

# Pesticide Safety and Women's Health



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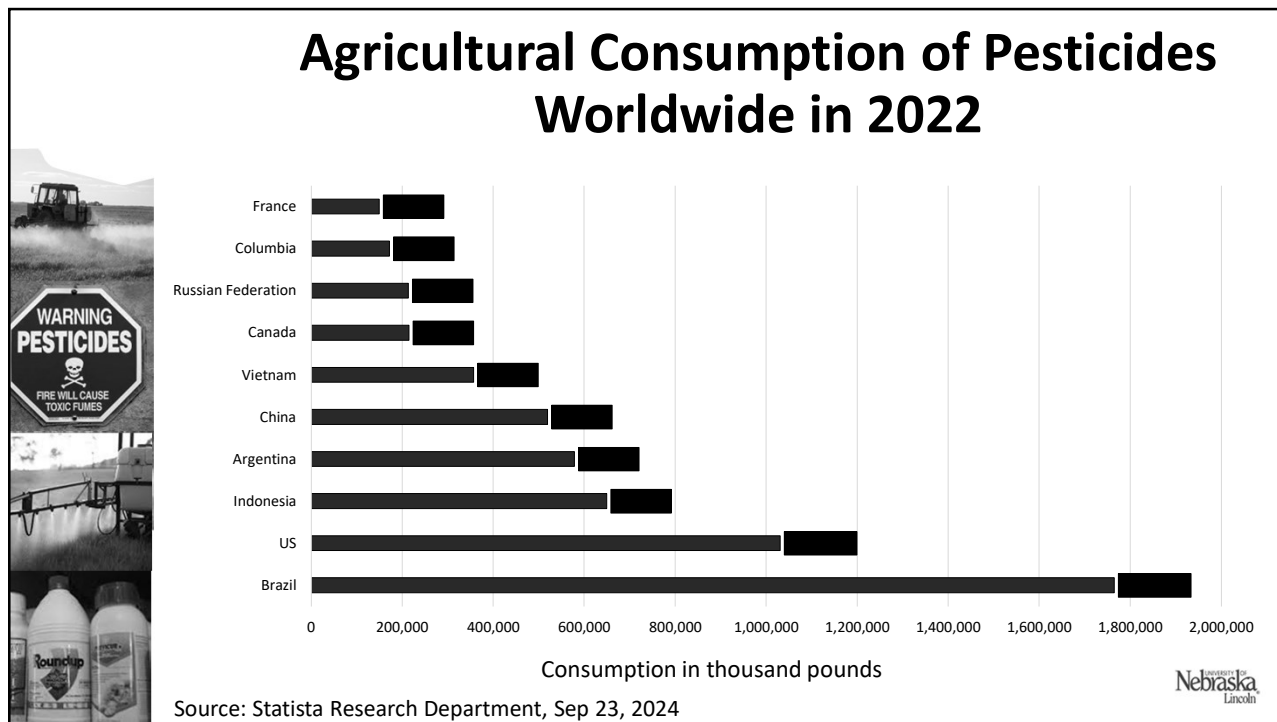


