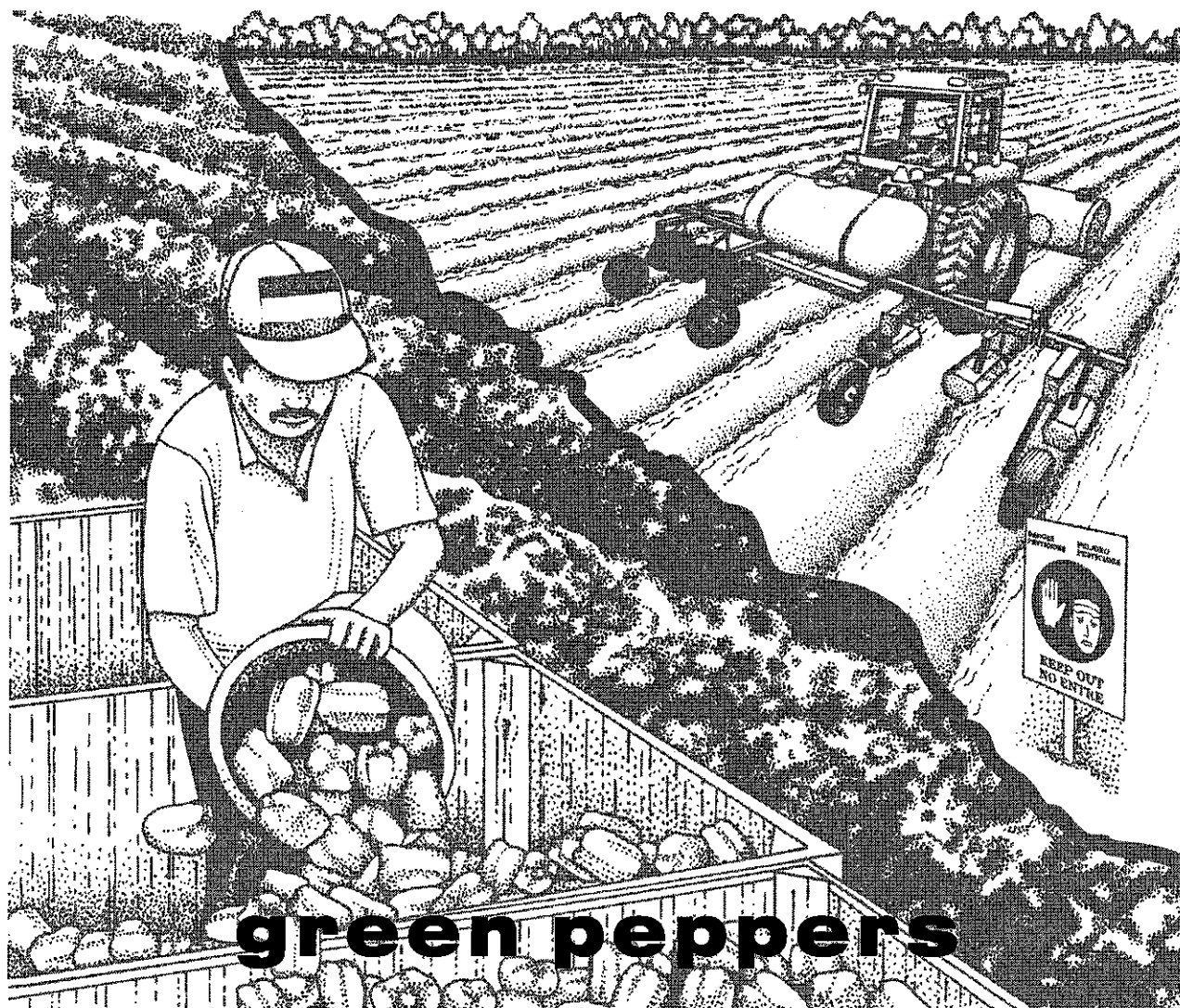


# PESTICIDES & Human Health

As an agricultural worker, your health and safety are important. This fact sheet is intended for green pepper workers. It is part of a series focusing on crops that require intensive hand labor.

Throughout the world, pesticides are used to produce food, fiber, and forest products. They are designed to kill specific pests and diseases and to regulate plant growth. However, as an agricultural worker, you may be exposed to pesticide residues through daily crop maintenance and harvest procedures — or to the pesticides themselves during their application or by accident. Such exposure may be harmful to your health.



**green peppers**

## How Can Pesticides Enter Your Body?

Pesticides are used in various forms: powders, liquids, pellets, granules, sprays, and gases (fumigants). Once pesticides are applied, residues may be found in soils, on plants, on harvested products, on application equipment, in water and irrigation canals, in pesticide storage areas, and on your clothes. Pesticides can enter your body in three ways:

By **swallowing** the chemical. You can ingest pesticide residues if you do not wash your hands before you eat, smoke, chew gum, or chew tobacco.

By **breathing** pesticide dust or fumes through your nose or mouth.

By **absorbing** the chemical through your skin or eyes. Spills, splashes, and clothing contaminated by pesticide residues are sources of exposure. Failing to wash your hands before you use the restroom increases your risk of exposure; so do open cuts or inadequate protective clothing and equipment.

### Short-Term Poisoning Symptoms

*One or more of these symptoms may indicate that you are experiencing pesticide poisoning.*

- ① nausea, vomiting, diarrhea
- ② chest pain, coughing
- ③ difficulty breathing
- ④ excessive sweating
- ⑤ headache
- ⑥ eye, skin, throat irritation
- ⑦ itching, skin rash
- ⑧ blurred vision
- ⑨ small pupils
- ⑩ stomach/muscle cramps
- ⑪ drooling (mouth or nose)
- ⑫ weakness, dizziness
- ⑬ jumpiness, edginess

### Potential Long-Term Health Effects

*Even if you have not experienced symptoms of short-term pesticide poisoning, long-term exposure (months or years) to even small amounts of **some** pesticides may cause any of the following health conditions:*

- ① allergies
- ② skin damage and irritation
- ③ nervous system damage
- ④ cancer
- ⑤ birth defects
- ⑥ reproductive problems (sterility or miscarriage)


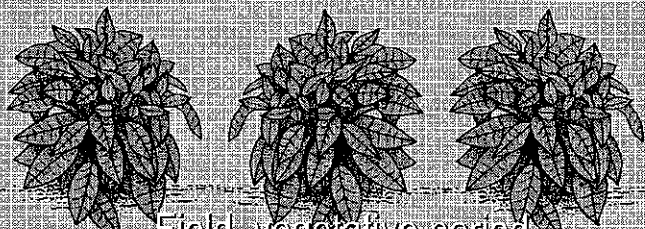
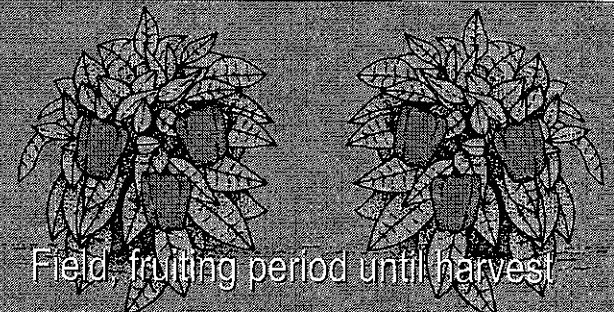


## First Aid Tips

*If you have pesticide poisoning symptoms, **immediately**:*




- ① Leave the site of exposure. Wash all exposed areas with soap and plenty of water; change your clothes.
- ② Tell your employer; if you cannot do so, ask someone to do it for you.
- ③ Call 911 or other emergency medical personnel. Go to the nearest doctor, hospital, or migrant health clinic. Get help; do not drive yourself.
- ④ Follow the first-aid instructions on the pesticide label. If you do not have the label or do not understand it, ask someone to get it or explain it to you.
- ⑤ If you get pesticides in your eyes, rinse them with clean water for 15 minutes.
- ⑥ If you inhale fumes, get to fresh air or an uncontaminated area; sit down, remain calm, and breathe as normally as possible.
- ⑦ If you swallow pesticides, refer to the first-aid instructions on the pesticide label.
- ⑧ Tell the doctor that you have been exposed to pesticides; provide the pesticide name and label.

# Names and Application Times of the Most Common Green Pepper Pesticides

 Greenhouse	 Field, vegetative period			 Field, fruiting period until harvest		
<b>DIPEL 2X</b> Insecticide Do Not Enter For <b>4 hrs.</b> Level of Toxicity <b>1 Caution</b>	<b>DIMETHOATE 4EC</b> Insecticide Do Not Enter For <b>48 hrs.</b> Level of Toxicity <b>2 Warning</b>	<b>POAST</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>2 Warning</b>	<b>DACTHAL</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>1 Caution</b>	<b>ORTHENE 75SP</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>1 Caution</b>	<b>ASANA XL</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>2 Warning</b>	<b>LANNATE LV</b> Insecticide Do Not Enter For <b>48 hrs.</b> Level of Toxicity <b>3 Danger</b> <b>Poison</b>
<b>MALATHION 57 EC</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>1 Caution</b>	<b>KOCIDE 101*</b> Fungicide Do Not Enter For <b>48 hrs.</b> Level of Toxicity <b>3 Danger</b>	<b>MANEB 4F</b> Fungicide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>1 Caution</b>	<b>RIDOMIL GOLD 4EC</b> Fungicide Do Not Enter For <b>48 hrs.</b> Level of Toxicity <b>2 Warning</b>	<b>POUNCE 3.2EC</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>1 Caution</b>	<b>BAYTHROID 2EC</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>3 Danger</b>	<b>SEVIN 80S</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>2 Warning</b>

\*Other Product Names: Kocide DF, Kocide 606, Copper Count N, Champ

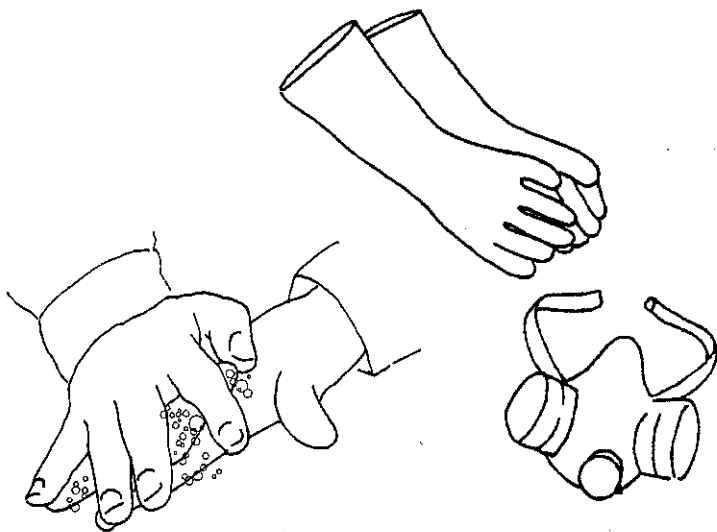
Always refer to the pesticide label for current toxicity and re-entry interval (REI) information.

