
UCLA La Kretz Botany Building
Paul Cline
Jul 2018
Share
Pesticide Safety Training
Required before beginning work in the Plant Growth Center (PGC) and repeated annually
Updated 1/5/2026
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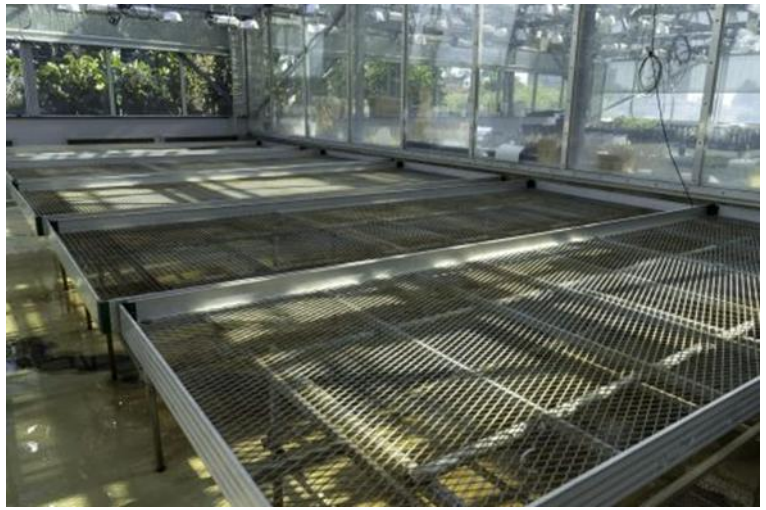
Outline

1. Introduction
2. FAQs
3. Integrated Pest Management (IPM)
4. UC IPM Policy
5. Research vs non-research use of pesticides
6. What is a pesticide?
7. PGC and pesticide safety
8. Understanding pesticide labels, types of pesticides
9. Responding to emergencies and pesticide illness
10. PGC growing systems
11. Questions?



Introduction

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PGC Greenhouse Manager

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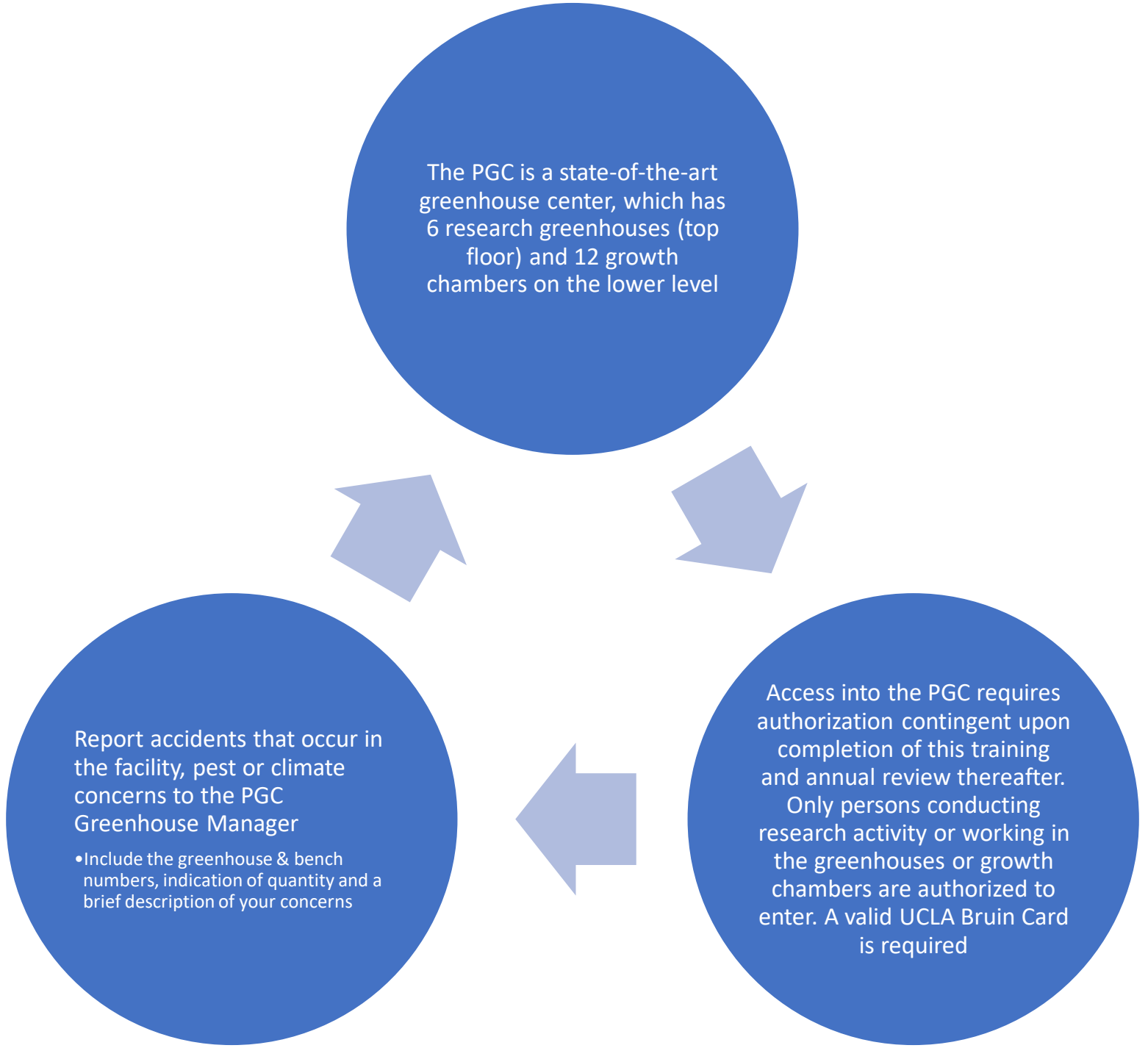
Javier Bermudez

PGC Greenhouse Assistant

Trained pesticide handler

Our top priorities:

1. Safety
2. Facilitating high-quality research
3. Efficiency in the PGC



PGC FAQs

1. Is this training required before starting work in the PGC and do I have to repeat it? **Answer:** Yes, please follow all links unless they are noted as "Suggested." This training is required to be completed before starting work in the PGC and needs to be repeated annually

2. What clothing is required in the PGC? **Answer:** Closed toe shoes and a shirt (or lab coat) with long sleeves are required when working in the facility. Personal protective equipment can be provided upon request

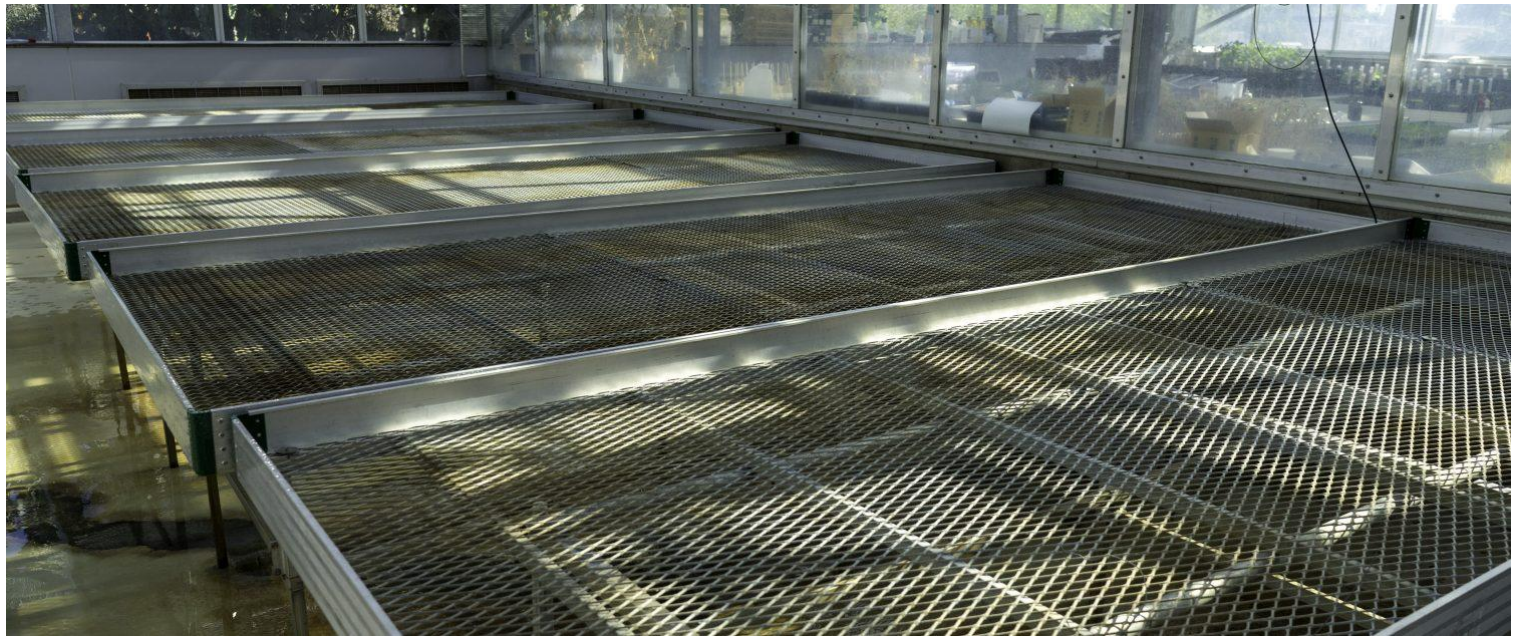
3. Can I eat in the greenhouses in the PGC? **Answer:** No, but water is allowed. If you need a place to store your items please ask the PGC staff