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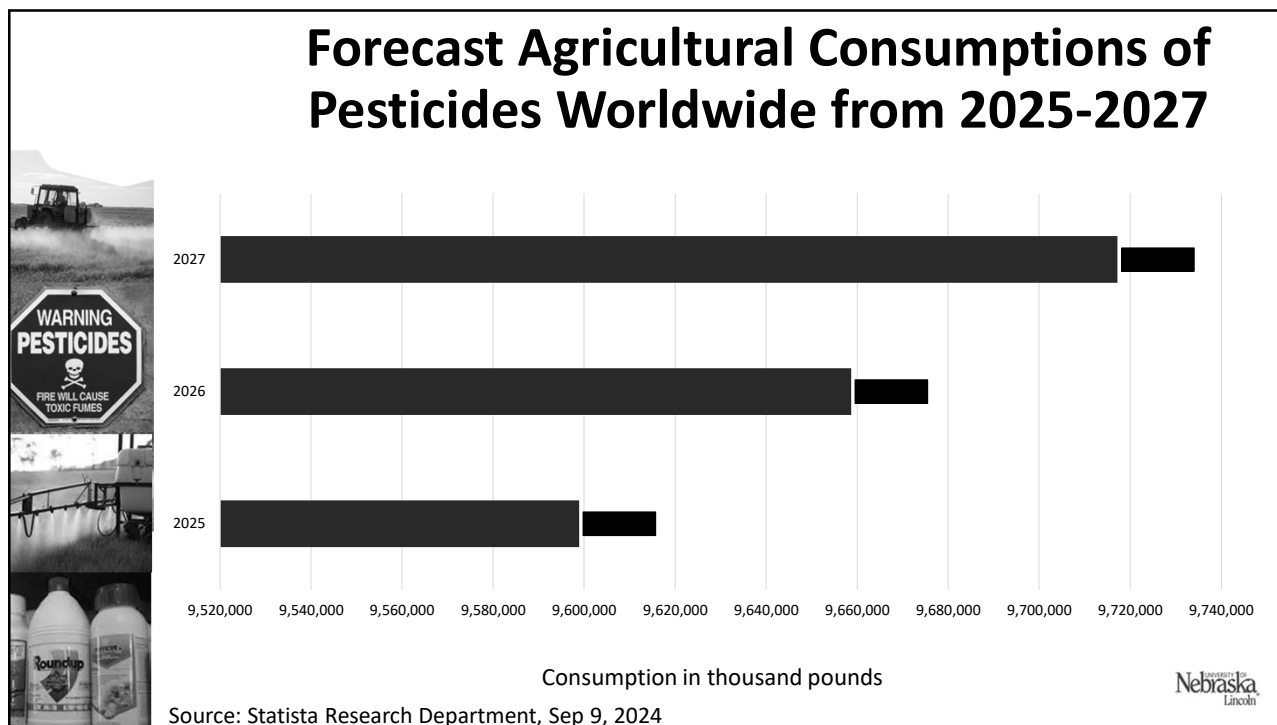
# Types of Pesticides



