



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

FEB 23 2010

Ms. Rebecca Clemmer
United Phosphorus, Inc.
630 Freedom Business Center
King of Prussia, PA 19406

Subject: Label Notifications for Pesticide Registration Notices 98-10 (Changes to Emergency Contact Number, Warranty Statement), 2005-1, and 2007-4

Dear Ms. Clemmer,

The Agency is in receipt of your Applications for Pesticide Notification under Pesticide Registration Notices (PRNs) 98-10, 2005-1, and 2007-4 dated August 21, 2009 for the following products:


| | |
|---|---|
| Tengard MUP | (EPA Registration Number 70506-5) |
| Perm-UP 3.2 EC Insecticide | (EPA Registration Number 70506-9) |
| Perm-UP® 25DF Dry Flowable Insecticide | (EPA Registration Number 70506-66) |

The Registration Division (RD) has conducted its review of these requests for their applicability under PRNs 98-10, 2005-1, and 2007-4 and finds that the label changes requested fall within the scope of PRNs 98-10, 2005-1, and 2007-4. The labels submitted with the applications have been stamped "Notification" and will be placed in our records.

Please be reminded that 40 CFR Part 156.140(a)(4) requires that a batch code, lot number, or other code identifying the batch of the pesticide distributed and sold be placed on nonrefillable containers. The code may appear either on the label (and can be added by non-notification/PR Notice 98-10) or durably marked on the container itself.

If you have any questions, please call me directly at 703-305-6249 or Steve Schaible of my staff at 703-308-9362.

Sincerely,


Linda Arrington
Notifications & Minor Formulations Team Leader
Registration Division (7505P)
Office of Pesticide Programs



United Phosphorus, Inc.

630 Freedom Business Center
Suite 402
King of Prussia, PA 19406
(610) 491-2828 (phone)
(610) 491-2810 (fax)

Rebecca A. Clemmer
Regulatory Manager

August 21, 2009

Document Processing Desk (NOTIF)
Office of Pesticide Programs (7504P)
U.S. Environmental Protection Agency
Room S-4900, One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

Re: Permethrin Products - Notifications

To Whom It May Concern:

United Phosphorus, Inc. is submitting revised labels to accomplish the following changes, all of which qualify as Notifications: add resistance category per PRN 2001-5; update container disposal wording per PRN 2007-4. In the case of Tengard MUP there have also been updates to the emergency and company contact information, as well as the warranty.

Products:

Tengard MUP, EPA Reg. No. 70506-5
Perm-UP 3.2 EC Insecticide, EPA Reg. No. 70506-9
Perm-UP 25DF Dry Flowable Insecticide, EPA Reg. No. 70506-66

In support, for each label enclosed please find:

- EPA form 8570-1
- Label copy marked to show changes
- Label integrity form
- A CD containing clean pdf copies of each label

Please contact me if you have any questions.

Very truly yours,

A handwritten signature in cursive script that reads 'R.A. Clemmer'.

Rebecca A. Clemmer
rebecca.clemmer@uniphos.com

Certification with Respect to Label Integrity

version: 9/11/02

I certify that the information (including, but not limited to, text, tables, and graphics) contained in the electronic file identified below by file name and submitted with this certification is the same information as that on the paper copies of these documents included with this submission.

| PROPOSED LABEL | | |
|--------------------|-----------------------|--|
| EPA Registration # | Date Submitted to EPA | Electronic file name |
| 70506-5 | Aug. 21, 2009 | 070506-00005.20090820.Tengard MUP 2007-4.pdf |
| 70506-6 | | 070506-00006.20090820.Perm-UP 3.2 PR 2007-4.pdf |
| 70506-66 | | 070506-00066.20090820.Perm-UP 25DF PR 2007-4.pdf |

I certify that the statements that I have made on this form are true, accurate, and complete. I acknowledge that any knowingly false or misleading statements may be punishable by fine or imprisonment or both under applicable law.

