), **Late (48 hours – 7 days): Pulmonary fibrosis → hypoxia, Multiorgan failure, Death,** usually within 3–7 days.
Treatments including Antidote	**No Specific Antidote Exists.** Treatment is supportive and focussed on **preventing absorption, reducing oxidative stress, and supporting organ function. Avoid oxygen supplementation unless SpO_2 < 90%, Activated Charcoal: 1g/kg orally (preferred), Fuller's Earth (Bentonite Clay): Avoid gastric lavage** unless recent and life-threatening ingestion, Dialysis. Immunosuppression with high-dose steroids and cyclophosphamide has been suggested as treatment.

47. Paraquat Dichloride 24% + Oxyfluorfen 5% SC

Active Ingredient	Paraquat Dichloride 24% + Oxyfluorfen 5%
Category	Combination Herbicide
Chemical Class	Paraquat - Bipyridyl Herbicides; Oxyfluorfen - Diphenyl ether herbicide
Symptoms of Poisoning	**Paraquat is Dominant Toxicant.** Causes **oxidative stress and multiple organ failure,** especially lungs, kidneys, and liver. Within hours causes burning in mouth and throat. Nausea, vomiting, abdominal pain, diarrhea, oral ulcers, difficulty in swallowing. Renal dysfunction (oliguria, increased creatinine/ urea. Hepatic dysfunction, respiratory distress, cough, hypoxia, pulmonary edema, cyanosis, shock or arrhythmias. **After 3–7 days: Pulmonary fibrosis,** leading to respiratory failure. Death is common within a week without aggressive management. **Oxyfluorfen Toxicity (if significant exposure):** Hepatic enzyme elevation (AST, ALT), hematologic changes (methemoglobinemia in rare cases). Mild CNS symptoms in high-dose exposure (headache, dizziness).
Treatments including Antidote	**No Specific Antidote.** Treatment is supportive and focused on **preventing absorption, reducing oxidative stress, and supporting organ function. Avoid oxygen supplementation unless SpO_2 < 90%. Activated Charcoal:** 1g/kg orally (preferred), **Fuller's Earth (Bentonite Clay): Avoid gastric lavage** unless recent and life-threatening ingestion, Dialysis, Immunosuppression with high-dose steroids and cyclophosphamide has been suggested as treatment.

48. Pendimathalin 30% + Imazethapyr 2%

Active Ingredient	Pendimathalin 30% + Imazethapyr 2%
Category	Combination Herbicide
Chemical Class	Pendimethalin - Dinitroaniline; Imazethapyr - Imidazolinone
Symptoms of Poisoning	Both pendimethalin and Imazethapyr are considered to have low toxicity in humans, but acute exposure, particularly to high concentrations, can still result in mild to moderate symptoms. Potential poisoning symptoms: Nausea and vomiting, abdominal discomfort or cramping, diarrhea (mild to moderate); Irritation of the throat and nasal passages, coughing or sneezing. Difficulty breathing in cases of prolonged exposure. Dermatological Symptoms (Skin Contact): Redness, itching, or mild rash, dry or flaky skin. Eye redness and irritation, watery or burning eyes, blurred vision in severe cases.
Treatments including Antidote	No Specific antidote is known. Apply supportive and symptomatic therapy

49. Pendimethalin 35% + Metribuzin 3.5% w/w SE

Active Ingredient	Pendimethalin 35% + Metribuzin 3.5% w/w SE
Category	Combination Herbicide
Chemical Class	Pendimethalin – Dinitroaniline herbicide; Metribuzin –Triazinone
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, headache, dizziness. Eye and skin irritation. Mild respiratory tract irritation.
Treatments including Antidote	No Specific antidote is known. Apply supportive and symptomatic therapy.