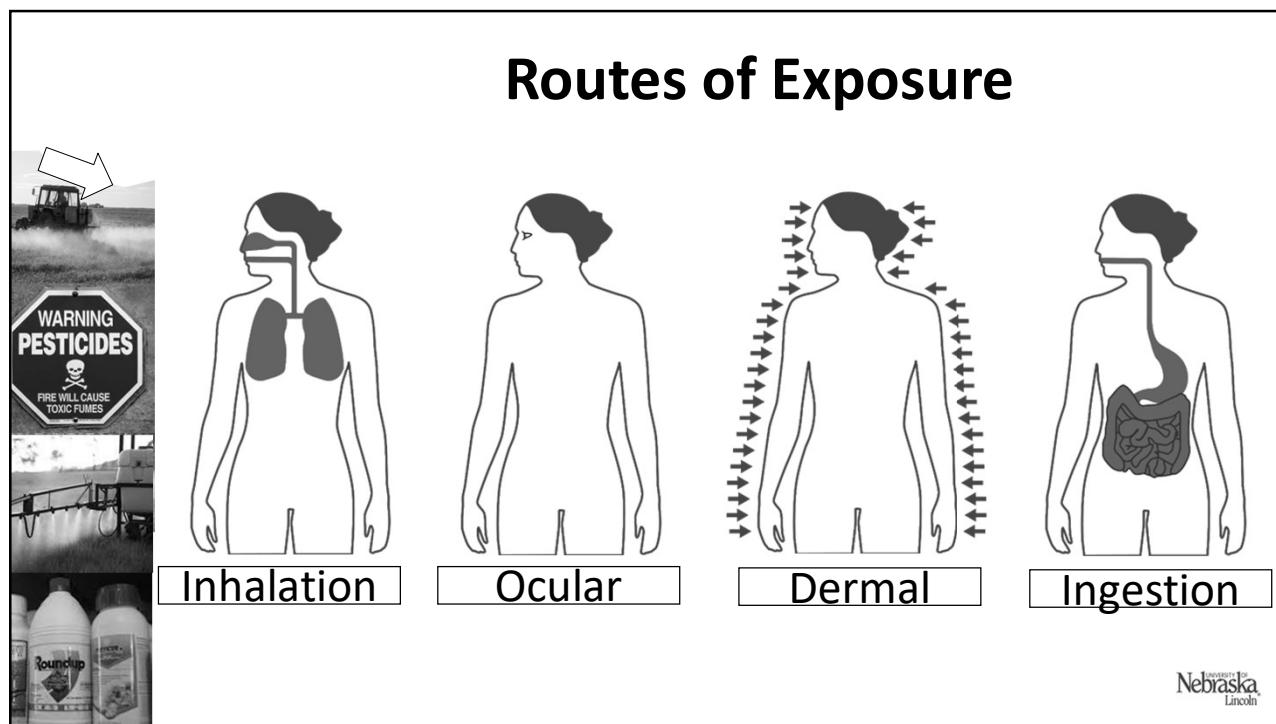
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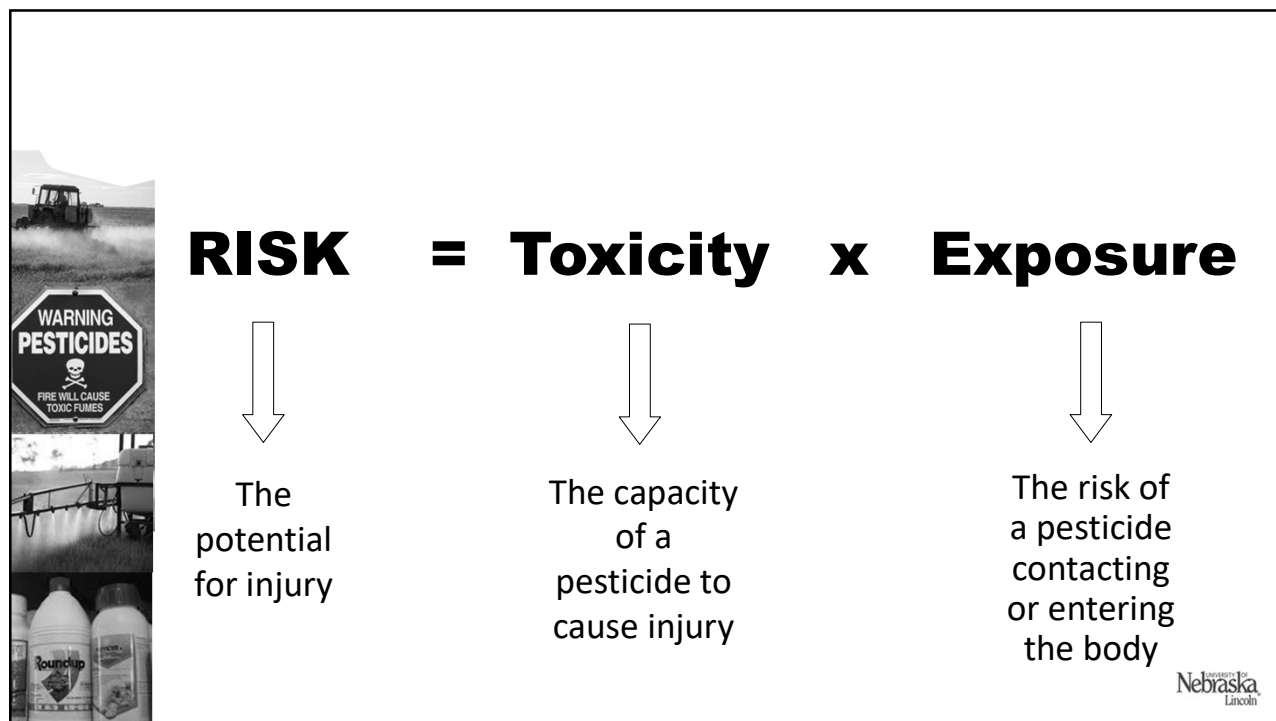
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## Acute vs Chronic Toxicity