LEVEL OF TOXICITY		
<b>1 Caution</b>	<b>2 Warning</b>	<b>3 Danger</b>
 Slightly toxic; less than one pint can kill an adult.	 Moderately toxic; less than two teaspoons can kill an adult.	 Highly toxic; less than one teaspoon can kill an adult.

## Health and Safety Tips

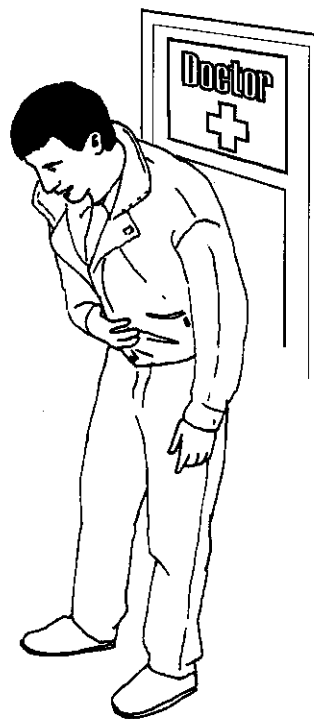
Pesticide residues remain in fields after the pesticides have been applied. Therefore, you should **always**:

- 1 Wear clothing that covers the skin: a long-sleeved shirt, long pants, socks, and shoes. A hat, handkerchief, and gloves are also recommended.
- 2 Wash your hands before eating, drinking, or smoking; before chewing gum or tobacco; and before using the restroom because there could be pesticide residues on your hands. Do not eat or smoke in treated fields.
- 3 Use a clean cloth to wipe sweat from your brow. Avoid scratching or wiping your face with your hand or shirt sleeve.
- 4 Wash your work clothes before wearing them again. When washing your work clothes, separate them from your family's laundry so that you do not contaminate it.



If you are going to mix or apply pesticides or enter a treated field before the re-entry period has ended, you should **always**:

- 1 Know that entry into treated areas before the Restricted Entry Interval (the period of time you must wait before re-entering a treated field) has ended is **only** allowed for some tasks, as described in the Worker Protection Standard.
- 2 Know the chemical and its associated hazards. Each pesticide has different instructions, toxicity, and precautions (see figure).
- 3 Read and follow the instructions listed on the pesticide label. If you do not understand the label instructions, ask someone to explain them to you.
- 4 Wear the Personal Protective Equipment listed on the pesticide label. This may include clothing that covers your skin, chemical-resistant gloves, and a respirator.



When working with pesticides or in fields in which pesticides have been applied, you should remember:

- 1 **Never** eat, drink, or smoke in recently treated fields or if you have handled pesticide containers.
- 2 **Never** re-use empty pesticide containers for any purpose. For example, do not use pesticide containers as water jugs, laundry basins, or trash cans.
- 3 **Never** drink, bathe, or wash food or clothing in irrigation ditches, which may contain pesticide residues from treated fields.

## Other Health and Safety Concerns

**Skin diseases**—Farm work is often performed in environmental conditions that may cause skin-related illness or injury. Some may be serious enough to cause lost work time. Injured skin may be more susceptible to chemical or pesticide exposure. Proper clothing and protective equipment such as a wide-brimmed hat, long-sleeved shirt, long pants, socks, shoes, and gloves should be used to help protect your skin from the following:

- 1 excessive sunlight
- 2 extreme hot or cold weather conditions
- 3 residues from farm chemicals such as fertilizers, pesticides, cleaners, and fuels
- 4 cuts, abrasions, and punctures from plants with hair-like projections, thorns or sharp-edged leaves
- 5 irritations or allergies from contact with natural plant substances such as oils or other compounds (for example, contact with poison ivy)
- 6 biting and stinging insects or other animals

**Heat stress**—People may become sick with heat stress when they work in extremely hot, humid weather, especially if they are not drinking enough water. Heat stress occurs when your body is overworked and exposed to more heat than it can tolerate. Heat stress is not caused by exposure to pesticides, but the symptoms are similar to those caused by pesticide exposure or green tobacco sickness. The symptoms of heat stress include:

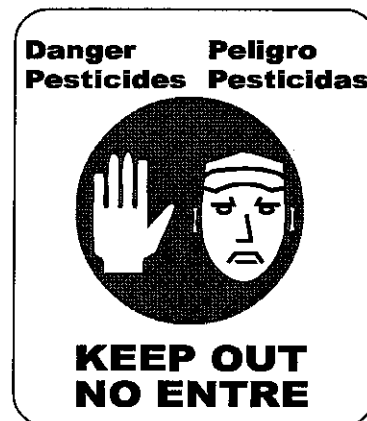
- 1 nausea and vomiting
- 2 weakness and dizziness
- 3 severe thirst and dry mouth
- 4 confusion or slurred speech
- 5 excessive sweating (or lack of sweating)
- 6 headache and chills

**Seek medical help.** The response of the skin to physical or chemical irritants may be similar. Persistent skin irritations should be treated by a doctor to prevent worsening conditions. Tell the doctor if you have been exposed to pesticides, what crop you have been working in, and how much water you have been drinking so that the doctor can determine the cause of your symptoms and treat you properly.

## Pesticide Law Protects Workers

*The Worker Protection Standard (WPS) is designed to protect agricultural workers who may be exposed to pesticides. Whenever a pesticide is applied, a grower must:*

- 1 Provide basic training about pesticides and pesticide safety before field work begins. If you mix and apply pesticides, you must receive additional training, which includes information on how to follow the pesticide label and what personal protective clothing and equipment are required.
- 2 Post in a central location the name of the pesticide (active ingredient(s) and EPA registration number), the location and description of the treated area, the time and date of the application, the Restricted Entry Interval (REI—the period of time you must wait before re-entering a treated field), and emergency medical information. The following are the **only** conditions under which you can enter a treated field before the REI has ended: when performing certain WPS-approved tasks and when you have had special training and wear special protective clothing and equipment.
- 3 Provide water, soap, and paper towels in the field, or within ¼ mile of the field, so that you can wash your hands or body, if necessary.
- 4 Take you to the doctor, hospital, or migrant health clinic if you become sick because of working with pesticides.
- 5 Not retaliate, fire, or harass you for asking for your legal right to know or for reporting a violation to the NC Department of Agriculture and Consumer Services or the NC Department of Labor. If you report a violation, you do not have to give your name.



## Health Emergencies:

For any type of Emergency, call 911\*

To obtain information about any poison, including pesticides, call the  
North Carolina Poison Control Center at 1-800-848-6946\* (toll free)

<i>The nearest emergency medical facility (hospital) is:</i>	
Name	_____
Street	_____
City	_____
Telephone Number	_____

### Questions and Violations:

**The agency responsible for enforcing the Pesticide Law and providing any type of information on pesticides:**  
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Agricultural Safety and Health Section . . . 919-733-8731\*

**If you have any questions on how pesticides may affect your health, call:**  
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#### FOR FURTHER INFORMATION

Other crop-specific publications in the *Pesticides & Human Health* series include:  
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*The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical.*

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# PESTICIDES

## *& Human Health*

As an agricultural worker, your health and safety are important. This fact sheet is intended for sweetpotato workers. It is part of a series focusing on crops that require intensive hand labor.

Throughout the world, pesticides are used to produce food, fiber, and forest products. They are designed to kill specific pests and diseases and to regulate plant growth. However, as an agricultural worker, you may be exposed to pesticide residues through daily crop maintenance and harvest procedures — or to the pesticides themselves during their application or by accident. Such exposure may be harmful to your health.



## How Can Pesticides Enter Your Body?

Pesticides are used in various forms: powders, liquids, pellets, granules, sprays, and gases (fumigants). Once pesticides are applied, residues may be found in soils, on plants, on harvested products, on application equipment, in water and irrigation canals, in pesticide storage areas, and on your clothes. Pesticides can enter your body in three ways:

By **swallowing** the chemical. You can ingest pesticide residues if you do not wash your hands before you eat, smoke, chew gum, or chew tobacco.

By **breathing** pesticide dust or fumes through your nose or mouth.

By **absorbing** the chemical through your skin or eyes. Spills, splashes, and clothing contaminated by pesticide residues are sources of exposure. Failing to wash your hands before you use the restroom increases your risk of exposure; so do open cuts or inadequate protective clothing and equipment.