R.A. Clemmer
 Signature

August 21, 2009
 Date

Rebecca A. Clemmer
 Name (typed)

Regulatory Manager
 Title

RESTRICTED USE PESTICIDE
DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS
 For retail sale to and use only by Certified Applicators, or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

GROUP 3A INSECTICIDE

PERM-UP® 25DF
 Dry Flowable Insecticide

NOTIFICATION

FEB 23 2010

ACTIVE INGREDIENT:

Permethrin*25.0%
 INERT INGREDIENTS75.0%
 100.0 %

* (3-Phenoxyphenyl)methyl(±)-cis, trans-3-(2,2-dichloroethyl)-2,2-dimethylcyclopropanecarboxylate;
 cis/trans ratio Max. 55% (±) *cis* and min. 45% (±) *trans*

KEEP OUT OF REACH OF CHILDREN
WARNING
AVISO

Si usted 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 | |
|---|--|
| IF INHALED: | <ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth to mouth if possible. • Call a poison control center or doctor for further treatment advice. |
| IF ON SKIN OR CLOTHING: | <ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice. |
| IF IN EYES: | <ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice. |
| IF SWALLOWED: | <ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person. |
| HOT LINE NUMBER | |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical assistance, call the Rocky Mountain Poison Control Center at 1-866-673-6671. | |

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC at 1-800-424-9300.



United Phosphorus, Inc.
 630 Freedom Business Center
 King of Prussia, PA 19406
 1-800-438-6071 • www.upi-usa.com

EPA Reg. No. 70506-66
 EPA Establishment No.
 Net Contents: 2 lbs.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS****WARNING**

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear. Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco.

PERSONAL PROTECTION EQUIPMENT (PPE):

Some materials that are chemical-resistant to this product are barrier laminate and Viton. If you want more options, follow the instructions for category G on an EPA chemical-resistance category selection chart.

All mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves for all handlers except for applicators using motorized ground equipment, pilots, and flaggers
- Chemical resistant apron for mixers/loaders, persons cleaning equipment, and persons exposed to the
- Shoes plus socks

See Engineering Controls for additional requirements.

Do not apply this product using ULV cold foggers and/or fog/mist generators.

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched (except as required by directions for use) or heavily contaminated with this product's concentrate. Do not re-use them.

ENGINEERING CONTROLS

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

USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using toilet.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to aquatic organisms, including fish and invertebrates. 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 apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

Under some conditions, it may also have the potential for transport into surface water in runoff (primarily adsorbed to suspended soil particles), for several months or more after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, and areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage systems that drain to surface waters.

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

**DIRECTIONS FOR USE
RESTRICTED USE PESTICIDE**

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.

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) of 12 hours.
PROHIBITION: harvesting of conifer seed cones is prohibited within 30 days of application.

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

LIST OF CROPS**Food and Feed Crops**

Alfalfa, Alfalfa Grown for Seed
 Apples
 Artichoke
 Asparagus
 Avocado
 Broccoli, Chinese Broccoli, Brussels Sprouts, Cauliflower, Cavalo broccolo, Kohlrabi
 Cabbage, Chinese Cabbage (napa) (tight-heading varieties only)
 Cherries (Sweet, Tart)
 Collards and Turnips
 Corn (Field), Field Corn Grown for Seed, Popcorn
 Corn (Field), Field Corn Grown for Seed, Popcorn (At Plant Use)
 Corn, Sweet
 Corn, Sweet (Florida Only)
 Cucurbit Vegetables
 Eggplants
 Filberts
 Horseradish
 Leafy Vegetables (Except Brassica)
 Mushrooms (Mushroom houses and adjacent premise areas)
 Onions, Bulb and Garlic
 Papaya (Florida Only)
 Peaches and Nectarines
 Pears (Dormant through Delayed Dormant)
 Pears (Pre-Bloom)
 Peppers, Bell
 Pistachios
 Potatoes
 Range Grass (New Mexico Only)
 Soybeans
 Tomatoes, Tomatillos
 Walnuts