**ACUTE**

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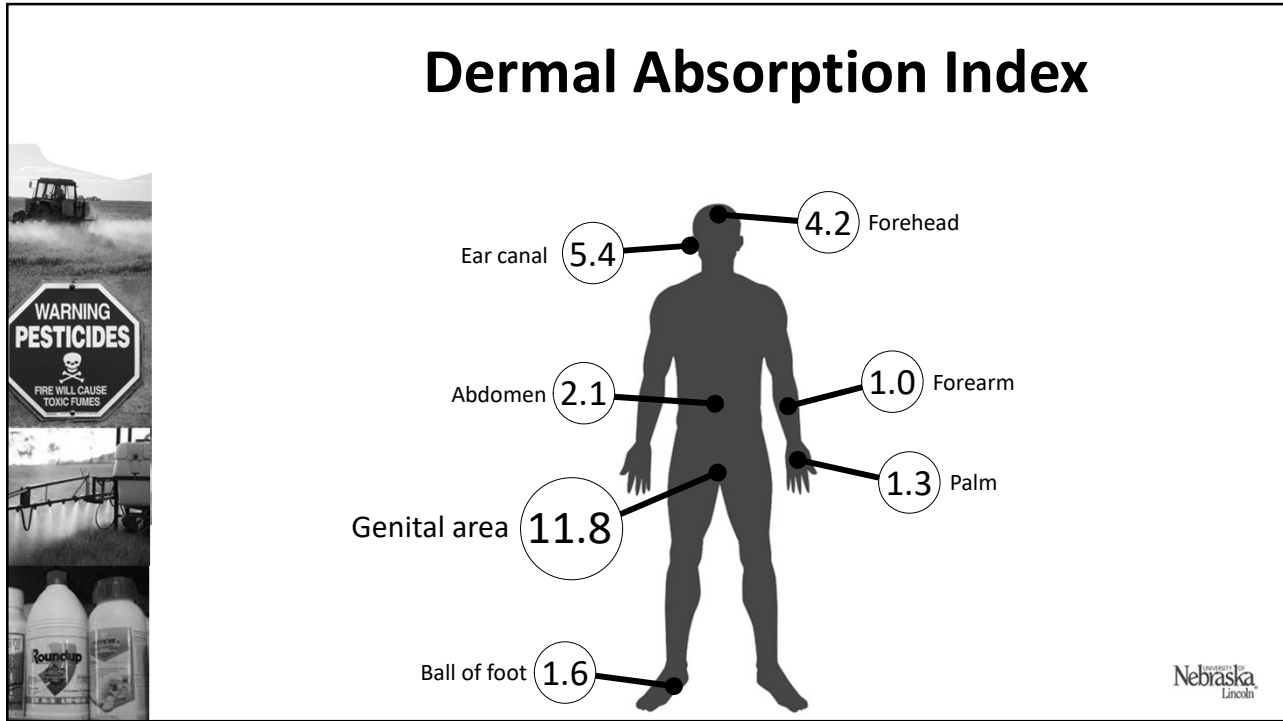
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## Acute vs Chronic Toxicity