50. Pendimethalin 24% + Oxyfluorfen 4.1% w/v ZE

Active Ingredient	Pendimethalin 24% + Oxyfluorfen 4.1% w/v ZE
Category	Combination Herbicide
Chemical Class	Pendimethalin - Dinitroaniline herbicide, Oxyfluorfen - Diphenyl ether
Symptoms of Poisoning	**Pendimethalin:** Nausea, vomiting, abdominal pain, headache, dizziness. Skin and eye irritation. Dyspnea (if inhaled in large amounts), CNS depression (rare). **Oxyfluorfen:** Methemoglobinemia (in rare cases). Liver dysfunction (with high exposure or chronic contact).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, supportive, and anticipatory. If Methemoglobinemia, treat with **Methylene blue 1–2 mg/kg IV over 5 mins.**

51. Pendimethalin 38.4% + Pyrazosulfuron ethyl 0.85% ZC

52. Diclosulam 0.9% + Pendimethalin 35% SE

Active Ingredient	Pendimethalin 38.4% + Pyrazosulfuron ethyl 0.85% Diclosulam 0.9% + Pendimethalin 35%
Category	Combination Herbicide
Chemical Class	Pendimethalin - Dinitroaniline; Pyrazosulfuron ethyl – Sulfonylurea; Diclosulam - Sulfonanilide
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, drowsiness, headache. Skin and eye irritation. Respiratory discomfort (if inhaled), Rare: CNS depression, liver/kidney involvement (in large ingestion).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, supportive, and anticipatory.

53. Penoxsulam 0.97 % w/w + Butachlor 38.8% w/w SE

Active Ingredient	Penoxsulam 0.97% w/w + Butachlor 38.8% w/w
Category	Combination Herbicide
Chemical Class	Penoxsulam - Triazolopyrimidine sulfonamide Butachlor - Chloroacetanilide
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea. Headache, dizziness, drowsiness, fatigue. Skin irritation, redness. Eye irritation or conjunctivitis. Coughing, throat irritation, breathlessness (rare). CNS depression, Hypotension, Hepatic or renal involvement (rare). Aspiration pneumonia (if vomiting occurs).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, supportive, and anticipatory.

54. Penoxsulam 1.02 % + Cyhalofop-butyl 5.1% OD

Active Ingredient	Penoxsulam 1.02 % + Cyhalofop-butyl 5.1%
Category	Combination Herbicide
Chemical Class	Penoxsulam - Triazolopyrimidine sulfonamide; Cyhalofop-butyl-Aryloxyphenoxypropionate (FOP)
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, drowsiness, headache. Skin and eye irritation. Respiratory discomfort (if inhaled). Severe or **Large-Dose Ingestion (Uncommon):** Central nervous system depression, Hypotension (from solvent or surfactant toxicity), Aspiration pneumonia (if vomiting occurs), Electrolyte disturbances, Hepatic or renal dysfunction (very rare).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, supportive, and anticipatory.

55. Penoxsulam 2% + Oxadiazon 21 % w/w SC

Active Ingredient	Penoxsulam 2% + Oxadiazon 21 % w/w SC
Category	Combination Herbicide
Chemical Class	Penoxsulam - Triazolopyrimidine sulfonamide Oxadiazon- Oxadiazole derivative
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, drowsiness, headache. Skin and eye irritation. Respiratory discomfort (if inhaled), Skin irritation, rash. Eye irritation, burning, or redness; **Severe Poisoning (High-dose or Intentional Ingestion):** Central nervous system (CNS) depression, Hypotension (from solvent absorption), Hepatic enzyme elevation (from Oxadiazon, rare), Metabolic acidosis (if significant solvent toxicity), Aspiration pneumonia (if vomiting occurs).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

56. Penoxsulam 1% + Pendimethalin 24% w/w SE

Active Ingredient	Penoxsulam 1% + Pendimethalin 24% w/w
Category	Combination Herbicide
Chemical Class	Penoxsulam – Triazolopyrimidine sulfonamide Pendimethalin – Dinitroaniline
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, drowsiness, headache. Skin and eye irritation. Respiratory discomfort (if inhaled). Rare: CNS depression, liver/kidney involvement (in large ingestion).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

57. Pretilachlor 6% + Pyrazosulfuron Ethyl 0.15% (H)
58. Pretilachlor 6.0% + Pyrazosulfuron Ethyl 0.15% GR
59. Pretilachlor 30.0% + Pyrazosulfuron Ethyl 0.75% WG