### Short-Term Poisoning Symptoms

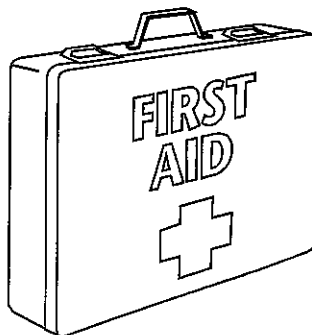
*One or more of these symptoms may indicate that you are experiencing pesticide poisoning.*

- ① nausea, vomiting, diarrhea
- ② chest pain, coughing
- ③ difficulty breathing
- ④ excessive sweating
- ⑤ headache
- ⑥ eye, skin, throat irritation
- ⑦ itching, skin rash
- ⑧ blurred vision
- ⑨ small pupils
- ⑩ stomach/muscle cramps
- ⑪ drooling (mouth or nose)
- ⑫ weakness, dizziness
- ⑬ jumpiness, edginess

### Potential Long-Term Health Effects

*Even if you have not experienced symptoms of short-term pesticide poisoning, long-term exposure (months or years) to even small amounts of **some** pesticides **may** cause any of the following health conditions:*

- ① allergies
- ② skin damage and irritation
- ③ nervous system damage
- ④ cancer
- ⑤ birth defects
- ⑥ reproductive problems (sterility or miscarriage)






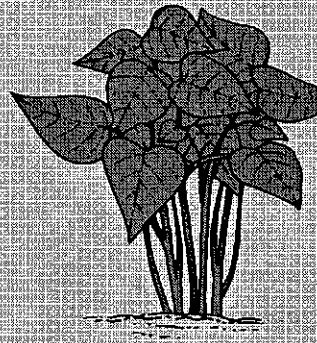
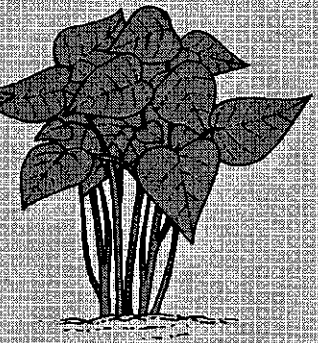
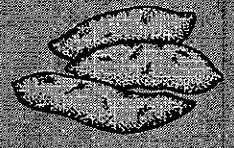







## First Aid Tips

*If you have pesticide poisoning symptoms, **immediately**:*

- ① Leave the site of exposure. Wash all exposed areas with soap and plenty of water; change your clothes.
- ② Tell your employer; if you cannot do so, ask someone to do it for you.
- ③ Call 911 or other emergency medical personnel. Go to the nearest doctor, hospital, or migrant health clinic. Get help; do not drive yourself.
- ④ Follow the first-aid instructions on the pesticide label. If you do not have the label or do not understand it, ask someone to get it or explain it to you.
- ⑤ If you get pesticides in your eyes, rinse them with clean water for 15 minutes.
- ⑥ If you inhale fumes, get to fresh air or an uncontaminated area; sit down, remain calm, and breathe as normally as possible.
- ⑦ If you swallow pesticides, refer to the first-aid instructions on the pesticide label.
- ⑧ Tell the doctor that you have been exposed to pesticides; provide the pesticide name and label.

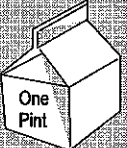




# Names and Application Times of the Most Common Sweetpotato Pesticides

Plant Beds			Field Control			Post-harvest Sanitation
						
<b>SEVIN XLR PLUS</b> Insecticide	<b>THIODAN*</b> Insecticide	<b>MALATHION</b> Insecticide	<b>SEVIN XLR PLUS</b> Insecticide	<b>THIODAN*</b> Insecticide	<b>DIPEL*</b> Insecticide	<b>BOTRAN</b> Fungicide
Do Not Enter For  <b>12 hrs.</b>	Do Not Enter For  <b>24 hrs.</b>	Do Not Enter For  <b>12 hrs.</b>	Do Not Enter For  <b>12 hrs.</b>	Do Not Enter For  <b>24 hrs.</b>	Do Not Enter For  <b>4 hrs.</b>	Do Not Enter For  <b>12 hrs.</b>
Level of Toxicity <b>1 Caution</b>	Level of Toxicity <b>3 Danger</b> <b>4 Poison</b>	Level of Toxicity <b>1 Caution</b>	Level of Toxicity <b>1 Caution</b>	Level of Toxicity <b>3 Danger</b> <b>4 Poison</b>	Level of Toxicity <b>1 Caution</b>	Level of Toxicity <b>1 Caution</b>
	<small>*Other Product Names: Phaser</small>			<small>*Other Product Names: Phaser</small>	<small>*Other Product Names: Javelin, Blobl, Condor</small>	

Always refer to the pesticide label for current toxicity and re-entry interval (REI) information.

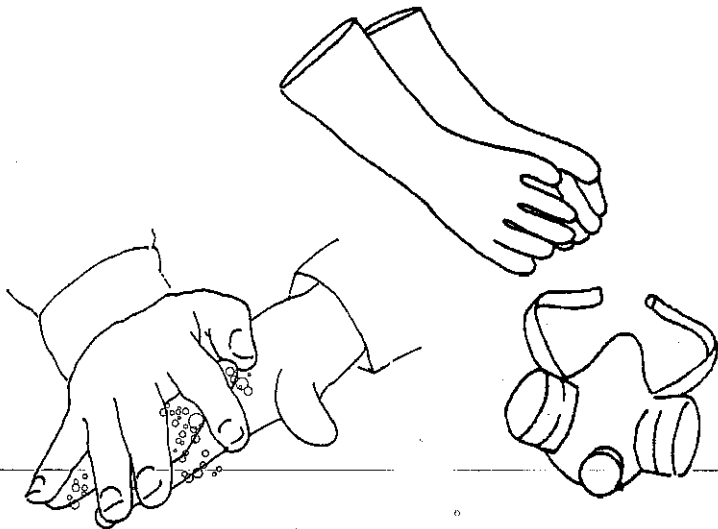
### LEVEL OF TOXICITY

<b>1 Caution</b>	<b>2 Warning</b>	<b>3 Danger</b>
 <p>Slightly toxic, less than one pint can kill an adult.</p>	 <p>Moderately toxic, less than two tablespoons can kill an adult.</p>	 <p>Highly toxic, less than one teaspoon can kill an adult.</p>

## Health and Safety Tips

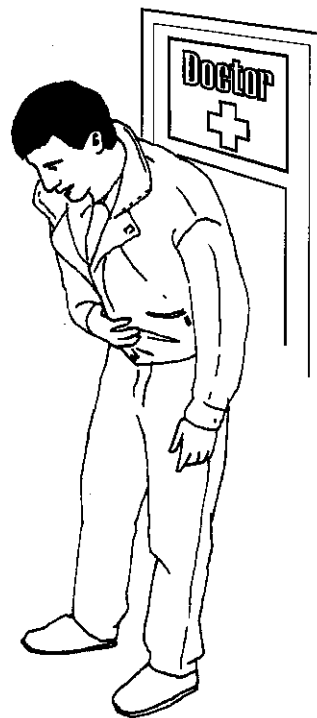
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## Other Health and Safety Concerns

**Skin diseases**—Farm work is often performed in environmental conditions that may cause skin-related illness or injury. Some may be serious enough to cause lost work time. Injured skin may be more susceptible to chemical or pesticide exposure. Proper clothing and protective equipment such as a wide-brimmed hat, long-sleeved shirt, long pants, socks, shoes, and gloves should be used to help protect your skin from the following:

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<i>The nearest emergency medical facility (hospital) is:</i>	
Name	_____
Street	_____
City	_____
Telephone Number	_____

### Questions and Violations:

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- ② *The agency responsible for enforcing the laws concerning health and safety conditions in labor camps and in fields:*  
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Agricultural Safety and Health Section . . . 919-733-8731\*
- ③ *If you have any questions on how pesticides may affect your health, call:*  
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\*Spanish is spoken

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*The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical.*

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# PESTICIDES & Human Health

As an agricultural worker, your health and safety are important. This fact sheet is intended for tobacco workers. It is part of a series focusing on crops that require intensive hand labor.

Throughout the world, pesticides are used to produce food, fiber, and forest products. They are designed to kill specific pests and diseases and to regulate plant growth. However, as an agricultural worker, you may be exposed to pesticide residues through daily crop maintenance and harvest procedures — or to the pesticides themselves during their application or by accident. Such exposure may be harmful to your health.



**tobacco**

## How Can Pesticides Enter Your Body?

Pesticides are used in various forms: powders, liquids, pellets, granules, sprays, and gases (fumigants). Once pesticides are applied, residues may be found in soils, on plants, on harvested products, on application equipment, in water and irrigation canals, in pesticide storage areas, and on your clothes. Pesticides can enter your body in three ways:

By **swallowing** the chemical. You can ingest pesticide residues if you do not wash your hands before you eat, smoke, chew gum, or chew tobacco.

By **breathing** pesticide dust or fumes through your nose or mouth.

By **absorbing** the chemical through your skin or eyes. Spills, splashes, and clothing contaminated by pesticide residues are sources of exposure. Failing to wash your hands before you use the restroom increases your risk of exposure; so do open cuts or inadequate protective clothing and equipment.