4. Can I bring non-research plants into the PGC? **Answer:** No this is not allowed because it can jeopardize research plants

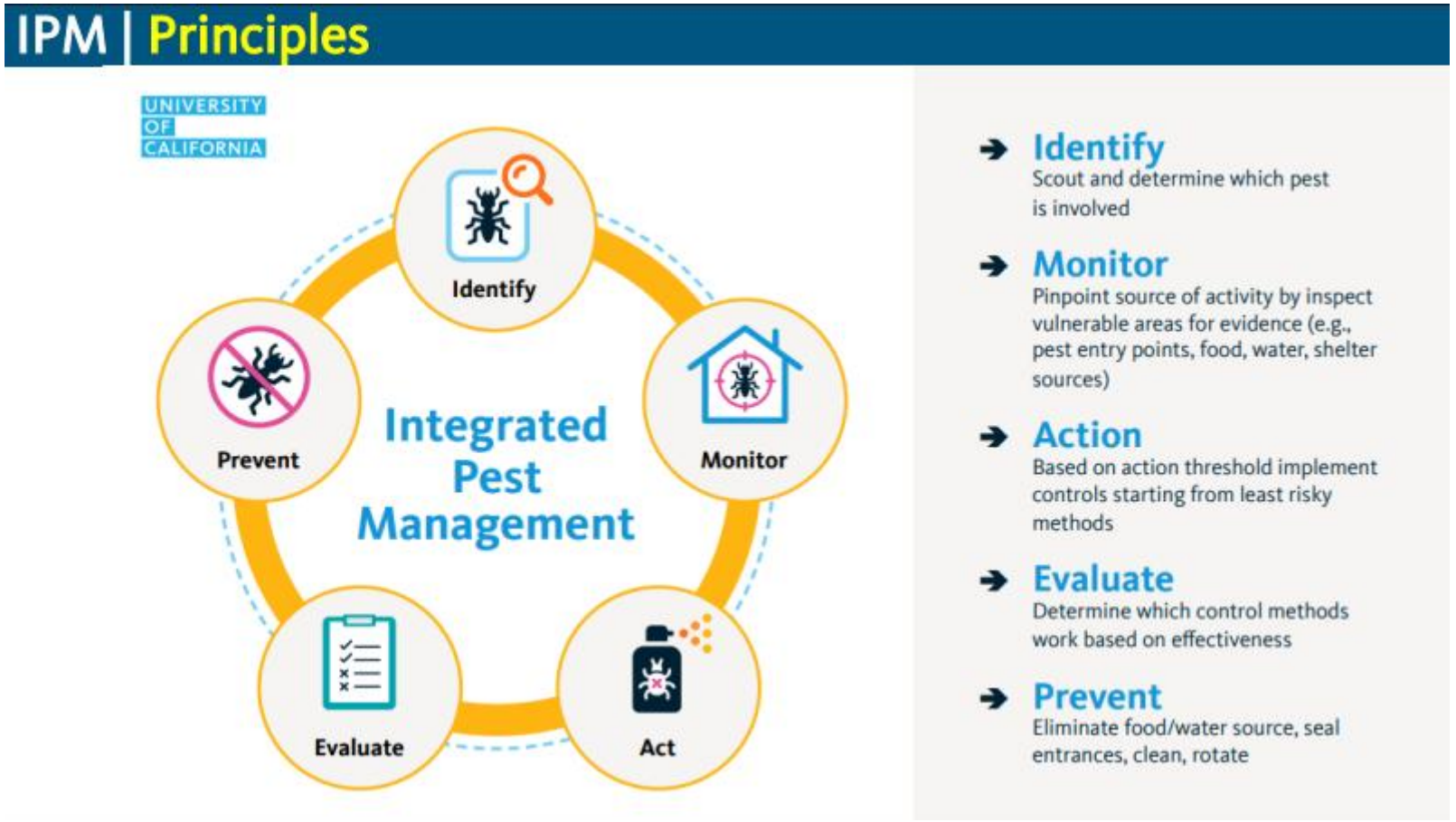
5. Are pesticides used in the PGC? **Answer:** Yes, in accordance with the UCLA, Los Angeles County Agricultural Commissioner, California Department of Pesticide Regulations and Federal laws, policies and guidelines

6. How do the facility lights and climate controls work? **Answer:** See slide titled "PGC Growing Systems"

7. Who is responsible for watering and plant maintenance in the PGC? **Answer:** You are responsible for communicating and coordinating your plants' needs and communicating them to PGC staff