Ornamentals

Chrysanthemums (Florida only)
 Conifers (Container and Field Grown)
 Ornamental Nursery Stock (Field Grown)
 Pine Seed Orchards
 Roses (Field Grown and Greenhouse)

Premise Sprays

Dairies, Barns, Feedlots, Stables, Poultry Houses, Swine and Livestock Houses

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GENERAL INFORMATION

Apply PERM-UP 25DF as shown in DIRECTIONS FOR APPLICATION. Use sufficient water to obtain full coverage of foliage. Timing and frequency of applications should be based upon insect populations reaching economic thresholds. The higher rates may be required under conditions of heavy infestation. Crops in this label may be planted immediately after last treatment. Do not plant other crops within 60 days after last application. Any other crop may be planted if it is not harvested or grazed.

Resistance: Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your Local or State Agricultural Authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control, and resistance is a reasonable cause, immediately consult your local UPI representative or agricultural advisor for the best alternative method of control for your area.

BUFFER ZONES

Vegetative Buffer Strip

Construct and maintain a minimum 10-foot wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to: lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing permethrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses*. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, TX. 21 pp. <http://in.nrcs.gov/technical/agronomy/newconbuf.pdf>.

Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)

Do not apply within 25 feet of aquatic habitats (such as, but not limited to: lakes; reservoirs; rivers; permanent streams; marshes; natural ponds; estuaries; and commercial fish ponds).

Buffer zone for ULV Aerial Application

Do not apply within 450 feet of aquatic habitats (such as, but not limited to: lakes; reservoirs; rivers; permanent streams; marshes; natural ponds; estuaries; and commercial fish ponds).

Buffer Zone for Non-ULV Aerial Application

Do not apply within 15 feet of aquatic habitats (such as, but not limited to: lakes; reservoirs; rivers; permanent streams; marshes; natural ponds; estuaries; and commercial fish ponds).

SPRAY DRIFT REQUIREMENTS

Wind Direction and Speed

Only apply this product if the wind direction favors on-target deposition.
Do not apply when the wind velocity exceeds 15 mph.

Temperature Inversion

Do not make aerial or ground applications into temperature inversions.
Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Droplet Size

Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

Additional Requirements for Ground Applications

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application. For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

Additional Requirements for Aerial Applications

The spray boom should be mounted on the aircraft so as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

CHEMIGATION USE DIRECTIONS

PERM-UP 25DF mixes readily with water to form a suspension. PERM-UP 25DF should be diluted in sufficient volume of water to ensure accurate application over the area to be treated. Mix the required amount of PERM-UP 25DF with a small quantity of water and add this premix to the supply tank with the required amount of water. Maintain sufficient agitation during both mixing and application to ensure uniformity of the supply tank. Hydraulic or mechanical agitation is recommended. PERM-UP 25DF should be applied continuously for the duration of the water application. When using chemigation, a minimum of 0.1 inch per acre of irrigation water is recommended.

Apply this product only through sprinkler including center pivot, lateral move, and tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

DIRECTIONS FOR APPLICATION

ALFALFA, ALFALFA GROWN FOR SEED:

(Includes Lucerne, sainfoin, holy clover, esparcet, birdsfoot trefoil and varieties and/or hybrids of these.)