Active Ingredient	1. Pretilachlor 6% + Pyrazosulfuron Ethyl 0.15% (H) 2. Pretilachlor 6.0% + Pyrazosulfuron Ethyl 0.15% GR 3. Pretilachlor 30.0% + Pyrazosulfuron Ethyl 0.75% WG
Category	Combination Herbicide
Chemical Class	Pretilachlor - Chloroacetanilide Pyrazosulfuron Ethyl - Sulfonylurea
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, headache, dizziness. Skin and eye irritation, In large exposures: CNS depression, liver or kidney effects (rare).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

60. Pretilachlor 27.4% w/w + Florpyrauxifen-benzyl 0.91% w/w EC

Active Ingredient	Pretilachlor 27.4% w/w + Florpyrauxifen-benzyl 0.91% w/w EC
Category	Combination Herbicide
Chemical Class	Pretilachlor - Chloroacetanilide Florpyrauxifen - Arylpicolinate (synthetic auxin)
Symptoms of Poisoning	Nausea, vomiting, abdominal cramps, dizziness, headache, weakness, skin rash, redness, burning sensation in eyes. Systemic (high exposure): CNS depression, liver/kidney stress (rare).
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

61. Propaquizafop 2.5% + Imazethapyr 3.75% w/w ME

Active Ingredient	Propaquizafop 2.5% + Imazethapyr 3.75% w/w ME
Category	Combination Herbicide
Chemical Class	Propaquizafop -Aryloxyphenoxypropionate (AOPP) Imazethapyr - Imidazolinone group (ALS inhibitor)
Symptoms of Poisoning	Usally low in humans; both compounds are of **moderate to low toxicity.** Symptoms are more likely due to **solvents/surfactants** in the formulation rather than the active ingredients. Nausea, vomiting, abdominal cramps, dizziness, headache, weakness, skin rash, redness, burning sensation in eyes. Mild irritation of mucous membranes and Shortness of breath.
Treatments including Antidote	**No Antidote;** Treatment is comprehensive, symptomatic, supportive, and anticipatory

62. Propaquizafop 5% + Oxyfluorfen 12% w/w EC

Active Ingredient	Propaquizafop 5% + Oxyfluorfen 12% w/w EC
Category	Combination Herbicide
Chemical Class	Propaquizafop - Aryloxyphenoxypropionate (AOPP) Oxyfluorfen - Diphenyl ether
Symptoms of Poisoning	Headache, dizziness, drowsiness (from solvent exposure). Cough, chest discomfort if inhaled, throat or nasal irritation. Nausea, vomiting, abdominal cramps, diarrhea (mainly due to Oxyfluorfen or surfactant solvents). Skin irritation, redness, itching (both ingredients, especially EC formulation), Eye irritation, redness, tearing. Oxyfluorfen may cause hepatic enzyme changes in large doses (animal study).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

63. Pyriftalid 31.0% w/w + Bensulfuron methyl 15.7% w/w SC

Active Ingredient	Pyriftalid 31.0% w/w + Bensulfuron methyl 15.7% w/w SC
Category	Combination Herbicide
Chemical Class	Pyriftalid - Arylpicolinate Bensulfuron methyl - Sulfonylurea
Symptoms of Poisoning	Headache, dizziness, fatigue, cough, chest discomfort if inhaled, throat or nasal irritation, nausea, vomiting, abdominal cramps, diarrhea, skin irritation, redness, itching, eye redness, tearing, burning sensation.
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

64. Pyrithiobac Sodium 3.1 % w /w + Pendimethalin 34.0 % w/w ZC
65. Pyrithiobac Sodium 6% w/w + Quizalofop-ethyl 4% w/w EC

Active Ingredient	1. Pyrithiobac Sodium 3.1 % w /w + Pendimethalin 34.0 % w/w 2. Pyrithiobac Sodium 6% w/w + Quizalofop-ethyl 4% w/w
Category	Combination Herbicide
Chemical Class	Pyrithiobac Sodium - Pyrimidinyl oxybenzoate Pendimethalin - Dinitroaniline Quizalofop-ethyl - Aryloxyphenoxypropionate (AOPP)
Symptoms of Poisoning	Nausea, vomiting, abdominal cramps, diarrhea, headache, dizziness, fatigue. Skin irritation or rash. Eye redness, watering, burning sensation. Mild irritation of nose/throat. Coughing or shortness of breath in high exposures.
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory

66. Pyrithiobac Sodium 4.5 w/w % + Glyphosate 60% w/w SG
67. Indaziflam 1.65% w/w + Glyphosate Isopropyl Ammonium 44.63% w/w SC

Active Ingredient	Pyrithiobac Sodium 4.5 w/w % + Glyphosate 60% w/w SG Indaziflam 1.65% w/w + Glyphosate Isopropyl Ammonium 44.63% w/w SC
Category	Combination Herbicide
Chemical Class	Pyrithiobac Sodium - Pyrimidinyl oxybenzoate (ALS inhibitor) Glyphosate - Organophosphonate (non-enzymatic) herbicide Indaziflam - Alkylazine class herbicide
Symptoms of Poisoning	Nausea, vomiting, abdominal pain, diarrhea, oral ulcers, esophageal or gastric erosion, Hypotension, tachycardia, arrhythmias (especially due to acidosis or hyperkalemia), Oliguria, acute kidney injury, Pulmonary edema (rare but fatal), respiratory distress, Drowsiness, confusion (in severe poisoning); Metabolic acidosis, hyperkalemia.
Treatments including Antidote	No Antidote; Treatment is comprehensive, symptomatic, supportive, and anticipatory

68. Quizalofop ethyl 4% + Oxyfluorfen 6% EC
69. Quizalofop ethyl 7.5% + Imazethapyr 15% w/w EC

Active Ingredient	Quizalofop ethyl 4% + Oxyfluorfen 6% EC Quizalofop ethyl 7.5% + Imazethapyr 15% w/w EC
Category	Combination Herbicide
Chemical Class	Quizalofop ethyl - Aryloxyphenoxypropionate (AOPP) Oxyfluorfen - Diphenyl ether; Imazethapyr- Imidazolinone
Symptoms of Poisoning	Nausea, vomiting, abdominal cramps, diarrhea, headache, dizziness, fatigue, Skin irritation or rash (especially from Oxyfluorfen and solvents). Eye redness, watering, burning sensation. Mild irritation of nose/throat. Coughing or shortness of breath in high exposures.

Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

70. Sodium Acifluorfen 16.5% + Clodinafop Propargyl 8% EC

Active Ingredient	Sodium Acifluorfen 16.5% + Clodinafop Propargyl 8% EC
Category	Combination Herbicide
Chemical Class	Sodium Acifluorfen - Diphenyl ether Clodinafop Propargyl - Aryloxyphenoxypropionate (FOP)
Symptoms of Poisoning	Skin and eye irritation, abdominal pain, vomiting, nausea, diarrhea, headache, dizziness. Potential for liver toxicity with chronic exposure, CNS effects: headache, fatigue, dizziness, Respiratory irritation (if inhaled), In rare cases, tremors or convulsions (high dose exposure).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

71. Sulfentrazone 28% + Clomazone 30% WP

Active Ingredient	Sulfentrazone 28% + Clomazone 30% WP
Category	Combination Herbicide
Chemical Class	Sulfentrazone - Triazolinone herbicide Clomazone – Isoxazolidinon
Symptoms of Poisoning	Mild to moderate toxicity to human. Skin or eye irritation, headache, dizziness, gastrointestinal distress (nausea, vomiting, diarrhea), Liver toxicity on chronic exposure (rare), Respiratory tract irritation (on inhalation), CNS effects: headache, dizziness, fatigue.
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory

72. Sulfosulfuran 75% + Metsulfuron Methyl 5% WG

Active Ingredient	Sulfosulfuran 75% + Metsulfuron Methyl 5% WG
Category	Combination Herbicide
Chemical Class	Both are Sulfonylurea group
Symptoms of Poisoning	Low toxicity to humans. Mild skin or eye irritation, headache, dizziness, nausea, vomiting, abdominal discomfort, diarrhea, Rarely, allergic reactions or rash.
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory

73.Tembotrione 9% + Atrazine 45% WG

Active Ingredient	Tembotrione 9% + Atrazine 45% WG
Category	Combination Herbicide
Chemical Class	Tembotrione- Triketone; Atrazine - Triazine
Symptoms of Poisoning	Tembotrione is of low to moderate acute toxicity, whereas Atrazine is of moderately toxicity, more significant of human toxicity than Tembotrione. Symptoms may include: Eye and skin irritation, nausea, vomiting, abdominal pain, diarrhea, headache, fatigue (rare), weakness. High doses of atrazine may affect liver, kidneys, and CNS.
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory

74. Topramezone 10 g/l + Atrazine 300 g/l SC

Active Ingredient	Topramezone 10 g/L + Atrazine 300 g/L
Category	Combination Herbicide
Chemical Class	Topramezone – Pyrazolone; Atrazine – Triazine
Symptoms of Poisoning	Topramezone is of low to moderate toxicity whereas Atrazine is of Moderately toxic, more significant human toxicity than Topramezone. Symptoms may include: Eye and skin irritation, nausea, vomiting, abdominal pain, diarrhea, headache, dizziness, incoordination or fatigue (rare), weakness or confusion. *High doses of atrazine may affect liver, kidneys, and CNS.*
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

75. Triafamone 20% + Ethoxysulfuron l0% WG

Active Ingredient	Triafamone 20% + Ethoxysulfuron l0% WG
Category	Combination Herbicide
Chemical Class	Triafamone - Isoxazole; Ethoxysulfuron - Sulfonylurea
Symptoms of Poisoning	**Triafamone** is of Low acute oral and dermal toxicity, whereas **Ethoxysulfuron** is of Low toxicity profile. **Possible symptoms:** Mild eye/skin irritation, headache, dizziness, nausea, vomiting, diarrhea, (if ingested in significant amount).
Treatments including Antidote	**No Antidote.** Treatment is comprehensive, symptomatic, supportive, and anticipatory.

Insecticide Combination Products

1. Buprofezin 0.72% + Deltamethrin 5.625% (w/w) EC

Active Ingredient	Buprofezin 0.72% + Deltamethrin 5.625% (w/w) EC
Category	Insecticides
Chemical Class	Combination of Buprofezin (insect growth regulator) and Deltamethrin (Synthetic pyrethroid)
Symptoms of Poisoning	Buprofezin is considered to have low toxicity to humans. Its combination with Deltamethrin may give some poisoning symptoms when exposed. Symptoms are of general nature like headache, dizziness, fatigue or weakness. Irritation of the nose or throat, coughing, difficulty breathing. Gastrointestinal Symptoms (from ingestion) like nausea, vomiting, abdominal discomfort. Dermal Symptoms (from skin contact) like Mild skin irritation, Redness or itching, a specific paresthesia /irritation, often described as "cold burn". This may appear immediately or shortly after contact to the substance, may last up to 24 (rarely to 48) hours, and often is reported to be worsened by warmth (e.g. showering). This "cold burn" is due to a stimulation of free nerve endings, and is dependent on concentration, not on dose. Eye Symptoms (from eye contact) like eye irritation, redness or tearing. In cases of contact to this product. In hypersensitive individuals an asthma-like unspecific response can be triggered. In extreme cases there could be convulsion.
Treatments including Antidote	There is no specific antidote, treatment is thus can only be symptomatic and supportive. The skin application of oils or lotions containing vitamin E may be considered. The skin irritation may be painful and require the application of analgesics. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. If convulsion, anticonvulsant like diazepam could be given.