Integrated Pest Management



California Sustainable Pest Management Roadmap

Suggested

https://www.cdpr.ca.gov/wp-content/uploads/2024/10/spm_roadmap.pdf

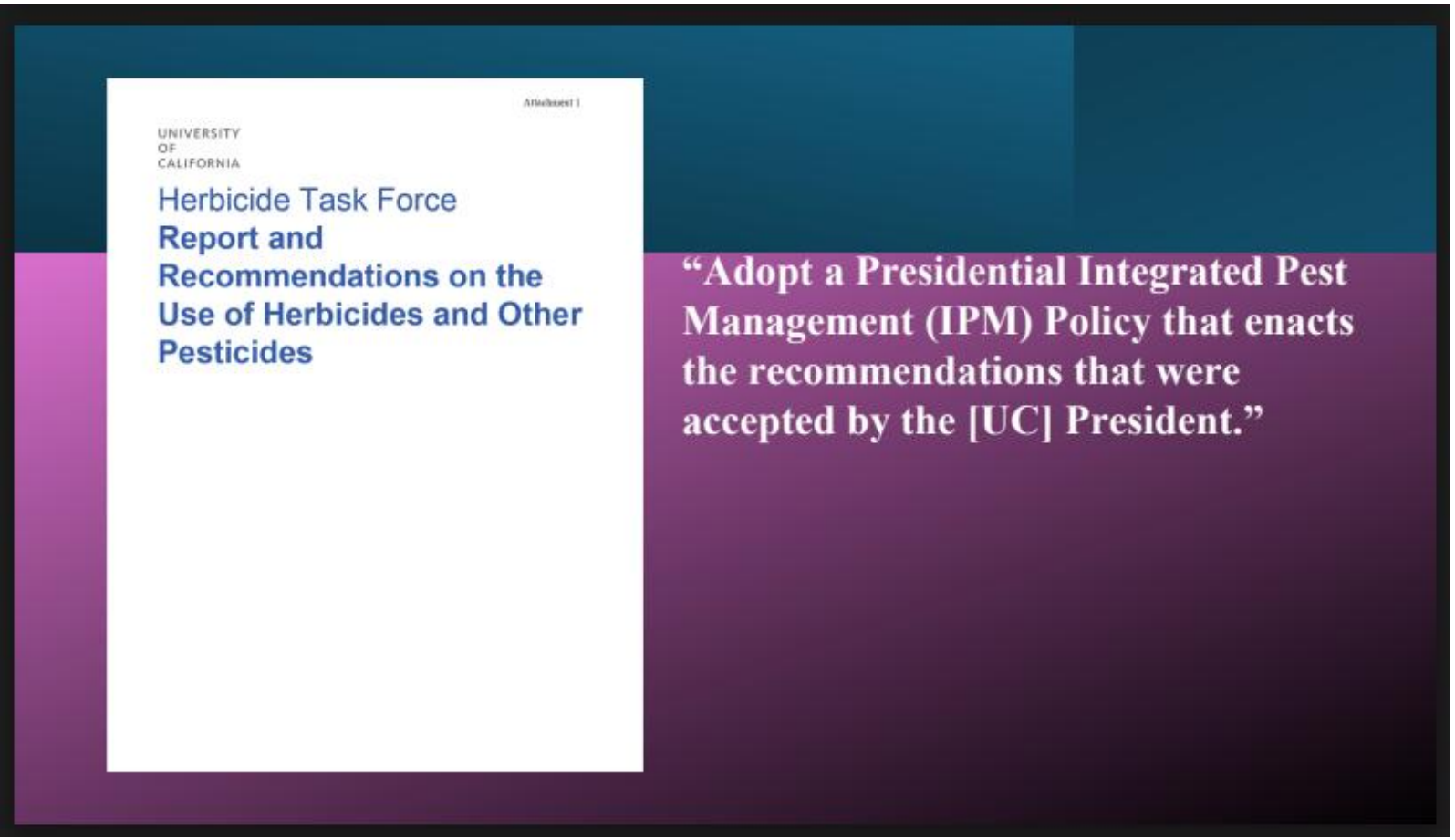
URBAN SUBGROUP

While most people associate pesticide use with agricultural settings, there is significant use and impact in urban settings. Based on limited current data, nonagricultural uses account for between 35-55 percent of pesticide sales (pounds sold), 16-19 percent of reported pesticide use (pounds applied primarily by licensed applicators), and 65-75 percent of reported pesticide-related illnesses.[2] DPR invited nine leaders to collaboratively develop guidance on where and how to focus DPR resources, as well as other recommendations for ways that DPR and other entities might support urban sustainable pest management in California.

APPROACH

The SPM Work Group and Urban Subgroup developed this report "Accelerating Sustainable Pest Management: A Roadmap for California," hereafter referred to as simply the "Roadmap," through focus groups, learning journeys, a systems assessment, stakeholder feedback, and months of dialogue. Leaders representing a wide range of interests in the system, including production agriculture, farmworker and rural communities, Tribes, urban communities, socially disadvantaged and historically marginalized communities, the pest control sector, chemical input companies, government, supply chain companies, academia, environmental sciences, public health, and technical assistance, were asked to think holistically and work collaboratively in developing a roadmap that would advance pest management in California.

UC IPM Policy



- "The University of California Presidential Policy on Integrated Pest Management (IPM) is…designed to manage and mitigate pest issues across UC …campuses…using environmentally responsible pest management strategies. The Policy emphasizes…the use of non-chemical strategies to minimize environmental impact, protect human health and ensure compliance with regulatory requirements."

Source: UC IPM Policy

UC IPM Policy

Required video

UC Pesticide Safety

Suggested reading

UC IPM FAQs

Research vs non-research use

1. Research use does NOT exempt researchers from any state, federal or UC requirements regarding safety and training. Research use per UC IPM is considered to be, “pesticides used as an evaluated treatment in a study or as part of the research design.”
2. “Research” applications must be communicated and documented for the safety of all PGC users and staff.
3. Pesticide application requests can be submitted to the PGC manager (nfoustmeyer@lifesci.ucla.edu).
4. The UC Pesticide Use Authorization (PUA) system is not required for pesticides used in the PGC.

What is a pesticide?

1. Herbicide
2. Insecticide
3. Fungicide
4. Bactericide
5. Nematicide, miticide, ovicide
6. Rooting hormone
7. Plant growth regulators
8. Wood preservatives
9. Repellants
10. Rodenticide
11. Kaolinite, zinc, sulfur, bovine milk, compost tea, dihydrogen monoxide, etc.
12. Any chemical(s) intended to control plants, their pests or their growing conditions

California Department of Pesticide Regulation

5 SAFETY TIPS FOR PESTICIDE HANDLERS

WHAT IS A PESTICIDE?

A pesticide is a chemical used to control or eliminate insects, rats, weeds or germs. Spray adjuvants are also pesticides in California. You must be at least 18 years old to handle pesticides in agriculture.

WHAT DOES A PESTICIDE HANDLER DO?

- Mixes, loads, or applies pesticides
- Repairs or cleans equipment used for pesticides
- Repairs or removes tarps on a field
- Handles unrinsed pesticide containers

Get trained before you handle pesticides: The law requires your employer to give you safety training every year in a way and a language that you understand. Training must happen before you begin working with pesticides, and anytime you work with new pesticides.

Tell your employer and get medical care if you think you are sick from pesticides: The law requires your employer to provide you with immediate transportation to the doctor if you think pesticides have made you sick at work. You will not have to pay for medical care if you get sick or hurt at work.

Use safety equipment to protect yourself at work: The pesticide label tells you what personal protective equipment (PPE) you need to wear to safely handle the pesticide. The law requires your employer to provide the label required PPE and show you how to use it correctly. Examples of PPE include gloves, goggles, respirators, or special clothing.

Protect yourself and your family from pesticides: After handling pesticides, always wash your hands before eating, drinking, smoking, chewing gum, using your phone, or going to the bathroom. Remove boots and clothing after work. Take a shower as soon as you get home and before you have any contact with family. Wash work clothes separate from your family's clothes. Never bring pesticides from work into your home and never put pesticides in food or drink containers.

Report pesticide incidents: Please report unsafe pesticide work conditions by calling 1-87PestLine (1-877-378-5463) or call your local County Agricultural Commissioner. County Agricultural Commissioners and the Department of Pesticide Regulation are required to ensure your safety when you are handling and working around pesticides and will investigate reported pesticide incidents.

If you are experiencing an emergency, such as difficulty breathing, immediately call 9-1-1.
For first aid information in an non-emergency situation, call California Poison Control: (800) 222-1222.

Department of Pesticide Regulation • www.cdpr.ca.gov • October 2023

PGC safety

If you don't get all the information you need in your training or want to make a pesticide use complaint, you should call your County Agricultural Commissioner, or the DPR for more information. You can find the Commissioner's number in your local white pages phone directory, by calling 1-87PestLine, or at: www.cdfa.ca.gov/exec/county/countymap/

DPR's Regional Offices are:

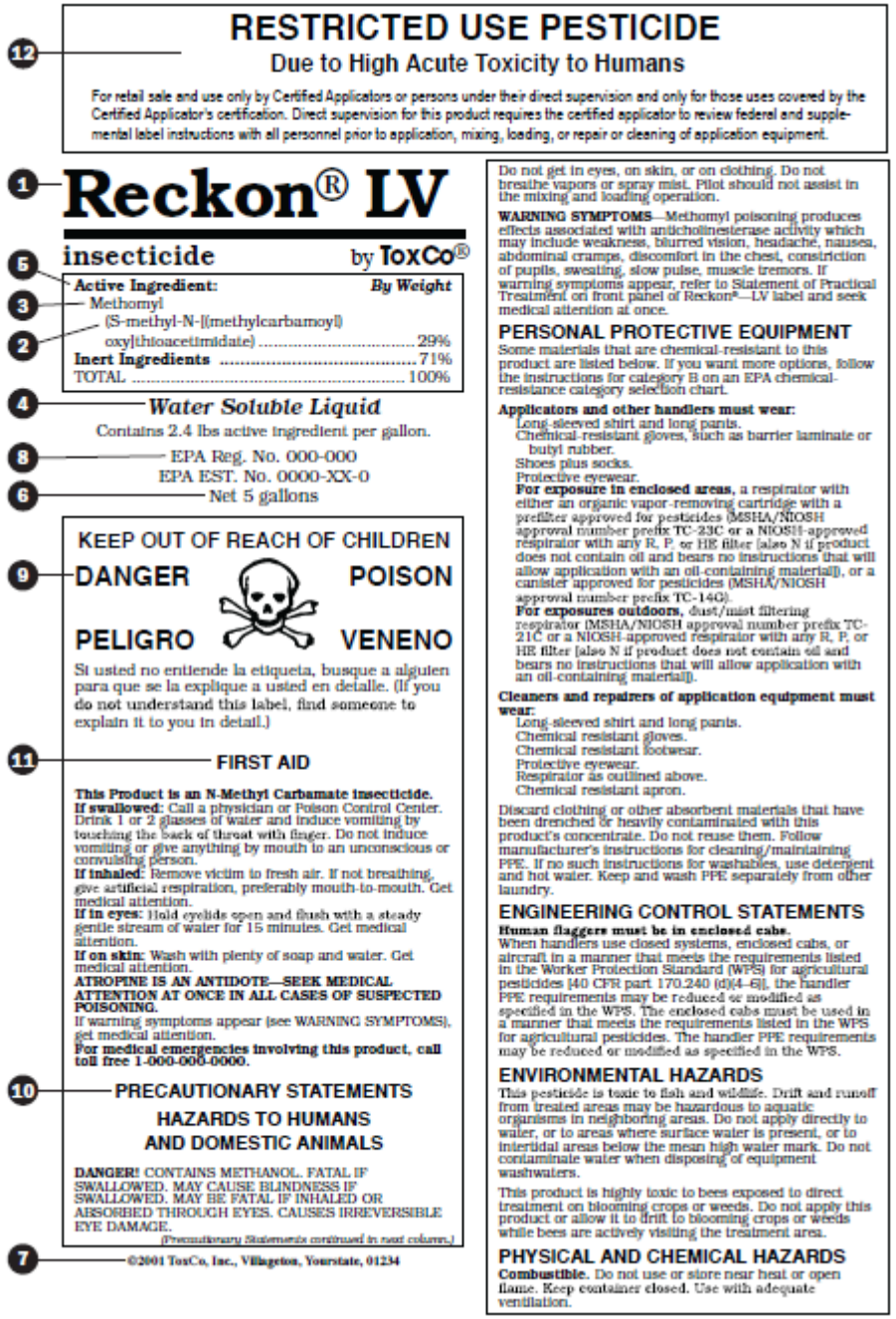
- **Northern (West Sacramento) 916/376-8960**
- **Central (Clovis) 559/297-3511**
- **Southern (Anaheim) 714/279-7690**