| Target Pests | Rate Of Application | Special Directions and Restrictions |
|--|---------------------------------------|--|
| Alfalfa Caterpillar Armyworm spp. Blue Alfalfa Aphid Cutworms Green Cloverworm Green Peach Aphid Loopers Pea Aphid Spotted Alfalfa Aphid Velvetbean Caterpillar Webworms | 0.05-0.2 lb a.i./A (3.2-12.8 oz/A) | Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. User higher gallonage, 5-10 gallons by air, or 20 by ground, finished spray per acre when foliage is dense and/or when pest populations are high. Use higher rate for increased pest pressure or for increased residual pest control. Do not apply to mixed stands with intentionally grown forage grasses and/or legumes. Do not apply more than 12.8 oz product (0.2 lb. a.i.) per cutting. When rates of 6.4 oz product (0.1 lb a.i.) per acre or less are used, application may be made on day of harvest. |
| Alfalfa Weevil Cucumber Beetle Egyptian Alfalfa Weevil Meadow Spittlebug Plant Bugs including Lygus spp. Potato Leafhopper Stink Bugs | 0.1-0.2 lb a.i./A (6.4-12.8 oz/A) | When rates greater than 6.4 oz product (0.1 lb. a.i.) per acre are used, do not apply within 14 days of harvest. Do not apply at intervals less than 30 days. Avoid application when bees are actively foraging by applying during the early morning or during the evening hours. |

APPLES

| Target Pests | Rate Of Application | Special Directions and Restrictions |
|---|---------------------------------------|---|
| Green Fruitworm Oblique banded Leafroller Plum Curculio Redbanded Leafroller Rosy Apple Aphid Spotted Tentiform Leafminer Tarnished Plant Bug White Apple Leafhopper | 0.1-0.25 lb a.i./A (6.4-17.6 oz/A) | Apply by ground equipment only. Apply in a minimum of 25 gallons of finished spray per acre when insects appear and repeat as necessary to maintain control. Do not apply more than 35.2 oz product (0.5 lb a.i.) per acre per season. Do not apply after petal fall. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. Do not apply at intervals less than 10 days. |

| ARTICHOKES | | |
|------------------------------------|--------------------------------------|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Artichoke Plume Moth Leafminers | 0.1-0.3 lb a.i./A (6.4-19.2 oz/A) | Apply by ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Apply as needed. Do not apply more than 57.6 oz product (0.9 lb. a.i.) per acre per season. Do not apply at intervals less than 10 days. Buds may be harvested on the day of application. |

| ASPARAGUS | | |
|---|--------------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Asparagus Beetle Cutworms | 0.05-0.1 lb a.i./A (3.2-6.4 oz/A) | Apply by ground equipment only. Apply in a minimum of 10 gallons of finished spray per acre. Use sufficient water to obtain uniform coverage. Apply as needed. Do not apply more than 25.6 oz product (0.4 lb. a.i.) per acre per season. Do not apply at intervals less than 7 days. Do not apply within 1 day of harvest. |
| Asparagus Beetle Japanese Beetle (Adult stage*) Lygus Bugs Tarnished Plant Bug | 0.1 lb a.i./A (6.4 oz/A) | For post harvest application , apply to the fern stage of the asparagus plant after spear harvest when larval and adult states are present. Do not apply more than 25.6 oz product (0.4 lbs. a.i.) per acre per season. Do not apply at intervals less than 7 days. *Not for control of this insect in California. |

| AVOCADOS | | |
|---|------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Avocado Caterpillar Avocado Lace Bug Avocado Leafhopper Avocado Leafroller Avocado Looper Avocado Tree Girdler Avocado Whitefly Brown Soft Scale Lepidopterous larvae Mirids Omnivorous Looper Orange Tortrix Scale Crawlers Spanworm Thrips Twig Borers | 0.2 lb a.i./A (12.8 oz/A) | Apply with ground equipment in a minimum of 25 gallons of finished spray per acre. Apply when insects first appear and repeat at 7 to 10 day intervals as needed to provide control. Do not apply more than 51.2 oz product (0.8 lb a.i.) per acre per season. Do not apply at intervals less than 7 days. Do not apply within 7 days of harvest. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. |

| Broccoli; Chinese Broccoli (gai lon, white flowering broccoli); Brussels Sprouts; Cauliflower; Cavalo broccolo; Kohlrabi | | |
|--|---------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Armyworm spp. | 0.05-0.1 lb a.i./A | Apply with ground equipment in a minimum of 10 gallons |

