Pesticide Safety

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Pesticides are chemicals used to destroy, prevent or control pests. Pests include weeds, diseases, and insects. They also include chemicals used to regulate plant growth or remove or coat leaves.

“Pesticide” can mean a fungicide, herbicide, insecticide, rodenticide, etc.
Inorganic Pesticides

- Made from minerals - copper, boron, lead, sulfur, tin, zinc.

Synthetic Organic Pesticides

- Man-made pesticides
- 2,4-D, atrazine, malathion
Living Micro-Organisms

- Viruses, bacteria, and fungi
- *Bacillus thuringiensis* (B.t), Dagger

Plant Derived Organic Pesticides

- Made from plants or plant parts
- Pyrethrins, rotenone
Pesticide Labels
Types of Formulations

- Emulsifiable Concentrates (EC)
- Solutions (S)
- Flowables (F)
- Wettable Powders (WP)
- Microencapsulated (M)
- Dry Flowables (DF)
- Granular (G)
Label Information

Trade Name

Active Ingredients

Inert Ingredients

**Herbicide**

**Active Ingredients:**
- Dimethylamine salt of dicamba (3,6-dichlor-o-anisic acid) 48.2%
- Dimethylamine salts of related acids 12.0%

**Inert Ingredients:**

**TOTAL** 39.8%

*This product contains 40.0% 3,6-dichlor-o-anisic acid (dicamba) or 4 pounds per gallon.*
A WEED AND GRASS KILLER – HARVEST AID CHEMICAL
Keep Out of Reach of Children
DANGER
POISON
DO NOT USE OR STORE IN OR AROUND THE HOME.
ONE SWALLOW CAN KILL!
SYMPTOMS ARE PROLONGED AND PAINFUL. ONSET OF SYMPTOMS
MAY BE DELAYED FOR UP TO 3 DAYS AFTER SWALLOWING.

PELIGRO
PRECAUCION AL USUARIO:
Si usted no lee inglés, no use este producto hasta que la etiqueta le
haya sido explicada ampliamente.
DO NOT REMOVE CONTENTS EXCEPT FOR IMMEDIATE USE.
NEVER PUT INTO FOOD, DRINK OR OTHER CONTAINERS.
Can Kill If Swallowed. May Be Harmful or Fatal if Absorbed Through Skin or
Signal Words

Keep out of reach of children.
CAUTION
(See side panel for Precautionary Statements.)
Read the Label to Determine:

- Appropriate safety measures.
- Where the pesticide can be used.
- When to apply the pesticide.
- How to apply the pesticide.
- If there are any restrictions for use of the pesticide.
Risk = Toxicity \times Exposure
How Pesticides Enter the Body

- Skin (includes eyes)
- Breathing
- Swallowing
Skin Absorption Rates are Different for Different Parts of the Body

- Forearm - 1.0
- Forehead - 4.2
- Groin - 11.8

Any area having thin skin and a relatively large blood supply will absorb pesticides rapidly (underarms, tops of feet, etc.).
This exposure can be reduced by 99% simply by wearing chemical resistant gloves and a long-sleeve shirt.

Note: The minimum amount of protective gear now specified on labels consists of: waterproof gloves, long-sleeve shirt, long pants, shoes and socks. Check the label to see if additional PPE is required!
Personal Protective Equipment (PPE): Gloves

Waterproof or chemical resistant gloves. Never wear leather!

Natural Rubber
PPE: Boots

Choose knee-high rubber or synthetic boots without holes. Wear cuff on outside of boot. Never wear leather.
PPE: Respirators

- Dust/Mist
- Reduces exposure to various dusts and mists.
Oral Exposure - Swallowing

- Can result in serious poisoning.
- Children account for 50% of accidental poisonings.
- Usually due to carelessness such as removing pesticide from its original container.
Respiratory Exposure - Breathing

- Lungs absorb pesticides rapidly.
- Use the proper respirator as directed by the label.

Eye Exposure

- Eye tissues are very absorbent
- Use eye protection around sprays and dusts or when specified on the label.
Fate of Pesticides in the Body

- **Metabolism** - broken down or metabolized, usually by the liver.
- **Elimination** - by urine, sweat, feces, or exhalation.
- **Accumulation** - stored in body, usually in fat cells.
Toxicity

- Acute - Immediate effects of a single short term exposure to a pesticide.
- Chronic - Delayed effects of repeated exposure over a long period.
Symptoms of Pesticide Poisoning

- Organophosphates - Headache, nausea, dizziness, muscle twitching, anxiety, cramps, sweating, diarrhea, constricted pupils.
- Carbamates - Similar to OP but it takes more exposure.
- Pyrethroids - stinging, burning, itching of skin.
QUESTIONS?