Always wear appropriate PPE plus closed toe shoes, pants and long sleeves when working in the PGC greenhouses or growth chambers.

Ensure that at least one of the following are aware that you are working in the PGC: your supervisor, lab manager or PGC staff.

Always wash your hands after working in the PGC. Especially before eating, drinking, using the toilet, chewing gum or touching your body. Thoroughly wash with soap and water. Wash the clothing you wear in the PGC separately from others.

This is especially important for those who live with or near immunosuppressed persons, pregnant, those who wish to become pregnant, nursing people, infants or the elderly.



RESTRICTED USE PESTICIDE

Due to High Acute Toxicity to Humans

For retail sale and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification. Direct supervision for this product requires the certified applicator to review federal and supplemental label instructions with all personnel prior to application, mixing, loading, or repair or cleaning of application equipment.

Reckon® LV

insecticide by ToxCo®

Active Ingredient:	By Weight
Methomyl (S-methyl-N-[(methylcarbamoyl) oxy]thioacetimidate)	29%
Inert Ingredients	71%
TOTAL	100%

Water Soluble Liquid

Contains 2.4 lbs active ingredient per gallon.

EPA Reg. No. 000-000
EPA EST. No. 0000-XX-0

Net 5 gallons

KEEP OUT OF REACH OF CHILDREN

DANGER **POISON**

PELIGRO **VENENO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID

This Product is an N-Methyl Carbamate Insecticide.
If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching the back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person.
If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.
If in eyes: Hold eyelids open and flush with a steady gentle stream of water for 15 minutes. Get medical attention.
If on skin: Wash with plenty of soap and water. Get medical attention.
ATROPINE IS AN ANTIDOTE—SEEK MEDICAL ATTENTION AT ONCE IN ALL CASES OF SUSPECTED POISONING.
If warning symptoms appear (see WARNING SYMPTOMS), get medical attention.
For medical emergencies involving this product, call toll free 1-000-000-0000.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER! CONTAINS METHANOL. FATAL IF SWALLOWED. MAY CAUSE BLINDNESS IF SWALLOWED. MAY BE FATAL IF INHALED OR ABSORBED THROUGH EYES. CAUSES IRREVERSIBLE EYE DAMAGE.

(Precautionary Statements continued in next column.)

Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Pilot should not assist in the mixing and loading operation.

WARNING SYMPTOMS—Methomyl poisoning produces effects associated with anticholinesterase activity which may include weakness, blurred vision, headache, nausea, abdominal cramps, discomfort in the chest, constriction of pupils, sweating, slow pulse, muscle tremors. If warning symptoms appear, refer to Statement of Practical Treatment on front panel of Reckon®—LV label and seek medical attention at once.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category B on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:
Long-sleeved shirt and long pants.
Chemical-resistant gloves, such as barrier laminate or butyl rubber.
Shoes plus socks.
Protective eyewear.
For exposure in enclosed areas, a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C or a NIOSH-approved respirator with any R, P, or HE filter [also N if product does not contain oil and bears no instructions that will allow application with an oil-containing material]), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).
For exposures outdoors, dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any R, P, or HE filter [also N if product does not contain oil and bears no instructions that will allow application with an oil-containing material]).

Cleaners and repairers of application equipment must wear:
Long-sleeved shirt and long pants.
Chemical resistant gloves.
Chemical resistant footwear.
Protective eyewear.
Respirator as outlined above.
Chemical resistant apron.

Discard clothing or 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/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROL STATEMENTS

Human flaggers must be in enclosed cabs.
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 part 170.240 (d)(4–6)], the handler PPE requirements may be reduced or modified as specified in the WPS. The enclosed cabs must be used in a manner that meets the requirements listed in the WPS for agricultural pesticides. The handler PPE requirements may be reduced or modified as specified in the WPS.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and wildlife. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

PHYSICAL AND CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame. Keep container closed. Use with adequate ventilation.

FIGURE 1-3: This example of a pesticide label illustrates the sections described in the text.

The Information Provided in Pesticide Labeling

Refer to the corresponding numbers on the sample pesticide labeling (Figure 1-3) for examples of the following pesticide labeling sections:

1. **Brand Name.** A brand name is the name the manufacturer gives to the product. This is the name found in the DPR Product Label Database and used to advertise and promote the product.
2. **Chemical Name.** Chemical names describe the chemical structure of a pesticide active ingredient. Chemists follow international rules for naming chemicals.
3. **Common Name.** Manufacturers give most pesticides common or generic names because the chemical names of pesticide active ingredients are often complicated. For example, 0,0-diethyl 0(2-isopropyl-6methyl-4-pyrimidinyl) has the common name diazinon. Common names and brand names are not the same and not all labeling lists common names for the active ingredient(s).
4. **Formulation.** Pesticide labeling often lists the formulation type, such as emulsifiable concentrate, wettable powder, or soluble powder. Manufacturers may include this information as a suffix in the brand name of the pesticide. For example, in the name Princep 80W, the "W" indicates a wettable powder formulation.
5. **Ingredients.** Pesticide labeling lists on the front panel the percentage of each active ingredient and total percentage of the inert ingredients by weight. Inert ingredients are all components of the formulation that do not have pesticidal action and therefore are not considered active ingredients but are intentionally included in the product. Examples include solvents, preservatives, stabilizers, etc. These may be toxic, flammable, or pose other safety or environmental problems. However, some may be harmless, such as clay. Inert ingredients are not required to be listed on the labeling. In the example given above, the name Princep 80W indicates that there is 80% by weight of the active ingredient 2-chloro-4, 6-bis(ethylamino)-striazine. If this were a liquid formulation, the labeling would also indicate how many pounds of active ingredient there are in 1 gallon.
6. **Contents.** Pesticide labeling list the net contents, by weight or liquid volume, contained in the package.
7. **Pesticide Registrant.** Pesticide labeling contains the name and address of the Pesticide Registrant of the product. Use the contact information to contact the manufacturer for any reason. In some cases a company manufactures/produces a pesticide for another company or person who is the Pesticide Registrant, and whose name appears on the labeling. The labeling will then qualify that the Pesticide Registrant is not the manufacturer with wording such as, "Manufactured for…" or "Produced for…"
8. **Registration and Establishment Numbers.** U.S. EPA assigns registration numbers to each pesticide they register; DPR assigns registration numbers to products it registers (primarily spray adjuvants). This registration number is needed for pesticide use records or pesticide use reporting. An establishment number identifies the unique site of manufacturing or repackaging and includes a two- or three-letter code designated to the state or country where the producer is located.
9. **Signal Word.** An important part of pesticide labeling is the signal word. The signal word indicates to the user the pesticide product's toxicity level. It is determined by the acute (short-term) toxicity data conducted on the pesticide product. Part of the registration process assigns each pesticide to a toxicity category, based on acute toxicity to humans and noted by the signal word. The words "DANGER/POISON" with a skull and crossbones indicate that the pesticide is highly toxic. The word "DANGER" used alone indicates that the pesticide poses a dangerous health hazard. "WARNING" indicates moderate toxicity, and "CAUTION" means lower toxicity. The lowest toxicity pesticides may not include a signal word.
10. **Precautionary Statements.** The precautionary statements are designed to provide the pesticide user with information regarding the toxicity, irritation, and sensitization hazards associated with the use of a pesticide, as well as treatment instructions and information to reduce exposure potential. It includes information on potential hazards to people and domestic animals and the type of PPE to wear while handling, mixing, and applying the product. In addition, it includes information on environmental hazards, such as the product's toxicity to non-target organisms such as honeybees, fish, birds, and other wildlife. The third part of the precautionary statement explains special physical and chemical hazards. These include risks of fire or explosion and hazards from fumes.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Do not apply this product through any type of irrigation system.