| | | |
|--|----------------|--|
| Cabbage Aphid* Cabbage Looper Diamondback Moth Imported Cabbageworm Plant Bugs Thrips | (3.2-6.4 oz/A) | of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Do not apply at intervals less than 5 days. Broccoli only: maximum rate is 12.8 oz product (0.2 lb a.i.). Do not apply more than 25.6 oz product (0.8 lb. a.i.) per acre per season. All others: maximum rate is 6.4 oz product (0.1 lb. a.i.) Do not apply more than 12.8 oz product (0.4 lb a.i.) per acre per season. Do not apply within 1 day of harvest. * Aids in suppression. |
|--|----------------|--|

| CABBAGE, CABBAGE, CHINESE (napa) (tight-heading varieties only) | | |
|--|---------------------------------------|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Cabbage Looper Diamondback Moth Imported Cabbageworm Southern White Butterfly | 0.05-0.2 lb a.i./A (3.2-12.8 oz/A) | Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Apply as needed. Do not apply more than 25.6 oz product (0.4 lb a.i.) per acre per season (51.2 oz product/0.8 lb a.i. in Hawaii). Do not apply at intervals less than 5 days. |
| Armyworm spp. Cutworms Flea Beetles | 0.1-0.2 lb a.i./A (6.4-12.8 oz/A) | Do not apply within 1 day of harvest. |

| CHERRIES (Includes Sweet Cherries and Tart Cherries) | | |
|---|--------------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Green Fruitworm Lesser Peach Tree Borer Plum Curculio Redbanded Leafroller Rose Chafer Tarnished Plant Bug | 0.1-0.2 lb a.i./A (6.4-12.8 oz/A) | Use PERM-UP 25DF as a dilute spray. Apply when insects appear. Apply with ground equipment in a minimum of 25 gallons of finished spray per acre. Do not graze livestock in treated areas. Do not apply more than 38.4 oz product (0.6 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 3 days of harvest. Do not feed cover crops from treated areas to livestock. <i>East of the Rockies</i> , do not exceed 6 applications per season, with no more than 4 applications after petal fall. <i>West of the Rockies</i> , do not make more than 4 applications per season, with no more than 3 applications after petal fall. |

| COLLARDS AND TURNIPS | | |
|--|---------------------------------------|--|
| For use on Collards in AR, AZ, GA, IL, NC, OK, SC, and TX and on Turnips in FL, GA, IL, IN, OK, SC, TX and WA | | |
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Beet Armyworm Cabbage Looper Corn Earworm Cutworms Diamondback Moth | 0.05-0.15 lb a.i./A (3.2-9.6 oz/A) | Apply with ground equipment only. Apply in a minimum of spray volume of 10 gallons of finished spray per acre. Do not apply more than 28.8 oz product (0.45 lb a.i.) per acre per season. Do not apply within 1 day of harvest. |

| | | |
|---|--|---|
| <p>European Corn Borer Fall Armyworm Green Cloverworm Imported Cabbageworm Leafhoppers Leafminer Southern Armyworm Southern White Butterfly Tobacco Budworm Vegetable Leafminer Aphids*</p> | | <p>Do not graze treated areas or feed crop refuse to livestock.</p> <p>Do not apply more than 28.8 oz product (0.45 lb. a.i.) per acre per season on Collards and Turnips (AR, TX & IN). Do not apply more than 25.6 oz product (0.4 lb. a.i.) per acre per season on Turnips (SC, GA, FL, & WA). Do not apply at intervals less than 3 days. * Suppression only.</p> |
|---|--|---|