2. Beta-Cyfluthrin + Imidacloprid 300 OD

Active Ingredient	Beta-Cyfluthrin + Imidacloprid 300 OD
Category	Insecticides
Chemical Class	Combination of alfa-cyano pyrethroid neonicotinoid insecticide
Symptoms of Poisoning	In cases of contact to this product the first sign of exposure is a specific paresthesia/irritation, often described as "cold burn". This may appear immediately or shortly after contact to the substance, may last up to 24 (rarely to 48) hours, and often is reported to be worsened by warmth (e.g. showering). This "cold burn" is due to a stimulation of free nerve endings, and is dependent on concentration, not on dose. The irritation can occur both on the skin and on the mucous membranes of the airways. In hypersensitive individuals an asthma-like unspecific response can be triggered. Sometimes toxicity strongly depends on the “solvent” used. Because of the presence of imidachlorprid symptoms may be added with nausea, vomiting, diarrhea, abdominal cramp, loss of appetite, headache, dizziness, fatigue, tremor, seizure, confusion, hypotension, Bradycardia/Tachycardia etc,
Treatments including Antidote	There is no specific antidote, treatment is thus can only be symptomatic and supportive. Gastric lavage should be considered in cases of significant ingestions within the first 2 hour(s); However, the application of activated charcoal and sodium sulphate is always advisable in significant ingestions. The skin application of oils or lotions containing vitamin E may be considered. The skin irritation may be painful and require the application of analgetics. Anaesthetic eyedrops may be required in case of eye contamination after flushing. In cases of severe ingestions cardiac and respiratory function should be monitored. In case of convulsions diazepam is the anticonvulsant of choice. Thus seizure management should follow standard practice using benzodiazepines (with oxygen and airway protection), if insufficiently effective followed by Phenobarbital infusion as required for status epilepticus. A suggested regimen would be: Start with 10 to 30 mg diazepam by intravenous injection according to body weight, for children pro rata. This dose is to be repeated every 10 to 30 minutes according to the patient's response. If there is allergic manifestation antihistaminics may be administered.

3. Chlorpyrifos 50% + Cypermethrin 5% EC

Active Ingredient	Chlopyrifos 50% + Cypermethrin 5% EC
Category	Insecticides
Chemical Class	Combination of Organophosphate and Synthetic Pyethroid
Symptoms of Poisoning	Since a organophosphate is in higher strength, the signs and symptoms shall be predominantly OP centric. Toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise). In minor cases there may be some allergic symptoms.
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure. If allergic symptoms are observed, antihistaminics may be used.

4. Deltamethrin 1% + Triazophos 35% EC

Active Ingredient	Deltamethrin 1% + Triazophos 35% EC
Category	Insecticides
Chemical Class	Combination of Organophosphate and Synthetic Pyethroid
Symptoms of Poisoning	Since a organophosphate (Triazophos) is in higher strength, the signs and symptoms shall be predominantly OP centric. Toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Symptoms: Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, Vomiting, Bradycardia, Hypotension, Constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations. Weakness or paralysis (including respiratory muscles), Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise). In minor cases there may be some allergic symptoms.
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation. (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure. If allergic symptoms are observed, antihistaminics may be used.

5. Ethiprole + Imidacloprid 80 WG

Active Ingredient	Ethiprole + Imidacloprid
Category	Insecticides
Chemical Class	Phenylpyrazole + Neonicotinoid
Symptoms of Poisoning	The combination of these agents may potentiate neurotoxic effects because of their overlapping impact on excitatory pathways in the nervous system. Symptoms: Neurological:- Tremors, seizures (potentially refractory due to synergistic effects). Headache, dizziness, Confusion or agitation. Gastrointestinal:- Severe nausea and vomiting, abdominal cramps, diarrhea. Cardiovascular: Significant tachycardia, hypotension, which may progress to shock in severe cases. Respiratory:- Dyspnea, risk of respiratory failure due to CNS depression in severe poisoning.
Treatments including Antidote	Ethiprole and Imidacloprid are insecticides with different mechanisms of action. Poisoning with these substances requires symptomatic management and supportive care as there are no specific antidotes available. Need for decontamination of skin and eye. Wash the affected area thoroughly with soap and water. In case of ingestion do not induce vomiting. Activated charcoal may be administered to limit absorption if ingestion occurred recently and the patient is conscious. Monitor vital signs and provide supportive care. For, toxicity is related to nicotinic acetylcholine receptor stimulation. Treatment involves supportive care for cholinergic symptoms (e.g., nausea, vomiting, dizziness) due to Imidacloprid toxicity. Atropine may be used if there are excessive muscarinic symptoms, though this is rare. Hospitalization may be necessary for patients with significant symptoms such as severe neurological or respiratory distress. There is no specific antidote.