Do not formulate this product into other end-use products without written permission.

ToxCo RECKON® LV Insecticide should be used only in accordance with recommendations available through local dealers.

ToxCo will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by ToxCo. User assumes all risks associated with such non-recommended use. RECKON® LV is a water soluble liquid to be diluted with water for application by mechanical ground or air equipment only. Use only in commercial and farm plantings. Not for use in home plantings nor on any commercial crop that is turned into a "U-Pick," "Pick Your own" or similar operation. Pilot should not assist in the mixing and loading operation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI).
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate or butyl rubber.
- Shoes plus socks.
- Protective eyewear.

GENERAL INFORMATION

Scouting—Monitor insect populations to determine whether or not there is a need for application of RECKON® LV based on locally determined economic thresholds. More than one treatment of RECKON® LV may be required to control a population of pests.

Insect Predators—RECKON® LV at rates of 2/5 to 3/4 pt. per acre helps conserve certain beneficials, including big-eyed bugs, damsel bugs, flower bugs and spiders in cotton and soybeans. While these beneficials cannot be relied upon to control pests, they are of potential value and should be monitored along with pests in pest management programs on these crops.

Resistance—Some insects are known to develop resistance to products used repeatedly for control. When this occurs, the recommended dosages fail to suppress the pest population below the economic threshold. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of active classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local agricultural authorities for details.

Compatibility—Since formulations may be changed and new ones introduced, it is recommended that users premix a small quantity of desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.). Avoid mixtures of several materials and very concentrated spray mixtures.

Do not use RECKON® LV with Bordeaux mixture, "Du Ter" (triphenyltin hydroxide), lime sulfur, "Kayplex" iron nor in highly alkaline solutions. Use mildly alkaline mixtures immediately after mixing to prevent loss of insecticidal activity.

SPRAY PREPARATION

Spray equipment must be clean and free of previous pesticide deposits before applying RECKON® LV.

Fill spray tank 1/4 to 1/2 full of water. Add RECKON® LV directly to spray tank. Mix thoroughly. Use mechanical or hydraulic means; do not use air agitation. Spray mix should not be stored overnight in spray tank.

(Directions for Use continued on supplemental labeling.)

STORAGE AND DISPOSAL

STORAGE: Do not subject to temperatures below 32° F. Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

PRODUCT DISPOSAL: Do not contaminate water, food, or feed by disposal. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Triple rinse (or equivalent), then offer for recycling or reconditioning if container reuse is permitted, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Return empty stainless steel containers for refilling and reuse.

LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read This Limitation of Warranty and Liability Before Buying or Using This Product. If the Terms Are Not Acceptable, Return the Product at Once, Unopened, and the Purchase Price Will Be Refunded.
It is impossible to eliminate all risks associated with the use of this product. Such risks arise from weather conditions, soil factors, off target movement, unconventional farming techniques, presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of ToxCo. These risks can cause: ineffectiveness of the product; crop injury; or injury to nontarget crops or plants.

ToxCo does not agree to be an insurer of these risks. WHEN YOU BY OR USE THIS PRODUCT, YOU AGREE TO ACCEPT THESE RISKS.

(Warranty information continued on supplemental labeling.)

Crops	Insects	Rate	Last Application—Days		
		Reckon® LV Pts. Per Acre	To Harvest	To Livestock Grazing/ Feeding	REI
Anise (fennel)	Cabbage Looper	3	7		48 hrs
	Beet Armyworm	1-1/2 to 3			
	Do not apply more than 4.5 lbs a.i./acre/crop. Do not make more than 10 applications/crop.				

(Restricted-entry information continued on supplemental labeling.)

11. **First Aid Statement.** The first aid statements provide emergency first aid information. They describe the emergency first aid procedures for ingestion, skin and eye exposure, and inhalation of the pesticide product. This section details when to seek medical attention and may include information to the physician on illness treatment.
12. **Statement of Use Classification.** U.S. EPA restricted use pesticides have a special statement printed on the top of the front page of the labeling.
13. **Directions for Use.** The directions for use are an important part of the pesticide labeling that must be followed to keep the user from violating the law. It is illegal to use a product in a manner inconsistent with the directions for use except where federal or state laws specify acceptable deviations from the registered labeling (see the section below titled, "Deviations from Labeling Directions"). The directions for use list all the target pests that manufacturers claim their pesticides control. They also include the crops, plant species, animals, or other sites where the pesticide can be used. Here is where the applicator would find special restrictions that must be observed. These include crops that may or may not be planted in the treated area (plant back restrictions). They also include restrictions on feeding crop residues to livestock or grazing livestock on treated plants.
14. **Agricultural Use Requirements.** This special section appears under the Directions for Use on pesticide labeling approved for use in production agriculture (i.e., farms, greenhouses and nurseries, and forests). It contains four parts:
    a. Reference to the federal Worker Protection Standard (Code of Federal Regulations, Title 40, part 170), which has been incorporated into 3 CCR.
    b. The Restricted-Entry Interval (REI) for workers, (In this example label, the REI is listed with each crop as pointed out by #15 below). The REI is the time period immediately following a pesticide application during which entry into the treated area is restricted, REIs vary according to the toxicity and special hazards associated with the pesticide. The crop or site being treated and its geographic location also influence the length of the interval. Some pesticide uses in California require longer REIs than those listed on the pesticide labeling, see Chapter 6 and the section on REIs. Check with the local CAC for more information. Labeling of pesticides used for field fumigation have a different standard, the Entry Restricted Period, during which time only protected handlers may be in the treated field.
    c. Information on the PPE required for early-entry workers.
    d. Finally, it may contain a worker notification statement. If the pesticide requires both oral notification and posting (double notification), a statement such as "Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas" will be included. The Agricultural Use Requirements section may differ from other requirements on the labeling or those listed in 3 CCR. The pesticide must be used in accordance with the most restrictive requirements.
15. **Use sites.** A list of crops, commodities or sites on which the pesticide is registered for use. This generally may include pests, rates, dilution, pre-harvest intervals and/or grazing restrictions. If the labeling has the REI for each crop (instead of in the Agricultural Use Requirements box), the information will also be included here.
16. **Misuse Statement.** The misuse statement reminds users, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." In short, the labeling is the law.
17. **Storage and Disposal.** Directions for properly storing and disposing of the pesticide and empty pesticide containers are another important part of pesticide labeling. Proper disposal of unused pesticides and pesticide containers can reduce human and environmental hazards. Some pesticides have special storage requirements because improper storage causes them to lose their effectiveness. Improper storage can also cause explosions or fires.
18. **Warranty.** Manufacturers usually include a warranty and disclaimer on pesticide labeling. This information informs individuals of their rights as a purchaser and limits the liability of the manufacturer. Note: Companies are not required to include a warranty statement; however, exclusion of a warranty statement is not common.

Understanding pesticide labels

Source, from previous slide

https://www.cdpr.ca.gov/wp-content/uploads/2025/01/laws_regs_study_guide.pdf

Pages 21 – 23

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants in nurseries, greenhouses, and on sod and seed farms.

- Adults, children, and pets should not contact treated surfaces until the spray has dried.