| CORN (FIELD), FIELD CORN GROWN FOR SEED, POPCORN | | |
|--|--|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| <p>Preemergent Use: Armyworms Cutworms Stalk Borers</p> | <p>0.1-0.15 lb a.i./A (6.4-9.6 oz/A)</p> <p>OR</p> <p>0.5-1.0 oz per 1000 linear feet row (based on a 4" band and 40" row spacing)</p> | <p>PERM-UP 25DF may be applied as a preplant incorporated, preemergence, or at planting time application. Apply as a broadcast spray by ground or air (minimum of 10 gallons finished spray per acre by ground and 2 gallons per acre by air) or 4-15 inch band using sufficient spray volume to achieve adequate coverage.</p> <p>Linear row calculations should be used proportional to the standard Band Width/Row formula to adjust rates for different band widths or spacings. Use higher rates of PERM-UP 25DF when incorporating into the soil without exceeding the recommended dosage.</p> <p>When using tank mixes, observe all restrictions and precautions which appear on the labels of these products. Provide constant agitation during mixing and application to keep the mixture in solution.</p> <p>Apply in the time period from 5 days prior to planting up to emergence of the crop. Do not apply more than 28.8 oz product (0.45 lb a.i.) per season. Do not apply at intervals less than 7 days. Do not apply less than 30 days prior to harvest of grain or fodder (stover). Forage may be harvested on the day of application.</p> |
| <p>Foliar Use: Armyworm (including Fall Armyworm) Corn Borers European Southwestern Corn Earworm Corn Rootworm Beetles Cutworms Flea Beetle Hop Vine Borer Stalk Borers Tobacco Budworm</p> | <p>0.1-0.15 lb a.i./A (6.4 to 9.6 oz/A)</p> | <p>When treating for Stalk Borers, PERM-UP 25DF must be applied when or shortly before the Stalk Borer larvae are moving into the corn from surrounding weeds and grasses. Mowing or burn-down herbicides are suggested to initiate movement. For control of Corn Earworm apply just before silking and continue as necessary to maintain control. Apply a minimum of 2 gallons of finished spray per acre by air or 10 gallons per acre with ground equipment.</p> |

| | |
|---|---|
| Webworms | |
| <i>Foliar Use:</i> Western Bean Cutworm | 0.05-0.1 lb a.i./A (3.2 to 6.4 oz/A) |

| CORN (FIELD), FIELD CORN GROWN FOR SEED, POPCORN (At Plant Use) | | | |
|---|-------------------------------------|---|------|
| Target Pests | Rate Of Application | Special Directions and Restrictions | |
| Armyworms Cutworms | 0.5 oz per 1,000 linear feet of row | Apply as an in-furrow, band or T-band treatment using a minimum 4" band. Use table below to determine the PERM-UP 25DF needs for each acre. | |
| Row Spacings (inches) | | 40 | 30 |
| PERM-UP 25DF (lbs a.i. per acre) | | 0.10 | 0.15 |
| PERM-UP 25DF (formulated oz per acre) | | 6.4 | 9.6 |

| CORN, SWEET | | |
|---|---|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Corn Earworm Corn Rootworm Beetles* Cutworms European Corn Borer Fall Armyworm Flea Beetle Hop Vine Borer Leafhoppers Southern Armyworm Stalk Borers | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | Apply every 3 to 5 days as needed. Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Do not apply more than 51.2 oz product (0.8 lb a.i.) per acre per season. Do not apply at intervals less than 3 days. *Pest does not occur on this crop in California. |

| CORN, SWEET (Florida Only) | | |
|--|---|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Aster Leafhopper Corn Earworm Cutworm European Corn Borer Fall Armyworm Southern Armyworm | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | Apply every 3 to 5 days as needed. Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Do not apply more than 51.2 oz product (0.8 lb a.i.) per acre per season. Do not apply at intervals less than 3 days. |