6. Indoxacarb + Acatamiprid

Active Ingredient	Indoxacarb + Acetamipirid
Category	Insecticides
Chemical Class	Indoxacarb - Oxadiazines; Acetamipirid - Neonicotinoid
Symptoms of Poisoning	Combined Effects of Indoxacarb and Imidacloprid. Exposure may exacerbate symptoms due to their additive effects on the nervous system. Key concerns include: Enhanced Neurotoxicity, Increased risk of tremors, seizures, and respiratory depression. Greater Gastrointestinal Distress: Amplified nausea, vomiting, and abdominal pain. Potential Respiratory Compromise: Synergistic effects could lead to respiratory distress or failure in severe cases.
Treatments including Antidote	There is no specific antidote. Symptomatic and Supportive Treatment: Administer oxygen for respiratory distress. Treat seizures with anticonvulsants (e.g., benzodiazepines) as per medical advice. Hydrate the patient to support kidney and liver function. Gastric lavage or activated charcoal may be considered in cases of significant ingestion, within the appropriate time frame.

7. Novaluron 5.25% + Indoxacarb 4.5% w/w SC

Active Ingredient	Novaluron 5.25% + Indoxacarb 4.5%
Category	Insecticides
Chemical Class	Benzoylurea & Oxadiazine
Symptoms of Poisoning	The combination of Novaluron and Indoxacarb is having relatively low toxicity to humans but may cause poisoning symptoms if there is significant exposure. Symptoms of Poisoning: Low systemic toxicity; symptoms are generally mild unless exposure is extensive. Nausea, vomiting, abdominal discomfort. Skin or eye irritation if contacted. Neurological Effects: Dizziness, headache, weakness, seizures in severe cases. Respiratory Effects: Difficulty breathing. Skin and Eye Irritation: Redness, Burning sensation.
Treatments including Antidote	There is no specific antidote for Novaluron or Indoxacarb poisoning. Treatment is largely symptomatic and supportive.

8. Profenofos 40% + Cypermethrin 4% EC

Active Ingredient	Profenofos 40% + Cypermethrin 4% EC
Category	Insecticides
Chemical Class	Combination of Organophosphate and Synthetic Pyrethroid
Symptoms of Poisoning	Since a organophosphate (Profenofos) is in higher strength, the signs and symptoms shall be predominantly OP centric. Toxicity primarily affects the cholinergic nervous system by inhibiting acetylcholinesterase, leading to an accumulation of acetylcholine at synapses. Symptoms can be categorized into muscarinic, nicotinic, and central nervous system (CNS) effects. Muscarinic Effects:- Increased salivation, Lacrimation (tearing), Urination, Diarrhea, Gastrointestinal cramping, Vomiting, Bradycardia, Hypotension, constricted pupils, Bronchospasm and increased bronchial secretions. Nicotinic Effects:- Muscle twitching and fasciculations, weakness or paralysis (including respiratory muscles). Tachycardia, Hypertension. CNS Effects:- Anxiety, Restlessness, Confusion, Seizures, Coma in severe cases. Other signs may be Sweating, Cyanosis (in severe cases due to respiratory compromise). In minor cases there may be some allergic symptoms.
Treatments including Antidote	Management focuses on stabilizing the patient, decontaminating the body, and administering antidotes. Early intervention is critical. Emergency Stabilization:- Airway, Breathing, Circulation (ABC): Ensure a patent airway. Provide supplemental oxygen if needed. Intubate if respiratory failure occurs. Seizure Management:- Administer benzodiazepines (e.g., diazepam or lorazepam) for seizures. **Antidotes:** Atropine: Administer atropine to counteract muscarinic effects. Start with 1–2 mg IV in adults (0.05 mg/kg in children) and repeat every 5–15 minutes until bronchial secretions decrease and breathing improves. Pralidoxime (2-PAM):- Use to reactivate acetylcholinesterase, particularly in nicotinic symptoms. Dose: 1–2 g IV in adults (20–50 mg/kg in children) over 30 minutes, then a continuous infusion or repeat as needed. Other Supportive Care:- Respiratory Support: Fluids and Electrolytes balance Monitoring: Regularly assess vital signs, oxygenation, and cholinesterase levels if available. Mechanical ventilation may be required for respiratory failure. If allergic symptoms are observed, antihistaminics may be used.