Pesticide safety tips and routes of exposure

Symptoms of pesticide exposure:

A. Range from minor skin irritation to death
B. Severity of reaction varies by individual
C. Effects or symptoms can be topical or systemic
    1. Topical develop at site of pesticide contact (dermatitis, coughing, sneezing, itching eyes, etc.)
    2. Systemic often occur away from the original point of contact. Symptoms include nausea, vomiting, fatigue, headache and intestinal disorders. Advanced toxicity may cause changes in heart rate, difficulty breathing, convulsions or death

Suggested reading

https://extension.psu.edu/potential-health-effects-of-pesticides

The relevant pathways of exposure to pesticides are dependent on the type of pesticide and its registered uses. Exposure to pesticides can occur from **dermal contact,** or as a result of unintentional **ingestion** or **inhalation**. The table below gives examples to illustrate these pathways:

Route	Example(s) for Pesticides
Dermal contact	Direct and indirect dermal contact exposure can occur through use of consumer products containing pesticides. Occupational activities can also result in dermal exposures. • Direct exposure can occur when receptors come into contact with pesticides in consumer products during use. • Direct occupational exposure can occur from mixing, loading, and applying pesticides. • Postapplication exposure to pesticide residues can occur when workers or consumers contact treated foliage (e.g., during weeding, harvesting) or surfaces. • Indirect exposure could occur when a nonuser comes into contact with pesticide residues on indoor surfaces (e.g., that have been sprayed with disinfectant) or on food that had been sprayed with a pesticide. • Indirect exposure could also occur by contacting pesticide-laden dust that has settled on carpets, floors, clothing, counter tops, or other surfaces.
Ingestion	• The addition of pesticides to food commodities or packaging could result in contamination of fruits, vegetables, grains, and other food products. • Exposure to pesticides in consumer products might occur by incidental ingestion (e.g., from hand-to-mouth contact).
Inhalation	• Occupational or residential exposure to pesticide products during or after application might occur by inhalation of particulates, vapors, or aerosols.

Working in treated areas

- Notebook containing pesticide application details, pesticide labels and safety data sheets is located in the PGC (610 Charles E Young Dr. South Building #111)
- This information is included in email notifications distributed and posted in advance of all pesticide applications. Signs are removed after the REI expires

Working in treated areas, email communication example

From: Foust-Meyer, Nate
Sent: Wednesday, May 21, 2025 6:54 PM
Subject: PGC Pesticide Applications Scheduled for 5/27/2025 @ 6 PM

Good afternoon all,

I will make the following applications on Tuesday 27 May at 6 PM. The corresponding SDS and label information are attached here. The REI will expire after 8:30 AM on Wednesday 5/28/2025 in all applied areas. Warning signs will remain in place until then.

If you have plants to exclude from this application please place a note and find me to discuss or send me a message indicating the greenhouse and bench location of the plants. If you need access to these areas before the REI expires please reach out to me so we can ensure you have what you need safely and efficiently.

DATE	LOCATION	PRODUCT / AI	APPLICATION RATE	METHOD	AREA	TARGET PEST	REI	EPA NUMBER	Hazard tier
5/27/2025	GH 1-6 & GC's (exclude GC #3726 and oaks)	Gnatrol / *Bacilus t. israelensis*	10 oz / 100 gallons H2O	Drench	3500 sq ft	FGL	4	73049-56	EPA # not found on UC-pesticide-hazard-tier-list
5/27/2025	GH 1-6 & GC's (exclude GH2, GC #3726 and oaks)	Endeavor* / Pymetrozine 50%	0.03 oz / 1 gallon H2O	Spray	3250 sq ft	Systemic protection against insect & mite pests	14	100-913	EPA # not found on UC-pesticide-hazard-tier-list
5/27/2025	GH 1-6 & GC's (exclude GH2, GC #3726 and oaks)	Azaguard/Azadirachtin* 3%	1 tsp / 1 gallon H2O	Spray	3500 sq ft	IGR	14	70299-17	EPA # not found on UC-pesticide-hazard-tier-list
5/27/2025	GH 1-6 & GC's (exclude GH2, GC #3726 and oaks)	Aircover* / Adjuvant	0.33 oz / gallon H2O	Spray	3500 sq ft	Adjuvant	14	No EPA # Available	EPA # not found on UC-pesticide-hazard-tier-list

Thanks,

Nate Foust-Meyer, M.S.
QAL #159789
(310) 825-4687 x 54687
He/Him/His
Greenhouse Manager
Plant Growth Center
Dept. of Life Sciences
UCLA

REI - v - PHI

Please **do not eat anything grown in the PGC.**

We manage pesticides safe for use on non-culinary crops. The re-entry interval (REI) protects you from direct exposure.

We do not manage pesticides safe for culinary use. In food production settings the pre-harvest interval (PHI) protects consumers from un-safe levels of pesticides.

Responding to emergencies and pesticide illness

Please report unsafe activity, accidents and close calls to:

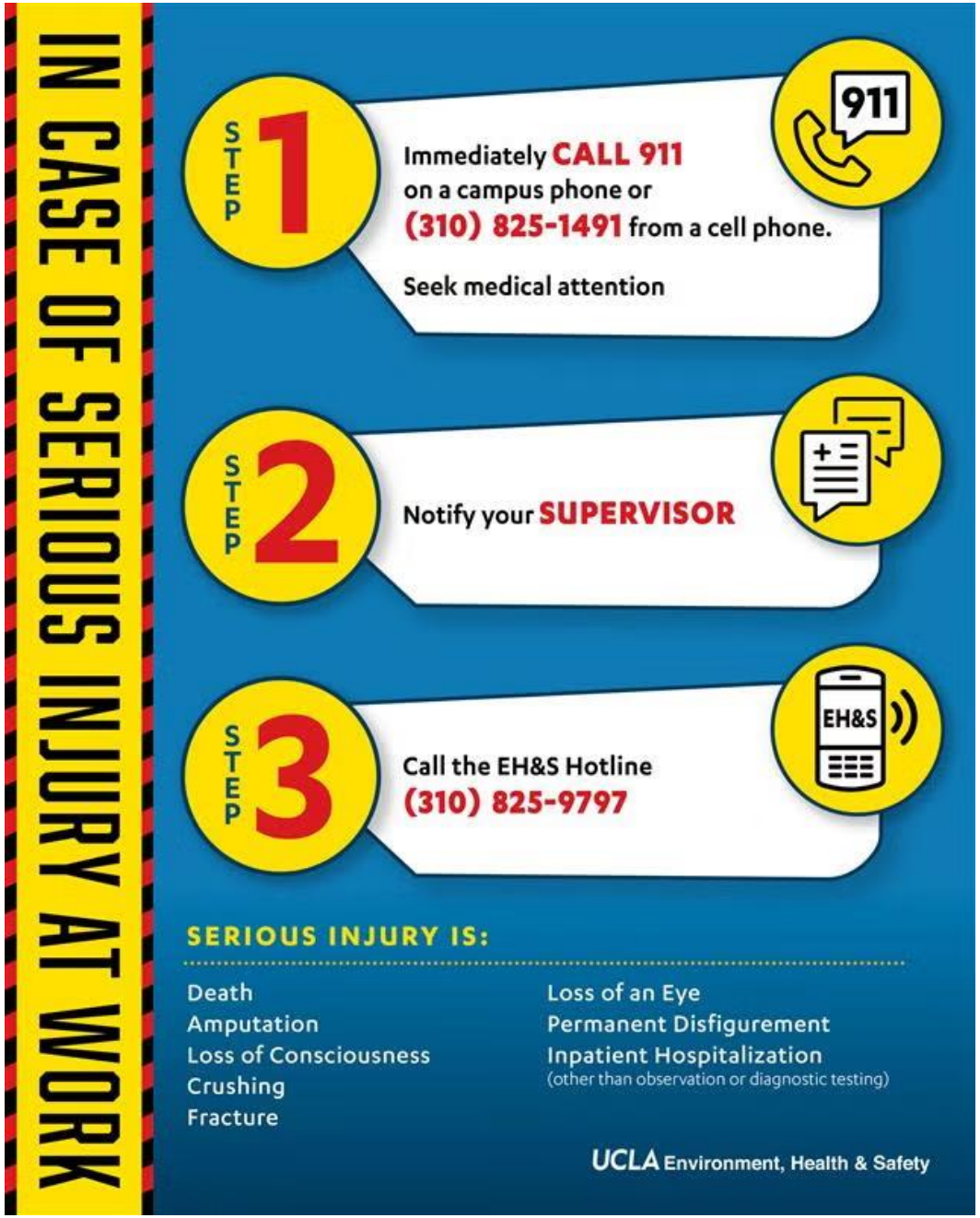
1. Call 911 if it is an emergency
2. Your supervisor
3. Call EH&S Hotline (310) 825-9797