| CUCURBIT VEGETABLES (Including Cantaloupes and Pumpkins) | | |
|---|---------------------|-------------------------------------|
| (Including Chayote (fruit) (<i>Sechium edule</i>); Chinese waxgourd (Chinese preserving melon) (<i>Bernincasa hispida</i>); Citron melon (<i>Citrullus lanatus</i> var. <i>citroides</i>); Cucumber (<i>Cucumis sativus</i>); Gherkin (<i>Cucumis anguria</i>); Gourd, edible (<i>Lagenaria</i> spp.) (includes hyotan; cucuzza); (<i>Luffa</i> spp.) (includes hechima, Chinese okra); <i>Momordica</i> spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber); Muskmelon (hybrids and/or cultivars of <i>Cucumis melo</i>) (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon); Persian melon, pineapple melon, Santa Claus melon, and snake melon; Pumpkin (<i>Cucurbita</i> spp.); Squash, summer (<i>Cucurbita pepo</i> var. <i>melo</i>) (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini); Squash, winter (<i>Cucurbita maxima</i> ; <i>C. moshata</i>) (includes butternut squash, calabaza, hubbard squash); <i>C. mixta</i> ; <i>C. pepo</i> (includes acorn squash, spaghetti squash); Watermelon (includes hybrids and/or varieties of <i>Citrullus</i> spp.)) | | |
| Target Pests | Rate Of Application | Special Directions and Restrictions |

| | | |
|---|---|--|
| Aphids Leafminers Squash Bug | 0.2 lb a.i./A (12.8 oz/A) | Apply with ground equipment in a minimum spray volume of 20 gallons of finished spray per acre or in a minimum of 4 gallons per acre by aircraft. |
| Cabbage Looper Cucumber Beetle (adults) Cutworms Leafhoppers Melonworm Pickleworm Plant Bugs (including Lygus and Stink Bugs) Rindworms Squash Vine Borer | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | Do not apply more than 76.8 oz product (1.2 lb a.i.) per acre per season (51.2 oz product/0.8 lb. a.i. for cantaloupes). Do not apply at intervals less than 7 days. Applications may be made up to harvest. |

EGGPLANT

| Target Pests | Rate Of Application | Special Directions and Restrictions |
|---|------------------------------|---|
| Colorado Potato Beetle | 0.15 lb a.i./A (9.6 oz/A) | Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or a minimum of 2 gallons per acre by aircraft. Apply using sufficient water to obtain uniform coverage. Apply as needed. |
| Cabbage Looper Flea Beetles Vegetable Leafminer | 0.15 lb a.i./A (9.6 oz/A) | Do not apply more than 38.4 oz product (0.6 lb a.i.) per acre per season (64 oz product/1.0 lb a.i. in Hawaii). Do not apply at intervals less than 7 days. Do not apply within 3 days of harvest. |

FILBERTS/HAZELNUTS

| Target Pests | Rate Of Application | Special Directions and Restrictions |
|--|-------------------------------|--|
| Filbertworm Oblique Banded Leafroller | 0.25 lb a.i./A (17.6 oz/A) | For full coverage apply 3.2 – 17.6 oz product (0.05 to 0.25 lb a.i.) per 100 gallons (based on 400 gallons finished spray per acre) and spray to run-off, OR for low volume concentrate application apply 17.6 oz product (0.25 lb a.i.) per acre (50 to 200 gallons finished spray per acre). For aerial application apply in a minimum of 10 gallons finished spray per acre. Apply when insects appear. Do not apply more than 48 oz product (0.75 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 14 days of harvest. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. |

HORSERADISH

| Target Pests | Rate of Application | Special Directions and Restrictions |
|--|------------------------------|---|
| Imported Crucifer Weevil (<i>Baris lepidii</i>) | 0.15 lb a.i./A (9.6 oz/A) | For foliar application, apply with ground equipment in a minimum spray volume of 20 gallons finished spray per acre. Make up to 3 foliar applications as needed to control weevil adults during oviposition. Do not apply more than 28.8 oz product (0.45 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 30 days of harvest. |