### Short-Term Poisoning Symptoms

*One or more of these symptoms may indicate that you are experiencing pesticide poisoning.*

- ① nausea, vomiting, diarrhea
- ② chest pain, coughing
- ③ difficulty breathing
- ④ excessive sweating
- ⑤ headache
- ⑥ eye, skin, throat irritation
- ⑦ itching, skin rash
- ⑧ blurred vision
- ⑨ small pupils
- ⑩ stomach/muscle cramps
- ⑪ drooling (mouth or nose)
- ⑫ weakness, dizziness
- ⑬ jumpiness, edginess

### Potential Long-Term Health Effects

*Even if you have not experienced symptoms of short-term pesticide poisoning, long-term exposure (months or years) to even small amounts of **some** pesticides may cause any of the following health conditions:*

- ① allergies
- ② skin damage and irritation
- ③ nervous system damage
- ④ cancer
- ⑤ birth defects
- ⑥ reproductive problems (sterility or miscarriage)

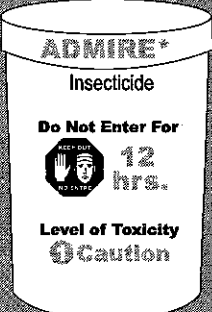


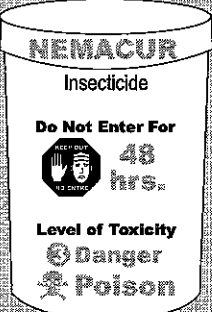



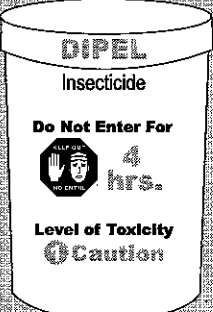


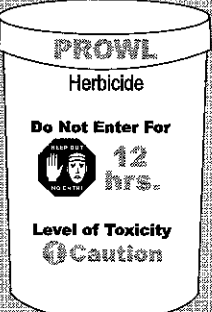


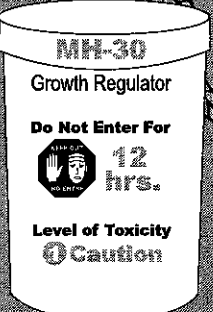


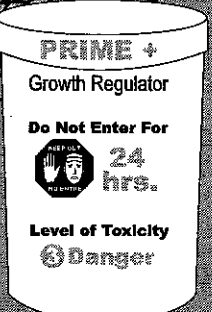


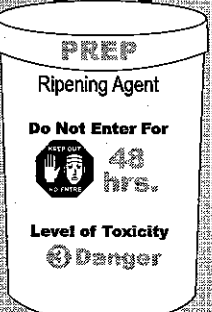


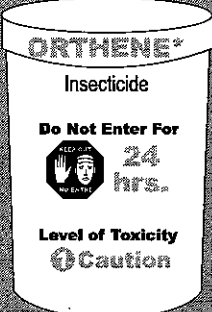


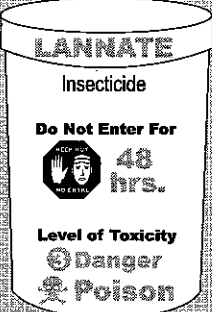



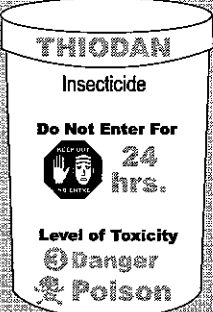






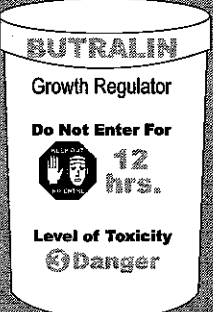


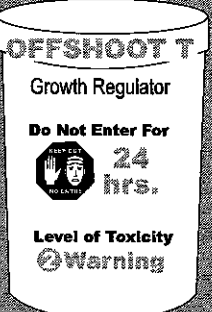




## First Aid Tips

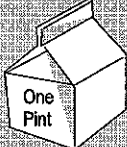


*If you have pesticide poisoning symptoms, **immediately**:*

- ① Leave the site of exposure. Wash all exposed areas with soap and plenty of water; change your clothes.
- ② Tell your employer; if you cannot do so, ask someone to do it for you.
- ③ Call 911 or other emergency medical personnel. Go to the nearest doctor, hospital, or migrant health clinic. Get help; do not drive yourself.
- ④ Follow the first-aid instructions on the pesticide label. If you do not have the label or do not understand it, ask someone to get it or explain it to you.
- ⑤ If you get pesticides in your eyes, rinse them with clean water for 15 minutes.
- ⑥ If you inhale fumes, get to fresh air or an uncontaminated area; sit down, remain calm, and breathe as normally as possible.
- ⑦ If you swallow pesticides, refer to the first-aid instructions on the pesticide label.
- ⑧ Tell the doctor that you have been exposed to pesticides; provide the pesticide name and label.

# Names and Application Times of the Most Common Tobacco Pesticides

Transplants	Field Control			Topping & Suckering		Harvest
 <p><b>ADMIRE<sup>+</sup></b> Insecticide</p> <p>Do Not Enter For  <b>12 hrs.</b></p> <p>Level of Toxicity  <b>Caution</b></p> <p>Other Product Names: Pivado</p>	 <p><b>NEMACUR</b> Insecticide</p> <p>Do Not Enter For  <b>48 hrs.</b></p> <p>Level of Toxicity  <b>Danger</b>  <b>Poison</b></p>	 <p><b>DIPEL</b> Insecticide</p> <p>Do Not Enter For  <b>4 hrs.</b></p> <p>Level of Toxicity  <b>Caution</b></p> <p>Other Product Names: Bibit, Agree, Javelin</p>	 <p><b>PROWL</b> Herbicide</p> <p>Do Not Enter For  <b>12 hrs.</b></p> <p>Level of Toxicity  <b>Caution</b></p>	 <p><b>MH-30</b> Growth Regulator</p> <p>Do Not Enter For  <b>12 hrs.</b></p> <p>Level of Toxicity  <b>Caution</b></p> <p>Other Product Names: Fair 1, Fair 30, sucker Stuf</p>	 <p><b>PRIME +</b> Growth Regulator</p> <p>Do Not Enter For  <b>24 hrs.</b></p> <p>Level of Toxicity  <b>Danger</b></p>	 <p><b>PREP</b> Ripening Agent</p> <p>Do Not Enter For  <b>48 hrs.</b></p> <p>Level of Toxicity  <b>Danger</b></p> <p>Other Product Names: Superfol</p>
 <p><b>ORTHENE<sup>+</sup></b> Insecticide</p> <p>Do Not Enter For  <b>24 hrs.</b></p> <p>Level of Toxicity  <b>Caution</b></p> <p>Admire (Provado) and Orthene are also used in field control.</p>	 <p><b>LANNATE</b> Insecticide</p> <p>Do Not Enter For  <b>48 hrs.</b></p> <p>Level of Toxicity  <b>Danger</b>  <b>Poison</b></p>	 <p><b>THIODAN</b> Insecticide</p> <p>Do Not Enter For  <b>24 hrs.</b></p> <p>Level of Toxicity  <b>Danger</b>  <b>Poison</b></p> <p>Other Product Names: Phaser, Golden Leaf</p>	 <p><b>RIDOMIL GOLD EC</b> Fungicide</p> <p>Do Not Enter For  <b>48 hrs.</b></p> <p>Level of Toxicity  <b>Warning</b></p>	 <p><b>BUTRALIN</b> Growth Regulator</p> <p>Do Not Enter For  <b>12 hrs.</b></p> <p>Level of Toxicity  <b>Danger</b></p>	 <p><b>OFFSHOOT T</b> Growth Regulator</p> <p>Do Not Enter For  <b>24 hrs.</b></p> <p>Level of Toxicity  <b>Warning</b></p> <p>Other Product Names: Fair 85, Sucker Fluct</p>	

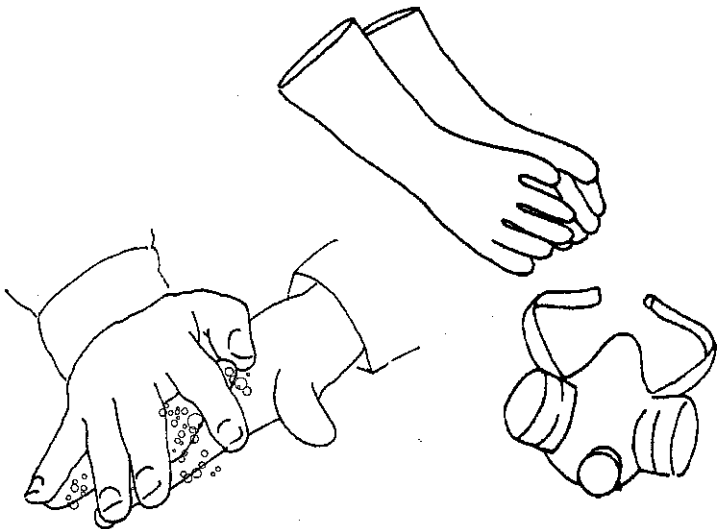
Always refer to the pesticide label for current toxicity and re-entry interval (REI) information.

LEVEL OF TOXICITY		
<p><b>1 Caution</b></p>  <p>Slightly toxic, less than one pint can kill an adult.</p>	<p><b>2 Warning</b></p>  <p>Moderately toxic, less than two tablespoons can kill an adult.</p>	<p><b>3 Danger</b></p>  <p>Highly toxic, less than one teaspoon can kill an adult.</p>

## Health and Safety Tips

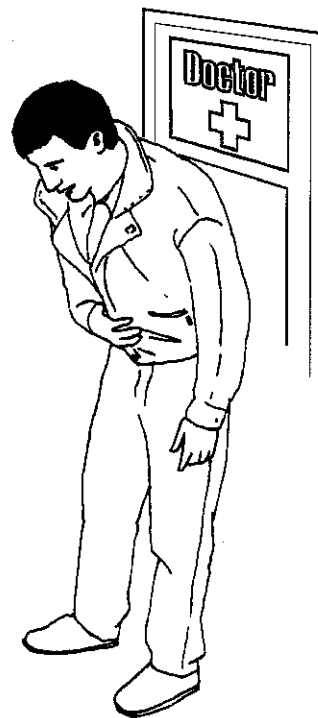
*Pesticide residues remain in fields after the pesticides have been applied. Therefore, you should **always**:*

- 1 Wear clothing that covers the skin: a long-sleeved shirt, long pants, socks, and shoes. A hat, handkerchief, and gloves are also recommended.
- 2 Wash your hands before eating, drinking, or smoking; before chewing gum or tobacco; and before using the restroom because there could be pesticide residues on your hands. Do not eat or smoke in treated fields.
- 3 Use a clean cloth to wipe sweat from your brow. Avoid scratching or wiping your face with your hand or shirt sleeve.
- 4 Wash your work clothes before wearing them again. When washing your work clothes, separate them from your family's laundry so that you do not contaminate it.