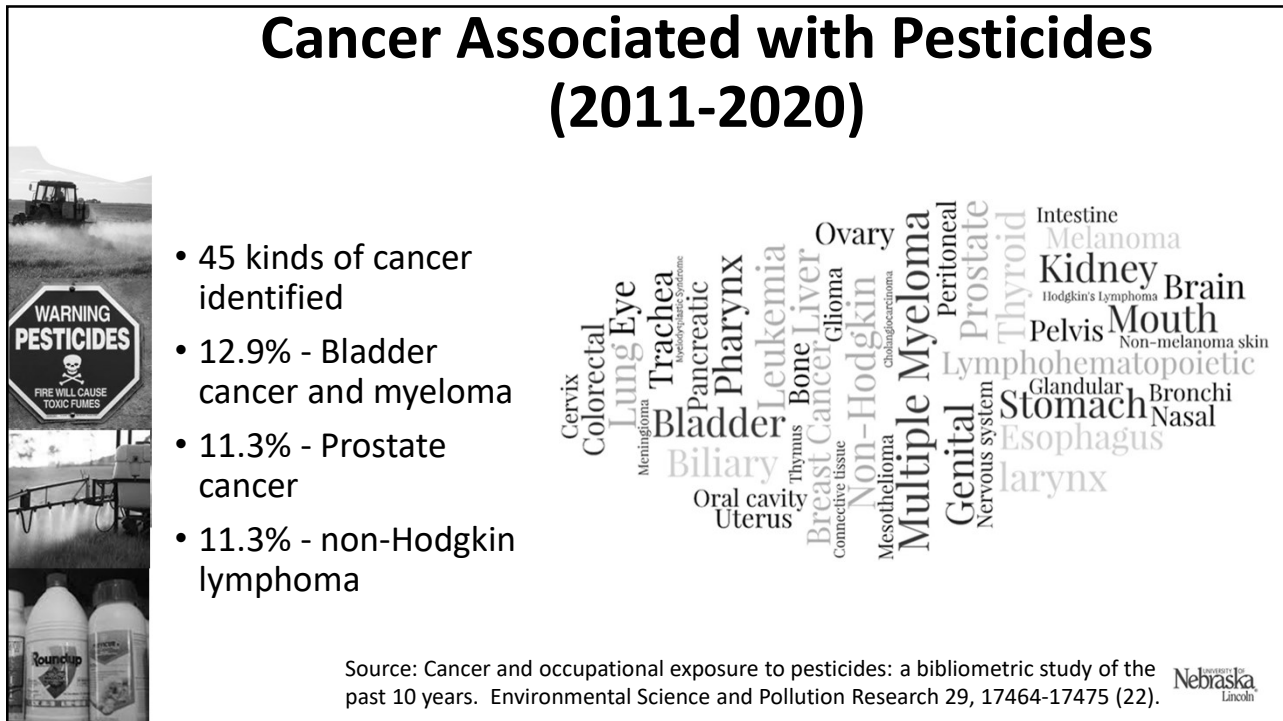
**CHRONIC**

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## Chronic Toxicity and Parkinson's Disease



- Parkinson's diseases associated with some applicators using paraquat, permethrin or trifluralin
- Not associated with those applicators who wore gloves and practiced good workplace hygiene

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## Shingles Risk



- Increase chance of developing shingles when using insecticides (malathion, carbaryl, diazinon and lindane), two fumigants (methyl bromide and carbon tetrachloride) and two herbicides (2,4-D and trifluralin)

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## Rheumatoid Arthritis



- 97% white male farmers
- Increased risk when they used insecticides (malathion, phorate, carbaryl, and carbofuran), herbicides (alachlor (Lasso), metolachlor (Dual II), S-ethyl dipropylthiocarbamate (Shortstop) and metribuzin (Tricor)) and fungicide (benomyl)

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## Inflammatory Bowel Disease



- Elevated hazards/risk for inflammatory bowel disease associated with insecticides (dieldrin, DDT, toxaphene parathion, terbufos, phorate) and herbicides (2,4,5-T (Agent Orange), 2,4,5-TP (Fenoprop) and metolachlor (Dual II))
- However multifactorial with interactions among environmental factors, genetic predisposition, immunological dysfunction and gut microbiome.

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## Depression



- Men – doctor diagnosed linked to:
  - Pesticide poisonings
  - High exposure events, such as pesticide spills
  - Use of insecticides – organophosphates and organochlorines
  - Many days of pesticide application over a lifetime
- Women
  - Only pesticide poisonings

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## Fertility/Reproduction



- Endocrine disruptors – interfering with physiological processes
  - Birth defects – DDT
  - Low birth weight
  - Pre-term labor
- M. Tudi, H. Li, H. Li, L. Wang, J. Lyu, L. Yang, S. Tong, Q.J. Yu, H.D. Ruan, A. Atabila, D.T. Phung, R. Sadler, D. Connell. Exposure routes and health risks associated with pesticide application. *Toxics*, 10 (6) (2022), p. 335, [10.3390/toxics10060335](https://doi.org/10.3390/toxics10060335)
- <https://birthdefects.org/ddt-2/>
- <https://bow.unl.edu/>



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## Breast Cancer



- Pesticide exposure is a risk for breast cancer
  - But is multifactorial disease – genetic and non-genetic risks
- No concern associated with breast cancer and washing clothes (Pesticide application, living in sprayed areas, washing clothes - Engel et al. (b))
- Australia had a single study that showed increased risk of breast cancer 20+ years following exposure due to drift if below the age of 18 years



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## Label Signal Words



Signal Words	
<b>Caution</b>	Slightly toxic
<b>Warning</b>	Moderately toxic
<b>Danger</b>	Very toxic
<b>Danger- Poison</b>	Highly toxic to the body

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# Label Signal Words

- Dairy Bomb 55
- Round-up
- Sevin

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# Types of Label Statements

**Mandatory** Directs the user to take or avoid specific actions, they are enforceable. Written in directive sentences.

Ex. “do not”, “must”, “shall”

**Factual** Neither Mandatory or Advisory. Simply states a fact that may provide an explanation of a mandatory or advisory statement.