Catagories of Warning Symbols

RED (Extremely toxic)

"Keep Out of the reach of children if swallowed or if symptoms of poisoning occur, call physician immediately"

CATEGORY	LD_{50}(Oral) (mg/kg)	LD_{50}(Dermal) (mg/kg)
1	1 to 50	1 to 200

YELLOW (Highly toxic)

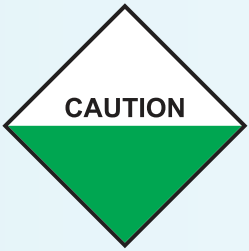
"Keep Out of the reach of children"

CATEGORY	LD_{50}(Oral) (mg/kg)	LD_{50}(Dermal) (mg/kg)
2	51 to 500	201 to 2000

BLUE (Moderately toxic)

"Keep Out of the reach of children"

CATEGORY	LD_{50}(Oral) (mg/kg)	LD_{50}(Dermal) (mg/kg)
3	501 to 5,000	2001 to 20,000



GREEN (Slightly toxic)

NIL

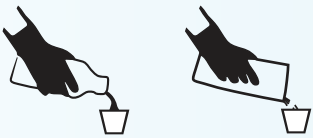
CATEGORY	LD_{50}(Oral) (mg/kg)	LD_{50}(Dermal) (mg/kg)
4	More than 5,000	More than 20,000

Pictograms on the product label and direction of use

Storage

Warning

Activity



Advice

Do not use for human or animal consumption

Keep out of reach of children, livestock and wildlife

Wear suitable protective equipment

Wash hands after use

Do not contaminate surface water or ditches

Minimize dust generated at drilling

Precautions to prevent pesticide accidents

Everyone can improve their methods for safe handling of pesticides. Experienced pesticide applicators, unfortunately, may become so familiar with the equipment and materials used that they often become careless or take shortcuts.

The following checklist of questions is drawn from data showing the common causes of pesticide accidents. Check it against your pesticide handling practices and see how many accidents are waiting to happen to you. Just one "No" may be the one that gets you in trouble!

Store Your Pesticides Safely

- Store pesticides (CPPs) in a securely locked place away from children, food, humans, and animals.
- Keep storage boxes or rooms securely locked and ideally separated from other buildings, especially residential buildings.
- Check periodically for leaking containers.

Wear Appropriate Protective Clothing and Personal Protective Equipment (PPE)

- **Check your label to understand which PPE you need to use when mixing and loading and when applying Crop Protection Products.**
- **Have dedicated PPE, including long-sleeved shirts and trousers, exclusively for use when handling CPPs, and make sure it is clean and in good condition.**

Ensure CPPs are in their original, undamaged containers with clear, legible label

- **Do not decant CPPs. They must always remain in their original, labeled containers to avoid mistaken use, especially by vulnerable individuals and children, which in some cases can lead to fatalities.**
- **Never accept or ask for products to be decanted from their original containers.**

Avoid spills and splashes of CPPs

- Wear suitable protective clothing, including impervious gloves and boots.
- Wash any spills or splashes from skin and eyes immediately. Seek medical advice if poisoning occurs.
- Follow the label instructions and also refer to the safety data sheet for instructions on how to handle a spill, as specific instructions may apply to individual CPPs.
- Always clean up liquid or solid spills immediately and dispose of the leftovers according to local regulations.
- Maintain application equipment in good working condition. Check sprayers regularly for leaks and ensure that nozzles work properly.

Dispose of Used Empty Crop Protection Containers Properly

- Empty pesticide packaging should be triple rinsed, punctured, and disposed off according to local laws and regulations. Do not reuse empty containers.

- Never dispose of pesticide containers, waste or contaminated material carelessly, especially near open water or residential areas.

Exercise Caution During Application of the Product

- Check the weather conditions, as these may affect the efficacy and safety of the treatment.
- Always spray in the same direction as the wind so that any spray drift is away from the operator.
- Plan your pesticide application so that it will have little or no effect on bees, birds, fish, and other wildlife.

Appendix

Notes

Notes

Notes

Notes

CropLife INDIA

CropLife India

702, 7th Floor, Bhikaji Cama Bhawan,
Bhikaji Cama Place, New Delhi-110066
Tel: 011-26186296, 011-26196681
Web: www.croplifeindia.org