*If you are going to mix or apply pesticides or enter a treated field before the re-entry period has ended, you should **always**:*

- 1 Know that entry into treated areas before the Restricted Entry Interval (the period of time you must wait before re-entering a treated field) has ended is **only** allowed for some tasks, as described in the Worker Protection Standard.
- 2 Know the chemical and its associated hazards. Each pesticide has different instructions, toxicity, and precautions (see figure).
- 3 Read and follow the instructions listed on the pesticide label. If you do not understand the label instructions, ask someone to explain them to you.
- 4 Wear the Personal Protective Equipment listed on the pesticide label. This may include clothing that covers your skin, chemical-resistant gloves, and a respirator.



*When working with pesticides or in fields in which pesticides have been applied, you should remember:*

- 1 **Never** eat, drink, or smoke in recently treated fields or if you have handled pesticide containers.
- 2 **Never** re-use empty pesticide containers for any purpose. For example, do not use pesticide containers as water jugs, laundry basins, or trash cans.
- 3 **Never** drink, bathe, or wash food or clothing in irrigation ditches, which may contain pesticide residues from treated fields.



## Conditions Confused With Pesticide Poisoning

**Green tobacco sickness**—Some people working with tobacco become sick when the nicotine from wet tobacco leaves is absorbed directly into their skin. Symptoms of green tobacco sickness are similar to those caused by heat stress or exposure to pesticides and can include:

- ① nausea and vomiting
- ② weakness and dizziness
- ③ stomach cramps
- ④ difficulty breathing
- ⑤ paleness and excessive sweating
- ⑥ headache

Symptoms of green tobacco sickness can start 1 to 2 hours after beginning work and can last for 12 to 24 hours.

**Heat stress**—People may become sick with heat stress when they work in extremely hot, humid weather, especially if they are not drinking enough water. Heat stress occurs when your body is overworked and exposed to more heat than it can tolerate. Heat stress is not caused by exposure to pesticides, but the symptoms are similar to those caused by pesticide exposure or green tobacco sickness. The symptoms of heat stress include:

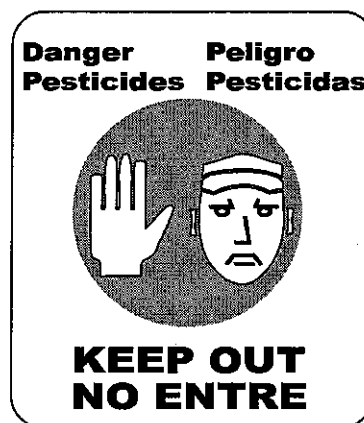
- ① nausea and vomiting
- ② weakness and dizziness
- ③ severe thirst and dry mouth
- ④ confusion or slurred speech
- ⑤ excessive sweating (or lack of sweating)
- ⑥ headache and chills

**Seek medical help.** Green tobacco sickness, heat stress, and pesticide poisoning can be hard to tell apart because the symptoms are very similar. Tell the doctor if you have been exposed to pesticides, what crop you have been working in, and how much water you have been drinking so that the doctor can determine the cause of your symptoms and treat you properly.

## Pesticide Law Protects Workers

*The Worker Protection Standard (WPS) is designed to protect agricultural workers who may be exposed to pesticides. Whenever a pesticide is applied, a grower must:*

- ① Provide basic training about pesticides and pesticide safety before field work begins. If you mix and apply pesticides, you must receive additional training, which includes information on how to follow the pesticide label and what personal protective clothing and equipment are required.
- ② Post in a central location the name of the pesticide (active ingredient(s) and EPA registration number), the location and description of the treated area, the time and date of the application, the Restricted Entry Interval (REI—the period of time you must wait before re-entering a treated field), and emergency medical information. The following are the **only** conditions under which you can enter a treated field before the REI has ended: when performing certain WPS-approved tasks and when you have had special training and wear special protective clothing and equipment.
- ③ Provide water, soap, and paper towels in the field, or within ¼ mile of the field, so that you can wash your hands or body, if necessary.
- ④ Take you to the doctor, hospital, or migrant health clinic if you become sick because of working with pesticides.
- ⑤ Not retaliate, fire, or harass you for asking for your legal right to know or for reporting a violation to the NC Department of Agriculture and Consumer Services or the NC Department of Labor. If you report a violation, you do not have to give your name.



## Health Emergencies:

For any type of Emergency, call 911\*

To obtain information about any poison, including pesticides, call the  
North Carolina Poison Control Center at 1-800-848-6946\* (toll free)

<i>The nearest emergency medical facility (hospital) is:</i>	
Name	_____
Street	_____
City	_____
Telephone Number	_____

### Questions and Violations:

- 1. The agency responsible for enforcing the Pesticide Law and providing any type of information on pesticides:  
North Carolina Department of Agriculture and Consumer Services, Pesticide Section . . . . 919-733-3556 \*
- 2. The agency responsible for enforcing the laws concerning health and safety conditions in labor camps and in fields:  
North Carolina Department of Labor . . . . 1-800-522-6762\* (toll free)  
Agricultural Safety and Health Section . . . . 919-733-8731\*
- 3. If you have any questions on how pesticides may affect your health, call:  
North Carolina Department of Health and Human Services, Occupational  
and Environmental Epidemiology Section . . . . 919-733-3410\*

\*Spanish is spoken

### FOR FURTHER INFORMATION

Other crop-specific publications in the *Pesticides & Human Health* series include:  
Christmas Trees, Cucumbers, Sweet Potatoes, Green Peppers, Apples.  
Contact the NC Cooperative Extension Service Center in your county  
for copies or for information on pesticide training.



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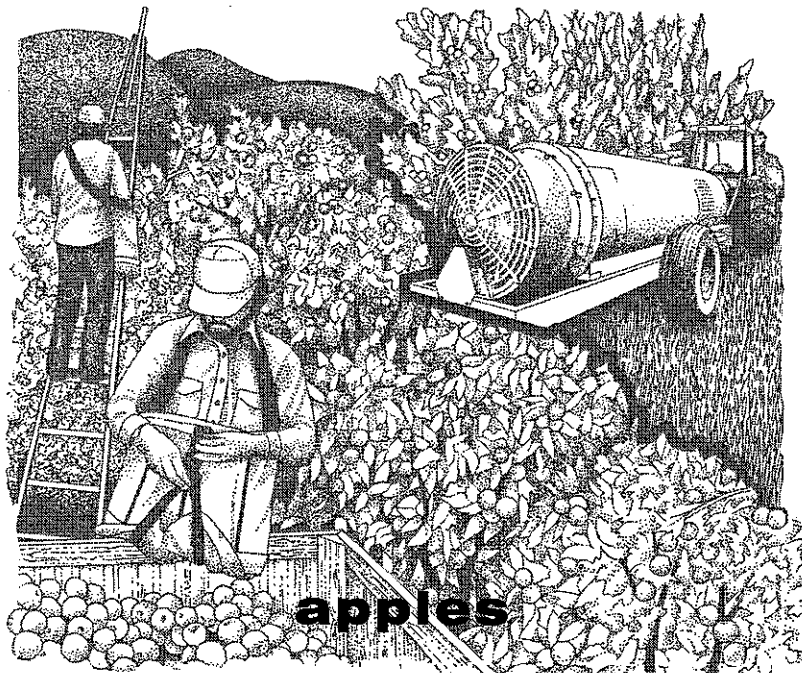
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# PESTICIDES & Human Health

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Throughout the world, pesticides are used to produce food, fiber, and forest products. They are designed to kill specific pests, cure diseases, and to regulate plant growth. However, as an agricultural worker, you may be exposed to pesticide residues through daily crop maintenance and harvest procedures—or to the pesticides themselves during their application or by accident. Such exposure may be harmful to your health.



## How Can Pesticides Enter Your Body?

Pesticides are used in various forms: powders, liquids, pellets, granules, sprays, and gases (fumigants). Once pesticides are applied, residues may be found in soils, on plants, on harvested products, on application equipment, in water and irrigation canals, in pesticide storage areas, and on your clothes. Pesticides can enter your body in three ways:

By **swallowing** the chemical. You can ingest pesticide residues if you do not wash your hands before you eat, smoke, chew gum, or chew tobacco.

By **breathing** pesticide dust or fumes through your nose or mouth.

By **absorbing** the chemical through your skin or eyes. Spills, splashes, and clothing contaminated by pesticide residues are sources of exposure. Failing to wash your hands before you use the restroom increases your risk of exposure; so do open cuts or inadequate protective clothing and equipment.

## Short-Term Poisoning Symptoms

One or more of these symptoms may indicate that you are experiencing pesticide poisoning.

- 1 nausea, vomiting, diarrhea
- 2 chest pain, coughing
- 3 difficulty breathing
- 4 excessive sweating
- 5 headache
- 6 eye, skin, throat irritation
- 7 itching, skin rash
- 8 blurred vision
- 9 small pupils
- 10 stomach/muscle cramps
- 11 drooling (mouth or nose)
- 12 weakness, dizziness
- 13 jumpiness, edginess

## Potential Long-Term Health Effects

Even if you have not experienced symptoms of short-term pesticide poisoning, long-term exposure (months or years) to even small amounts of **some** pesticides may cause any of the following health conditions:

- 1 allergies
- 2 skin damage and irritation
- 3 nervous system damage
- 4 cancer
- 5 birth defects
- 6 reproductive problems (sterility or miscarriage)



## First Aid Tips




If you have pesticide poisoning symptoms, **immediately**:

- 1 Leave the site of exposure. Wash all exposed areas with soap and plenty of water; change your clothes.
- 2 Tell your employer; if you cannot do so, ask someone to do it for you.
- 3 Call 911 or other emergency medical personnel. Go to the nearest doctor, hospital, or migrant health clinic. Get help; do not drive yourself.
- 4 Follow the first-aid instructions on the pesticide label. If you do not have the label or do not understand it, ask someone to get it or explain it to you.
- 5 If you get pesticides in your eyes, rinse them with clean water for 15 minutes.
- 6 If you inhale fumes, get to fresh air or an uncontaminated area; sit down, remain calm, and breathe as normally as possible.
- 7 If you swallow pesticides, follow the first-aid instructions on the pesticide label.
- 8 Tell the doctor that you have been exposed to pesticides; provide the pesticide name and label.