If you suspect you have been unsafely exposed to pesticides:

1. Report to your supervisor. They will follow up and ensure you receive the medical care you need
2. Complete the pesticide illness report form as you are able

Example

[Pesticide illness report form.pdf]

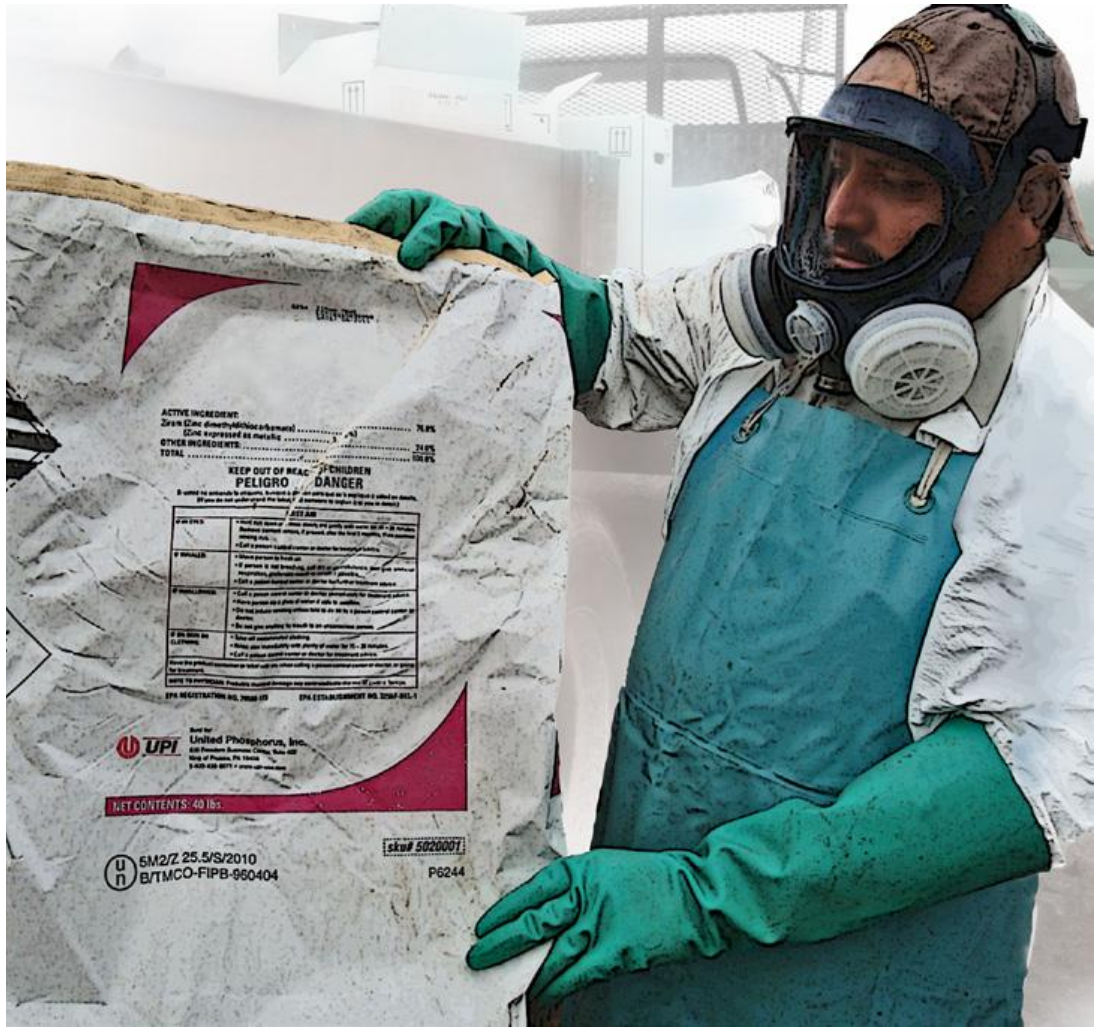


PGC user and worker safety regulations

Required:

Pesticide worker safety series A from the California Department of Pesticide Regulations

https://www.cdpr.ca.gov/worker-health-and-safety/education-series/



Friendly reminders

- Turn off the valve and coil all hoses after use
- Return carts to the headhouse
- Place plant material to be thrown away on the metal cart
- We wash, sanitize and reuse the trays and germination domes. Please do not put them in the trash unless broken
- Return chairs to the hallway when work is complete for the day
- Let PGC manager know if you need light or temperature data, if you see pests or disease issues, need large or special containers, anticipate planting more than 50 trays or containers at a time, need special substrates, help watering, etc.

PGC Growing Systems

i. Non-research plants are not allowed. Respect your neighbors. Limit the amount of time doors are open

ii. Greenhouses (top floor)
   i. Rolling benches (photo in next slide)
   ii. Argus control system to:
      i. monitor relative humidity
      ii. manages light levels (> 150 Watts/square meter, 16 hours/day)
      iii. manages temperature (68 – 74 F, 24/7). Data available upon request

iii. Walk-in growth chambers
   i. 4 total
   ii. Fixed benches
   iii. Monitor humidity, not control
   iv. Temp range about 45 F to 105 F
   v. Beware of lights

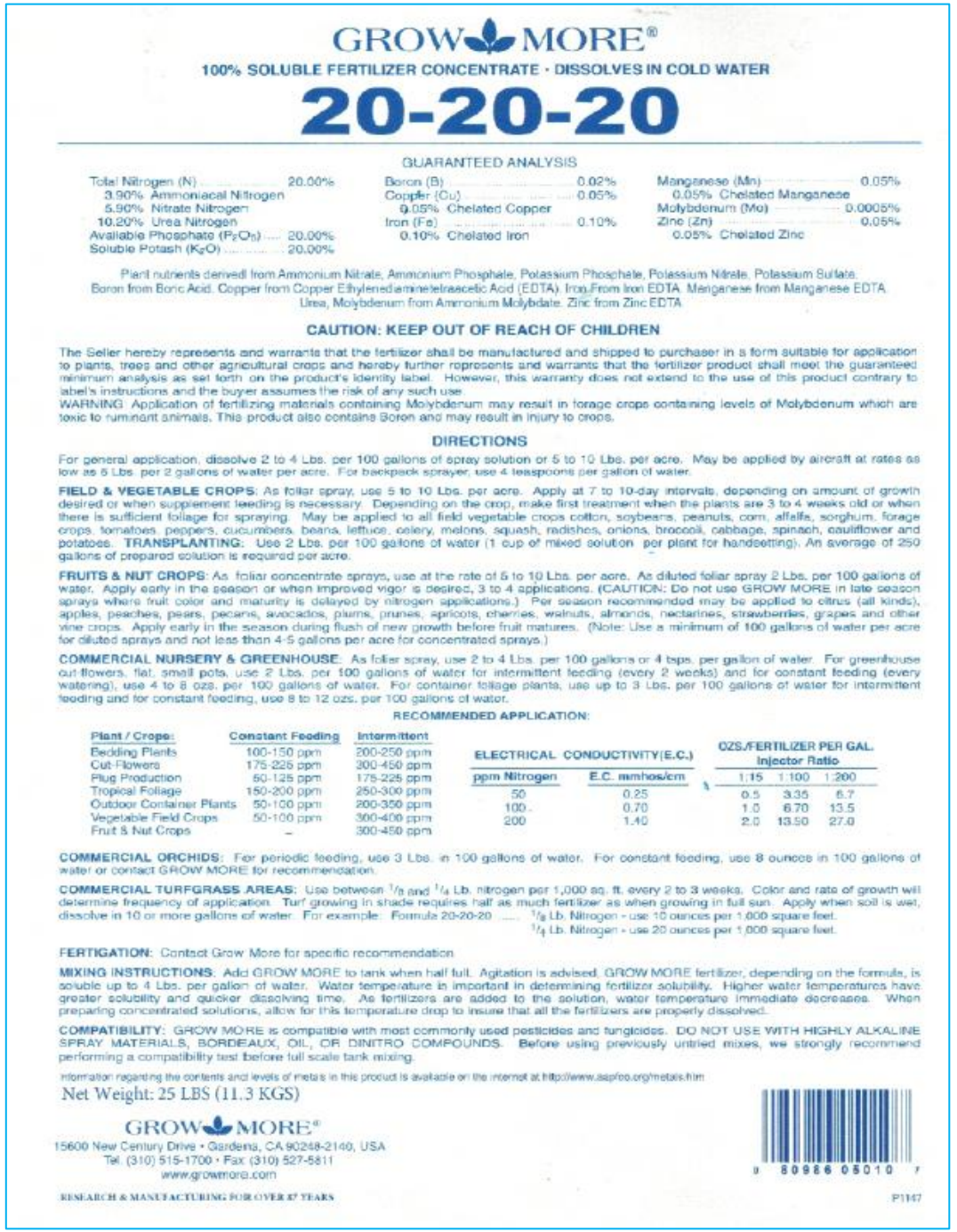
iv. Cold storage walk-in growth chamber (40 F)

v. Limited outdoor growing space

vi. Soilless substrate, [sungro sunshine mix #5]

vii. Fertilizer and tempered water
   i. Close the valves, drain and coil the hose
   ii. 2% solution…soil contains additional small dose of fertilizer
   iii. pH and EC data available upon request

viii. If you need to bring plant material into the PGC please let PGC manager know to ensure it is pest and pathogen free