**Advisory** Informs the user of an optional action, they are not enforceable. Written in descriptive sentences.

Ex. “should”, “it may be...”

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## Personal Protective Equipment (PPE)

### Dairy Bomb 55



**CAUTION:** Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear the following:

- Long-sleeved shirt,
- Long pants,
- Shoes and socks, and
- Chemical-resistant gloves (such as barrier laminate, nitrile rubber, neoprene rubber, or Viton).

#### User Safety Requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables

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## Personal Protective Equipment (PPE)

### Sevin

#### HAZARDS TO HUMANS (& DOMESTIC ANIMALS)

##### CAUTION

**HARMFUL IF SWALLOWED, ABSORBED THROUGH THE SKIN, INHALED, OR IF IN EYES.**

Avoid breathing vapors or spray mist. Avoid contact with eyes, skin or clothing. Keep out of reach of children and domestic animals.

**OVEREXPOSURE MAY CAUSE:** Salivation, watery eyes, pinpoint eye pupils, blurred vision, muscle tremors, difficult breathing, excessive sweating, abdominal cramps, nausea, vomiting, diarrhea, weakness, headache. **IN SEVERE CASES CONVULSION, UNCONSCIOUSNESS AND RESPIRATORY FAILURE MAY OCCUR. SIGNS AND SYMPTOMS OCCUR RAPIDLY FOLLOWING OVEREXPOSURE TO THIS PRODUCT.**

#### PERSONAL PROTECTIVE EQUIPMENT:

Applicators and other handlers must wear long-sleeved shirt and long pants, chemical resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride (PVC), or viton, shoes plus socks and chemical-resistant headgear for overhead exposure.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### ENVIRONMENTAL HAZARDS

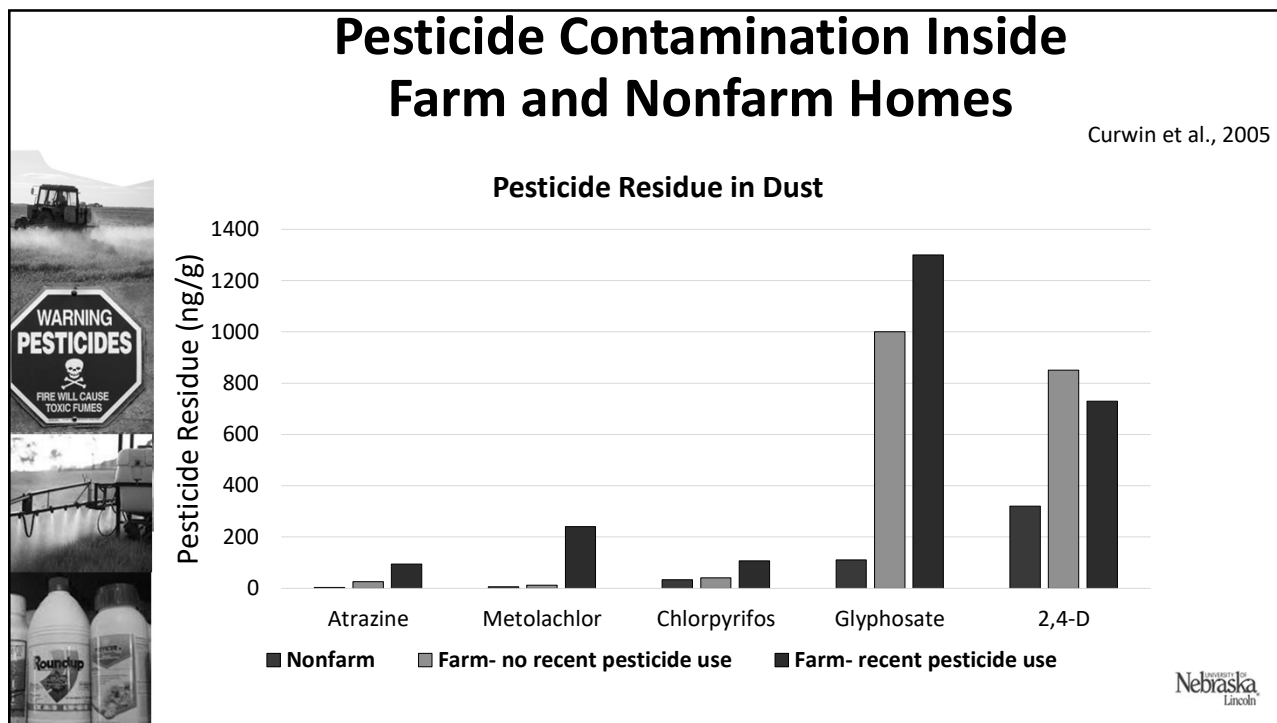
This product is extremely toxic to aquatic and estuarine invertebrates. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Discharge from rice fields may kill aquatic and estuarine invertebrates. Do not apply when weather conditions favor drift from area treated. Do not contaminate water by cleaning