# Names and Application Times of the Most Common Apple Pesticides

Dormancy Through Bloom		Petiole Fall Through Harvest				Post-harvest
<b>LORSBAN</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity Ⓦ Warning	<b>DIMETHOATE</b> *Other product names: Dyon Insecticide Do Not Enter For <b>48 hrs.</b> Level of Toxicity Ⓦ Warning	<b>GUTHION*</b> *Other product names: Azinphos-M Insecticide Do Not Enter For <b>48 hrs.</b> Level of Toxicity Ⓝ Danger Ⓣ Poison	<b>LORSBAN</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity Ⓦ Warning	<b>DIMETHOATE*</b> *Other product names: Dyon Insecticide Do Not Enter For <b>48 hrs.</b> Level of Toxicity Ⓦ Warning	<b>IMIDAN</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity Ⓦ Warning	<b>GRAMOXONE-EXTRA</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Danger Ⓣ Poison
<b>ROUNDUP ULTRA</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution	<b>CAPTAN*</b> *Other product names: Captec Fungicide Do Not Enter For <b>96 hrs.</b> Level of Toxicity Ⓝ Danger	<b>SEVIN</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution	<b>ROUNDUP ULTRA</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution	<b>PRINCEP*</b> *Other product names: Simazine Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution	<b>BENLATE 50W</b> Fungicide Do Not Enter For <b>24 hrs.</b> Level of Toxicity Ⓝ Caution	<b>ROUNDUP ULTRA</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution
<b>RUBIGAN IE</b> Fungicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓦ Warning	<b>DITHANE DF*</b> *Other product names: Manzate, Penncozeb Fungicide Do Not Enter For <b>24 hrs.</b> Level of Toxicity Ⓝ Caution	<b>CAPTAN*</b> *Other product names: Captec Fungicide Do Not Enter For <b>96 hrs.</b> Level of Toxicity Ⓝ Danger	<b>DITHANE DF*</b> *Other product names: Manzate, Penncozeb Fungicide Do Not Enter For <b>24 hrs.</b> Level of Toxicity Ⓝ Caution	<b>ZIRAM</b> Fungicide Do Not Enter For <b>48 hrs.</b> Level of Toxicity Ⓝ Danger	<b>TOPSIN-M 70W</b> Fungicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution	<b>PRINCEP*</b> *Other product names: Simazine Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity Ⓝ Caution

Always refer to the pesticide label for current toxicity and re-entry interval (REI) information.

LEVEL OF TOXICITY		
Ⓝ Caution	Ⓦ Warning	Ⓝ Danger
 Slightly toxic; less than one pint can kill an adult.	 Moderately toxic; less than two tablespoons can kill an adult.	 Highly toxic; less than one teaspoon can kill an adult.

## Health and Safety Tips

Pesticide residues remain in fields after the pesticides have been applied. Therefore, you should always:

- Wear clothing that covers the skin: a long-sleeved shirt, long pants, socks, and shoes. A hat, handkerchief, and gloves are also recommended.
- Wash your hands before eating, drinking, or smoking; before chewing gum or tobacco; and before using the restroom because there could be pesticide residues on your hands. Do not eat or smoke in treated fields.
- Use a clean cloth to wipe sweat from your brow. Avoid scratching or wiping your face with your hand or shirt sleeve.
- Wash your work clothes before wearing them again. When washing your work clothes, separate them from your family's laundry so that you do not contaminate it.

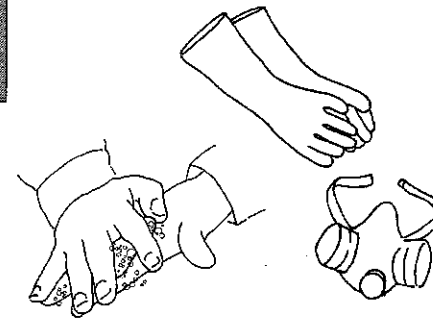
If you are going to mix or apply pesticides or enter a treated field before the re-entry period has ended, you should always:

- Know that entry into treated areas before the Restricted Entry Interval (the period of time you must wait before re-entering a treated field) has ended is **only** allowed for some tasks, as described in the Worker Protection Standard.
- Know the chemical and its associated hazards. Each pesticide has different instructions, toxicity, and precautions (see figure).
- Read and follow the instructions on the pesticide label. If you do not understand the label instructions, ask someone to explain them to you.
- Wear the Personal Protective Equipment listed on the pesticide label. This may include clothing that covers your skin, chemical-resistant gloves, and a respirator.



When working with pesticides or in fields in which pesticides have been applied, you should remember:

- Never eat, drink, or smoke in recently treated fields or if you have handled pesticide containers.
- Never re-use empty pesticide containers for any purpose. For example, do not use pesticide containers as water jugs, laundry basins, or trash cans.
- Never drink from, bathe in, or wash food or clothing in irrigation ditches, which may contain pesticide residues from treated fields.



## Other Health and Safety Concerns

### Injury or illness due to environmental exposures—

Work in apples is often performed in environmental conditions that may result in physical injury or illness. Some injuries may be serious enough to result in loss of life, limbs, or work time. Always wear proper clothing and use protective equipment to help protect yourself from injuries and illness resulting from the following:

- 1 excessive sunlight
- 2 extremely hot or cold weather
- 3 residues from farm chemicals such as fertilizers, pesticides, cleaners, and fuels
- 4 cuts, scrapes, and punctures from trees and branches
- 5 irritations or allergies from contact with natural plant substances such as poison ivy
- 6 biting or stinging insects such as bees, wasps, hornets, and ants or other animals
- 7 uneven terrain and stumps or holes left in the ground from previously harvested trees, which may be covered by grass or weeds
- 8 hazardous equipment such as tractors, trailers, sprayers, chain saws, pruning equipment, and ladders.

**Seek medical help** if a serious injury occurs. Immediately call 911 or other emergency medical personnel and your supervisor. Serious injuries caused by machinery should always be treated by a doctor. In accidents involving machinery, turn the equipment off if it is still running. Do not move the victim. Determine whether the victim is breathing and resuscitate, if necessary. Apply a bandage with pressure to stop any bleeding.

**Training and prevention**—Leave all equipment guards in place and keep them in working order. Workers should:

- 1 never operate any equipment until you receive proper training
- 2 never wear loose-fitting clothing that can be caught in moving parts of machinery

**Heat stress**—People may become sick with heat stress when they work in extremely hot, humid weather, especially if they are not drinking enough water. Heat stress occurs when your body is overworked and exposed to more heat than it can tolerate. Heat stress is not caused by exposure to pesticides, but the symptoms are similar to those caused by pesticide exposure. The symptoms of heat stress include:

- 1 nausea and vomiting
- 2 weakness and dizziness
- 3 severe thirst and dry mouth
- 4 confusion or slurred speech
- 5 excessive sweating (or lack of sweating)
- 6 headache and chills

## Pesticide Law Protects Workers

*The Worker Protection Standard (WPS) is designed to protect agricultural workers who may be exposed to pesticides. Whenever a pesticide is applied, a grower must:*

- 1 Provide basic training about pesticides and pesticide safety before field work begins. If you mix and apply pesticides, you must receive additional training, which includes information on how to follow the pesticide label and what personal protective clothing and equipment are required.
- 2 Post in a central location the name of the pesticide (active ingredient(s) and EPA registration number), the location and description of the treated area, the time and date of the application, the Restricted Entry Interval (REI—the period of time you must wait before re-entering a treated field), and emergency medical information. The following are the **only** conditions under which you can enter a treated field before the REI has ended: when performing certain WPS-approved tasks and when you have had special training and wear special protective clothing and equipment.
- 3 Provide water, soap, and paper towels in the field, or within ¼ mile of the field, so that you can wash your hands or body if necessary.
- 4 Take you to the doctor, hospital, or migrant health clinic if you become sick because of working with pesticides.
- 5 Not retaliate, fire, or harass you for asking for your legal right to know or for reporting a violation to the N.C. Department of Agriculture and Consumer Services or the N.C. Department of Labor. If you report a violation, you do not have to give your name.



Tell the doctor if you have been exposed to pesticides, what crop you have been working in, and how much water you have been drinking so that the doctor can determine the cause of your symptoms and treat you properly.

## Health Emergencies:

For any type of emergency, call 911\*

For information about any poison, including pesticides, call the North Carolina Poison Control Center at 1-800-848-6946\* (toll free)

The nearest emergency medical facility (hospital) is:

Name	_____
Street	_____
City	_____
Telephone Number	_____

### Questions and Violations:

- 1 The agency responsible for enforcing the Pesticide Law and providing information on pesticides:  
North Carolina Department of Agriculture and Consumer Services, Pesticide Section . . . . 919-733-3556\*
- 2 The agency responsible for enforcing the laws concerning health and safety conditions in labor camps and in fields:  
North Carolina Department of Labor . . . . 1-800-522-6762\* (toll free)  
Agricultural Safety and Health Section . . . . 919-733-8731\*
- 3 If you have any questions on how pesticides may affect your health, call:  
North Carolina Department of Health and Human Services, Occupational and Environmental Epidemiology Section . . . . 919-733-3410\*

\*Spanish is spoken

### FOR FURTHER INFORMATION

Other crop-specific publications in the *Pesticides & Human Health* series include: Christmas Trees, Cucumbers, Sweet Potatoes, Green Peppers, and Tobacco. Contact the N.C. Cooperative Extension Service center in your county for copies or for information on pesticide training.