GROW MORE®

100% SOLUBLE FERTILIZER CONCENTRATE · DISSOLVES IN COLD WATER

20-20-20

GUARANTEED ANALYSIS

Total Nitrogen (N)	20.00%	Boron (B)	0.02%	Manganese (Mn)	0.05%
3.90% Ammoniacal Nitrogen		Copper (Cu)	0.05%	0.05% Chelated Manganese	
5.90% Nitrate Nitrogen		0.05% Chelated Copper		Molybdenum (Mo)	0.0005%
10.20% Urea Nitrogen		Iron (Fe)	0.10%	Zinc (Zn)	0.05%
Available Phosphate (P_2O_5)	20.00%	0.10% Chelated Iron		0.05% Chelated Zinc	
Soluble Potash (K_2O)	20.00%				

Plant nutrients derived from Ammonium Nitrate, Ammonium Phosphate, Potassium Phosphate, Potassium Nitrate, Potassium Sulfate, Boron from Boric Acid, Copper from Copper Ethylenediaminetetraacetic Acid (EDTA), Iron From Iron EDTA, Manganese from Manganese EDTA, Urea, Molybdenum from Ammonium Molybdate, Zinc from Zinc EDTA.

CAUTION: KEEP OUT OF REACH OF CHILDREN

The Seller hereby represents and warrants that the fertilizer shall be manufactured and shipped to purchaser in a form suitable for application to plants, trees and other agricultural crops and hereby further represents and warrants that the fertilizer product shall meet the guaranteed minimum analysis as set forth on the product's identity label. However, this warranty does not extend to the use of this product contrary to label's instructions and the buyer assumes the risk of any such use.
WARNING: Application of fertilizing materials containing Molybdenum may result in forage crops containing levels of Molybdenum which are toxic to ruminant animals. This product also contains Boron and may result in injury to crops.

DIRECTIONS

For general application, dissolve 2 to 4 Lbs. per 100 gallons of spray solution or 5 to 10 Lbs. per acre. May be applied by aircraft at rates as low as 5 Lbs. per 2 gallons of water per acre. For backpack sprayer, use 4 teaspoons per gallon of water.

FIELD & VEGETABLE CROPS: As foliar spray, use 5 to 10 Lbs. per acre. Apply at 7 to 10-day intervals, depending on amount of growth desired or when supplement feeding is necessary. Depending on the crop, make first treatment when the plants are 3 to 4 weeks old or when there is sufficient foliage for spraying. May be applied to all field vegetable crops cotton, soybeans, peanuts, corn, alfalfa, sorghum, forage crops, tomatoes, peppers, cucumbers, beans, lettuce, celery, melons, squash, radishes, onions, broccoli, cabbage, spinach, cauliflower and potatoes. **TRANSPLANTING:** Use 2 Lbs. per 100 gallons of water (1 cup of mixed solution per plant for handsetting). An average of 250 gallons of prepared solution is required per acre.

FRUITS & NUT CROPS: As foliar concentrate sprays, use at the rate of 5 to 10 Lbs. per acre. As diluted foliar spray 2 Lbs. per 100 gallons of water. Apply early in the season or when improved vigor is desired, 3 to 4 applications. (CAUTION: Do not use GROW MORE in late season sprays where fruit color and maturity is delayed by nitrogen applications.) Per season recommended may be applied to citrus (all kinds), apples, peaches, pears, pecans, avocados, plums, prunes, apricots, cherries, walnuts, almonds, nectarines, strawberries, grapes and other vine crops. Apply early in the season during flush of new growth before fruit matures. (Note: Use a minimum of 100 gallons of water per acre for diluted sprays and not less than 4-5 gallons per acre for concentrated sprays.)

COMMERCIAL NURSERY & GREENHOUSE: As foliar spray, use 2 to 4 Lbs. per 100 gallons or 4 tsps. per gallon of water. For greenhouse cut flowers, flat, small pots, use 2 Lbs. per 100 gallons of water for intermittent feeding (every 2 weeks) and for constant feeding (every watering), use 4 to 8 ozs. per 100 gallons of water. For container foliage plants, use up to 3 Lbs. per 100 gallons of water for intermittent feeding and for constant feeding, use 8 to 12 ozs. per 100 gallons of water.

RECOMMENDED APPLICATION:

Plant / Crops:	Constant Feeding	Intermittent	ELECTRICAL CONDUCTIVITY (E.C.)		OZS./FERTILIZER PER GAL. Injector Ratio		
			ppm Nitrogen	E.C. mmhos/cm	1:15	1:100	1:200
Bedding Plants	100-150 ppm	200-250 ppm					
Cut-Flowers	175-225 ppm	300-450 ppm					
Plug Production	50-125 ppm	175-225 ppm					
Tropical Foliage	150-200 ppm	250-300 ppm					
Outdoor Container Plants	50-100 ppm	200-350 ppm	50	0.25	0.5	3.35	6.7
Vegetable Field Crops	50-100 ppm	300-400 ppm	100	0.70	1.0	6.70	13.5
Fruit & Nut Crops	–	300-450 ppm	200	1.40	2.0	13.50	27.0

COMMERCIAL ORCHIDS: For periodic feeding, use 3 Lbs. in 100 gallons of water. For constant feeding, use 8 ounces in 100 gallons of water or contact GROW MORE for recommendation.

COMMERCIAL TURFGRASS AREAS: Use between 1/8 and 1/4 Lb. nitrogen per 1,000 sq. ft. every 2 to 3 weeks. Color and rate of growth will determine frequency of application. Turf growing in shade requires half as much fertilizer as when growing in full sun. Apply when soil is wet, dissolve in 10 or more gallons of water. For example: Formula 20-20-20 ..... 1/8 Lb. Nitrogen - use 10 ounces per 1,000 square feet.
1/4 Lb. Nitrogen - use 20 ounces per 1,000 square feet.

FERTIGATION: Contact Grow More for specific recommendation.

MIXING INSTRUCTIONS: Add GROW MORE to tank when half full. Agitation is advised. GROW MORE fertilizer, depending on the formula, is soluble up to 4 Lbs. per gallon of water. Water temperature is important in determining fertilizer solubility. Higher water temperatures have greater solubility and quicker dissolving time. As fertilizers are added to the solution, water temperature immediate decreases. When preparing concentrated solutions, allow for this temperature drop to insure that all the fertilizers are properly dissolved.

COMPATIBILITY: GROW MORE is compatible with most commonly used pesticides and fungicides. DO NOT USE WITH HIGHLY ALKALINE SPRAY MATERIALS, BORDEAUX, OIL, OR DINITRO COMPOUNDS. Before using previously untried mixes, we strongly recommend performing a compatibility test before full scale tank mixing.

Information regarding the contents and levels of metals in this product is available on the internet at http://www.aapfco.org/metals.html

Net Weight: 25 LBS (11.3 KGS)

GROW MORE®
15600 New Century Drive • Gardena, CA 90248-2140, USA
Tel: (310) 515-1700 • Fax: (310) 527-5811
www.growmore.com

RESEARCH & MANUFACTURING FOR OVER 47 YEARS

80986 05010 7

P1147


Be careful with large pots. Take care to place them so the bench does not tip or come off of the rollers (photo in next slide). The red dots are the recommended location in this example

Questions?

nfoustmeyer@lifesci.ucla.edu

(310) 825-4687 x 54687

employee training log.pdf

Feedback welcome!