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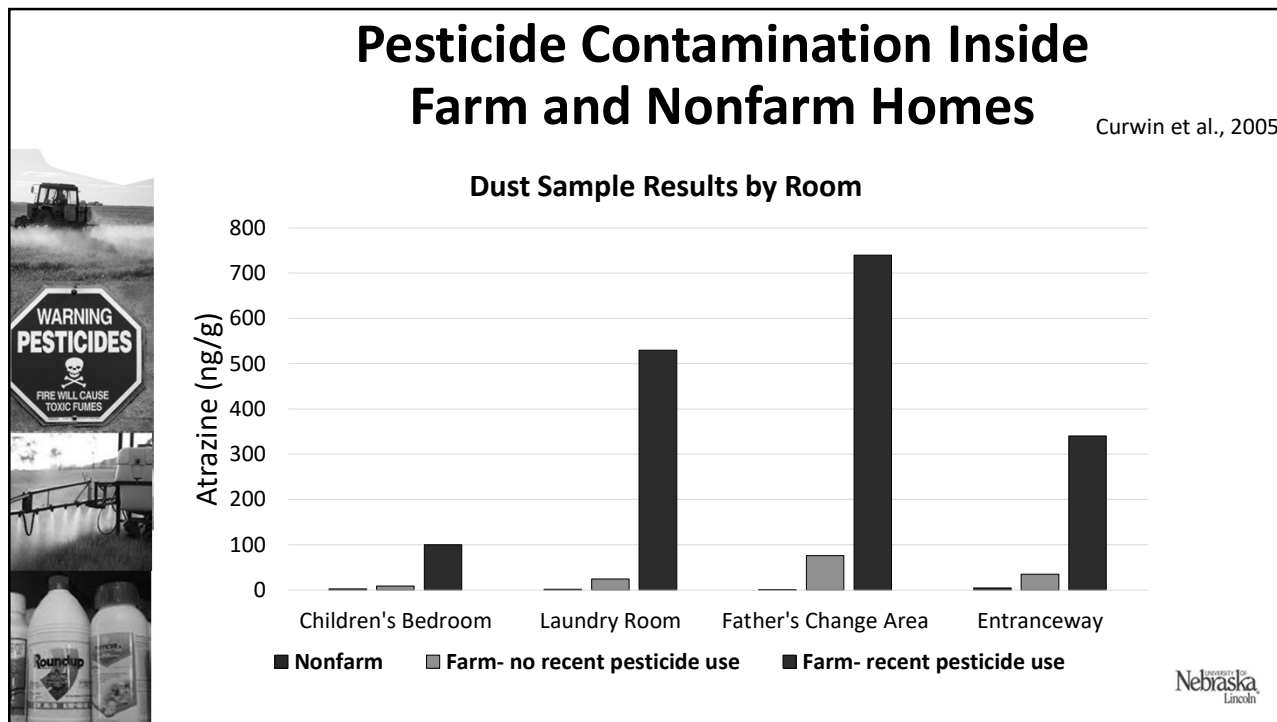
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### WASHING PESTICIDE CLOTHES

- Wash separately from all other laundry
- Wear gloves and long sleeves when putting laundry in washer
- Use maximum amount of detergent recommended for machine
- Use **HOT** water and the highest water setting (will need to over-ride High Efficiency washer setting)
- Use pre-rinse/soak setting before starting wash cycle
- Wash a minimum of 20 minutes
- Use a high-speed spin
- WASH** hands once done
- Line dry or use dryer
- Run empty wash cycle with detergent, highest water and hot water before using the washer for household laundry



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# Questions

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