Prepared by

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*The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical.*

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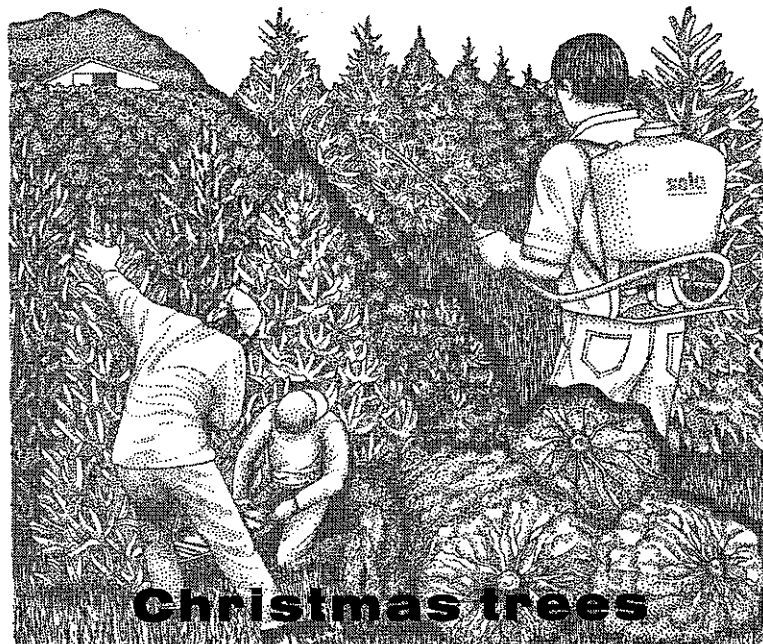
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# PESTICIDES & Human Health

As an agricultural worker, your health and safety are important. This fact sheet is intended for Christmas tree workers. It is part of a series focusing on crops that require intensive hand labor.

Throughout the world, pesticides are used to produce food, fiber, and forest products. They are designed to kill specific pests, cure diseases, and to regulate plant growth. However, as an agricultural worker, you may be exposed to pesticide residues through daily crop maintenance and harvest procedures—or to the pesticides themselves during their application or by accident. Such exposure may be harmful to your health.



## How Can Pesticides Enter Your Body?

Pesticides are used in various forms: powders, liquids, pellets, granules, sprays, and gases (fumigants). Once pesticides are applied, residues may be found in soils, on plants, on harvested products, on application equipment, in water and irrigation canals, in pesticide storage areas, and on your clothes. Pesticides can enter your body in three ways:

By **swallowing** the chemical. You can ingest pesticide residues if you do not wash your hands before you eat, smoke, chew gum, or chew tobacco.

By **breathing** pesticide dust or fumes through your nose or mouth.

By **absorbing** the chemical through your skin or eyes. Spills, splashes, and clothing contaminated by pesticide residues are sources of exposure. Failing to wash your hands before you use the restroom increases your risk of exposure; so do open cuts or inadequate protective clothing and equipment.

## Short-Term Poisoning Symptoms

One or more of these symptoms may indicate that you are experiencing pesticide poisoning.

- 1 nausea, vomiting, diarrhea
- 2 chest pain, coughing
- 3 difficulty breathing
- 4 excessive sweating
- 5 headache
- 6 eye, skin, throat irritation
- 7 itching, skin rash
- 8 blurred vision
- 9 small pupils
- 10 stomach/muscle cramps
- 11 drooling (mouth or nose)
- 12 weakness, dizziness
- 13 jumpiness, edginess

## Potential Long-Term Health Effects

Even if you have not experienced symptoms of short-term pesticide poisoning, long-term exposure (months or years) to even small amounts of some pesticides may cause any of the following health conditions:

- 1 allergies
- 2 skin damage and irritation
- 3 nervous system damage
- 4 cancer
- 5 birth defects
- 6 reproductive problems (sterility or miscarriage)



## First Aid Tips

If you have pesticide poisoning symptoms, immediately:

- 1 Leave the site of exposure. Wash all exposed areas with soap and plenty of water; change your clothes.
- 2 Tell your employer; if you cannot do so, ask someone to do it for you.
- 3 Call 911 or other emergency medical personnel. Go to the nearest doctor, hospital, or migrant health clinic. Get help; do not drive yourself.
- 4 Follow the first-aid instructions on the pesticide label. If you do not have the label or do not understand it, ask someone to get it or explain it to you.
- 5 If you get pesticides in your eyes, rinse them with clean water for 15 minutes.
- 6 If you inhale fumes, get to fresh air or an uncontaminated area; sit down, remain calm, and breathe as normally as possible.
- 7 If you swallow pesticides, follow the first-aid instructions on the pesticide label.
- 8 Tell the doctor that you have been exposed to pesticides; provide the pesticide name and label.

# Names and Application Times of the Most Common Christmas Tree Pesticides

Planting and Early-Season Maintenance (January-June)			Shearing and Mid-Season Maintenance (July-October)		Harvest (November-December)	The Following Pesticides Are Often Applied At Any Time From Planting and Early-Season Maintenance Through Shearing, Mid-Season Maintenance, and Harvest (January-December)					
<p><b>DI-SYSTEM 15G</b> Insecticide Do Not Enter For <b>48 hrs.</b> Level of Toxicity <b>③ Danger</b> <b>☠ Poison</b></p>	<p><b>LORSBAN 4E</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>② Warning</b></p>	<p><b>JOUST</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>① Caution</b></p>	<p><b>JOUST</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>① Caution</b></p>	<p><b>LORSBAN 4E</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>② Warning</b></p>	<p><b>LINDANE 20EC</b> Insecticide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>① Caution</b></p>	<p><b>ASANA XL</b> Insecticide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>② Warning</b></p>	<p><b>GOAL 2EC</b> Herbicide Do Not Enter For <b>24 hrs.</b> Level of Toxicity <b>② Warning</b></p>	<p><b>STINGER</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>① Caution</b></p>	<p><b>VANTAGE</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>① Caution</b></p>	<p><b>PRINCEP 4L*</b> Herbicide Do Not Enter For <b>12 hrs.</b> Level of Toxicity <b>① Caution</b></p> <p><small>*Other product names: Simazine 4L</small></p>	<p><b>ROUNDUP*</b> Herbicide Do Not Enter For <b>4 hrs.</b> Level of Toxicity <b>① Caution</b></p> <p><small>*Other product names: Roundup Pro, Accord</small></p>

Always refer to the pesticide label for current toxicity and re-entry interval (REI) information.

LEVEL OF TOXICITY		
<b>① Caution</b>  Slightly toxic; less than one pint can kill an adult.	<b>② Warning</b>  Moderately toxic; less than two tablespoons can kill an adult.	<b>③ Danger</b>  Highly toxic; less than one teaspoon can kill an adult.

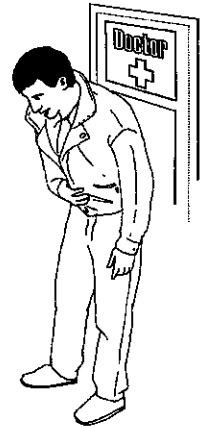
## Health and Safety Tips

Pesticide residues remain in fields after the pesticides have been applied. Therefore, you should always:

- 1 Wear clothing that covers the skin: a long-sleeved shirt, long pants, socks, and shoes. A hat, handkerchief, and gloves are also recommended.
- 2 Wash your hands before eating, drinking, or smoking; before chewing gum or tobacco; and before using the restroom because there could be pesticide residues on your hands. Do not eat or smoke in treated fields.
- 3 Use a clean cloth to wipe sweat from your brow. Avoid scratching or wiping your face with your hand or shirt sleeve.
- 4 Wash your work clothes before wearing them again. When washing your work clothes, separate them from your family's laundry so that you do not contaminate it.

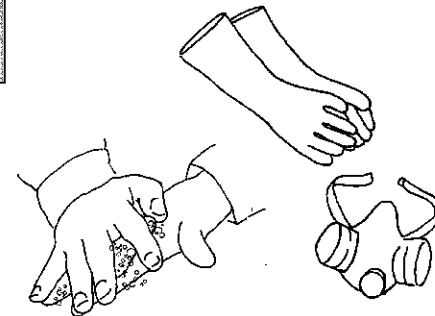
If you are going to mix or apply pesticides or enter a treated field before the re-entry period has ended, you should always:

- 1 Know that entry into treated areas before the Restricted Entry Interval (the period of time you must wait before re-entering a treated field) has ended is **only** allowed for some tasks, as described in the Worker Protection Standard.
- 2 Know the chemical and its associated hazards. Each pesticide has different instructions, toxicity, and precautions (see figure).
- 3 Read and follow the instructions on the pesticide label. If you do not understand the label instructions, ask someone to explain them to you.
- 4 Wear the Personal Protective Equipment listed on the pesticide label. This may include clothing that covers your skin, chemical-resistant gloves, and a respirator.



When working with pesticides or in fields in which pesticides have been applied, you should remember:

- 1 Never eat, drink, or smoke in recently treated fields or if you have handled pesticide containers.
- 2 Never re-use empty pesticide containers for any purpose. For example, do not use pesticide containers as water jugs, laundry basins, or trash cans.
- 3 Never drink from, bathe in, or wash food or clothing in irrigation ditches, which may contain pesticide residues from treated fields.



## Other Health and Safety Concerns

**Injury or illness due to environmental exposures—** Christmas tree work is often performed in environmental conditions that may result in physical injury or illness. Some injuries may be serious enough to result in loss of life, limbs, or work time. Always wear proper clothing and use protective equipment to help protect yourself from injuries and illness resulting from the following:

- 1 excessive sunlight
- 2 extremely hot or cold weather
- 3 residues from farm chemicals such as fertilizers, pesticides, cleaners, and fuels
- 4 cuts, scrapes, and punctures from needles and branches
- 5 irritations or allergies from contact with natural plant substances such as resin
- 6 biting or stinging insects such as bees, wasps, hornets, and ants or other animals
- 7 uneven terrain and stumps or holes left in the ground from previously harvested trees, which may be covered by grass or weeds
- 8 hazardous equipment such as tractors, balers, trailers, conveyors, chain saws, shearing knives, shearing machines, or pruners.

**Seek medical help** if a serious injury occurs. Immediately call 911 or other emergency medical personnel and your supervisor. Serious injuries caused by machinery should always be treated by a doctor. In accidents involving machinery, turn the equipment off if it is still running. Do not move the victim. Determine whether the victim is breathing and resuscitate, if necessary. Apply a bandage with pressure to stop any bleeding.

**Training and prevention—**Leave all equipment guards in place and keep them in working order. Workers should:

- 1 never operate any equipment until you receive proper training
- 2 never work on the same row or adjacent rows of trees when using shearing knives, shearing machines, or long-handled pruners
- 3 never wear loose-fitting clothing that can be caught in moving parts of machinery

**Heat stress—**People may become sick with heat stress when they work in extremely hot, humid weather, especially if they are not drinking enough water. Heat stress occurs when your body is overworked and exposed to more heat than it can tolerate. Heat stress is not caused by exposure to pesticides, but the symptoms are similar to those caused by pesticide exposure. The symptoms of heat stress include:

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- 4 confusion or slurred speech
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- 4 Take you to the doctor, hospital, or migrant health clinic if you become sick because of working with pesticides.
- 5 Not retaliate, fire, or harass you for asking for your legal right to know or for reporting a violation to the N.C. Department of Agriculture and Consumer Services or the N.C. Department of Labor. If you report a violation, you do not have to give your name.



**Tell the doctor** if you have been exposed to pesticides, what crop you have been working in, and how much water you have been drinking so that the doctor can determine the cause of your symptoms and treat you properly.

## Health Emergencies:

**For any type of emergency, call 911\***

For information about any poison, including pesticides, call the North Carolina Poison Control Center at 1-800-848-6946\* (toll free)

The nearest emergency medical facility (hospital) is:

Name	_____
Street	_____
City	_____
Telephone Number	_____

### Questions and Violations:

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Agricultural Safety and Health Section . . . . 919-733-8731\*
- 3 If you have any questions on how pesticides may affect your health, call:  
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\*Spanish is spoken

#### FOR FURTHER INFORMATION

Other crop-specific publications in the Pesticides & Human Health series include: Tobacco, Cucumbers, Sweet Potatoes, Green Peppers, and Apples. Contact the N.C. Cooperative Extension Service center in your county for copies or for information on pesticide training.

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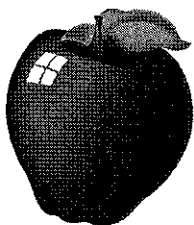
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# APPLE INSECTICIDES





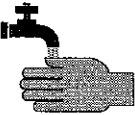


Washington State Department of Agriculture

## Year 2002

This sheet lists some products used to control insects on apple trees. The health symptoms listed may be caused by things other than pesticides. If you feel sick after exposure to pesticides, contact a doctor or clinic.

<b>Pesticide</b> (Brand Name)  <b>highly toxic</b>	<b>Product Use Changes</b> <i>Read the Label!</i> <b>DO NOT ENTER TREATED AREAS FOR:</b> Reentry intervals will vary by product	<b>Common Symptoms of Acute Insecticide Poisoning</b>
 Azinphosmethyl (Guthion)	 <b>2 Days</b> (minimum contact)  <b>3 Days</b> if less than 25 in. rain  <b>14 Days</b> (thin, harvest)	 <b>HEADACHES</b>  <b>VISION PROBLEMS</b>  <b>STOMACH ACHE</b>
Carbaryl (Sevin)	 <b>1/2 Day</b>  <b>12 hours</b>	 <b>VOMITING</b>  <b>BREATHING PROBLEMS</b>  <b>WEAKNESS</b>
Chlorpyrifos (Lorsban)	 <b>4 Days</b>	 <b>DIZZINESS</b>  <b>EXCESSIVE SWEATING</b>
Dimethoate (Cygon)	 <b>2 Days</b>	 <b>NOSE, EAR, OR THROAT IRRITATION</b>  <b>SKIN IRRITATION</b>
 Endosulfan (Thiodan)	 <b>1 Day</b>	
Esfenvalerate (Asana)	 <b>1 Day</b>	
 Oxamyl (Vydate)	 <b>2 Days</b>	
Phosmet (Imidan)	 <b>3 Days</b>	






**If you are exposed to a pesticide spray or drift:**

- Leave the area 
- Tell your employer 
- Immediately wash exposed skin with soap and lots of water 
- If you get pesticides in your eyes, rinse with clean water for 15 minutes 
- Change into clean clothes, wash work clothes separately from other clothes 

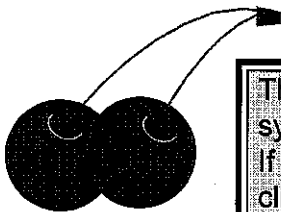
**Complaint Investigations:**

WSDA: Toll Free 1-877-301-4555  
 L&I: Toll Free 1-800-423-7233

**If you feel sick while working with pesticides:**

- Leave the area 
- Tell your employer you feel sick 
- Go to a doctor or clinic 
- Have someone go with you 
- Tell doctor the pesticide name. Your employer must provide this information 

**Emergency Pesticide Information:**  
 WA Poison Control Center 1-800-222-1222  
**Pesticide Related Health Concerns:**  
 DOH (Olympia) 360-236-3360









































# CHERRIES

This sheet lists some pesticides used on cherries. The health symptoms listed may be caused by things other than pesticides. If you feel sick after exposure to pesticides, contact a doctor or clinic.








Washington State  
Department of Agriculture

**Year 2002**

<b>Pesticide</b> (Brand Name)  <b>highly toxic</b>	<b>Product Use Changes</b> <i>Read the Label</i> <b>DO NOT ENTER TREATED AREAS FOR:</b> Reentry intervals will vary by product	<b>Common Symptoms of Acute Poisoning</b>
 Azinphosmethyl (Guthion)	 2 Days (minimum contact) 3 Days if less than 25 in. rain 14 Days (thin, harvest)	 HEADACHES  STOMACH ACHE  DIZZINESS  VOMITING  WEAKNESS  VISION PROBLEMS
Carbaryl (Sevin)	 1/2 Day 12 hours	 HEADACHES  STOMACH ACHE  DIZZINESS  WEAKNESS  EXCESSIVE SWEATING
Copper Hydroxide (Kocide)	 2 Days	 NOSE, EAR, OR THROAT IRRITATION  SKIN IRRITATION
Glyphosate (Roundup)	 1/6 Day 4 hours	 NOSE, EAR, OR THROAT IRRITATION  SKIN IRRITATION
Myclobutanil (Rally)	 1 Day	 NOSE, EAR, OR THROAT IRRITATION  SKIN IRRITATION
Oryzalin (Surflan)	 1 Day	 NOSE, EAR, OR THROAT IRRITATION  SKIN IRRITATION
 Paraquat (Gramoxone Extra)	 1 Day	 NOSE, EAR, OR THROAT IRRITATION  SKIN IRRITATION  HEADACHES  VISION PROBLEMS
Petroleum Distillate (Spray Oils)	 1/2 Day 12 hours	 NOSE, EAR, OR THROAT IRRITATION  SKIN IRRITATION  WEAKNESS  BREATHING PROBLEMS






**If you are exposed to a pesticide spray or drift:**

- Leave the area 
- Tell your employer 
- Immediately wash exposed skin with soap and lots of water 
- If you get pesticides in your eyes, rinse with clean water for 15 minutes 
- Change into clean clothes, wash work clothes separately from other clothes 

**Complaint Investigations:**

WSDA: Toll Free 1-877-301-4555  
L&I Toll Free 1-800-423-7233

**If you feel sick while working with pesticides:**

- Leave the area 
- Tell your employer you feel sick 
- Go to a doctor or clinic 
- Have someone go with you 
- Tell doctor the pesticide name. Your employer must provide this information 

**Emergency Pesticide Information:**  
WA Poison Control Center 1-800-222-1222  
**Pesticide Related Health Concerns:**  
DOH (Olympia) 360-236-3360









































# HOPS








Washington State  
Department of Agriculture

## Year 2002






This sheet lists some pesticides used on hops. The health symptoms listed may be caused by things other than pesticides. If you feel sick after exposure to pesticides, contact a doctor or clinic.

<b>Pesticide</b> (Brand Name)  <b>highly toxic</b>	<b>Product Use Changes</b> <i>Read the Label</i> <b>DO NOT ENTER</b> <b>TREATED AREAS FOR:</b>  <b>Reentry intervals will vary by product</b>	<b>Common Symptoms of Acute Poisoning</b>
Abamectin (Agri-Mek)	 <b>1/2 Day / 12 hours</b>	   
Bifenthrin (Brigade)	 <b>1 Day</b>	   
 Endothall (Des-I-Cate)	 <b>2 Days</b>	    
Imidacloprid (Provado)	 <b>1/2 Day / 12 hours</b>	 
Metalaxyl / Mefenozam (Ridomil Gold)	 <b>2 Days</b>	 
 Paraquat (Gramoxone Extra)	 <b>1 Day</b>	 
Propargite (Omite)	 <b>7 Days</b>	   
Sulfur	 <b>1 Day</b>	  

### If you are exposed to a pesticide spray or drift:

- Leave the area 
- Tell your employer 
- Immediately wash exposed skin with soap and lots of water 
- If you get pesticides in your eyes, rinse with clean water for 15 minutes 
- Change into clean clothes, wash work clothes separately from other clothes 

### If you feel sick while working with pesticides:

- Leave the area 
- Tell your employer you feel sick 
- Go to a doctor or clinic 
- Have someone go with you 
- Tell doctor the pesticide name. Your employer must provide this information 

### Complaint Investigations:

WSDA: Toll Free 1-877-301-4555  
L&I Toll Free 1-800-423-7233

**Emergency Pesticide Information:**  
WA Poison Control Center 1-800-222-1222  
**Pesticide Related Health Concerns:**  
DOH (Olympia) 360-236-3360