| LEAFY VEGETABLES (except Brassica) | | |
|--|---|---|
| (Including: Amaranth (leafy amaranth, Chinese spinach, tampala); Arugula (Roquette); Cardoon; Celery; Celery, Chinese; Celtuce; Chervil; Chrysanthemum; edible-leaved and garland; Corn salad; Cress, garden; Cress, upland (yellow rocket, winter cress); Dandelion; Dock (sorrel); Endive (escarole); Fennel, Florence (finocchio); (sweet anise, sweet fennel, finocchio)(fresh leaves and leaf petioles only); Lettuce, head and leaf*; Orach; Parsley; Purslane, garden; Purslane, winter; Radicchio (red chicory); Rhubarb; Spinach ** (including New Zealand and vine, Malabar spinach, Indian spinach); Swiss chard). | | |
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Aphids Beet Armyworm Corn Earworm Cutworms European Corn Borer Fall Armyworm Green Cloverworm Leafminers Southern Armyworm Tobacco Budworm | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | Apply every 7 days (3 days for spinach) as needed by air or ground. Use sufficient water to obtain full coverage of foliage. Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Do not apply more than 64 oz product (1.0 lb a.i.) per acre per season (76.8 oz product/1.2 lb a.i. in Hawaii). * For Lettuce (head and leaf), do not apply more than 51.2 oz product (0.8 lb. a.i.) per acre per season. **For Spinach (including New Zealand and vine, Malabar spinach, Indian spinach), do not apply more than 38.4 oz product (0.6 lb a.i.) per acre per season. |
| Alfalfa Looper Cabbage Looper Leafhoppers | 0.05 to 0.2 lb a.i./A (3.2 to 12.8 oz/A) | Do not apply at intervals less than 7 days (3 days for Spinach). Do not apply within 1 day of harvest. |

| MUSHROOMS (Mushroom houses and adjacent premises areas) | | |
|--|--|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Mushroom Flies (Sciarid and Phorid adults) | Apply 6 oz product (0.1 lb a.i.) in 11 gallons of water or 8 level tablespoons in 3 gallons of water. As a guide, use 1 gallon spray per 750 sq. ft. (400-1,400 sq. ft.) | Spray directly to walls and ceilings as residual surface treatment only. Spray to point of runoff. Use PERM-UP 25DF prior to filling house, during cooldown, during spawning, up to pinning and between breaks. Do not use when mushrooms are present. Treat as needed when flies appear. Use of high pressure hand wand is prohibited in mushroom houses. Do not make more than 20 applications prior to pinning of first break; apply no more than two applications between each break. Do not apply more than 30 applications total per crop of 5 breaks. Do not apply within 3 days of harvest. |

| ONIONS, BULB AND GARLIC | | |
|---|--|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Armyworms Cutworms Leafminers Onion Maggots (Adults) Onion Thrips Stink Bugs | Onion: 0.15-0.3 lb a.i./A (9.6 to 19.2 oz/A) Garlic: 0.15-0.2 lb a.i./A (9.6-12.8 oz/A) | Apply with ground equipment in a minimum of 20 gallons of finished spray per acre or in a minimum of 5 gallons per acre by aircraft. Begin applications when pests appear and repeat as necessary to maintain control. Use the higher label rates as Onion Thrips population increases and avoid rescue situations. Onions: do not apply more than 64 oz product (1.0 lb a.i.) per acre per season. Do not apply at intervals less than 7 days. |

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| | | Garlic: do not apply more than 51.2 oz product (0.8 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. |
| | | Do not apply within 1 day of harvest. |

| PAPAYA (Florida use only) | | |
|---|--------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Aphids Brown Soft Scale Mealybug Papaya Fruit Fly Papaya Webworm Papaya Whitefly Scale Crawlers | 0.15 lb a.i./A (9.6 oz/A) | Apply with ground equipment in a minimum of 25 gallons of finished spray per acre. Apply when insects first appear and repeat at 10 day intervals as needed to provide control. Do not apply more than 48 oz product (0.75 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 7 days of harvest. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. |

| PEACHES, NECTARINES | | |
|--|--|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Green Fruitworm Lesser Peach Tree Borer Oriental Fruit Moth Peach Twig Borer Rose Chafer Plum Curculio Tarnished Plant Bug | 0.1-0.25 lb a.i./A (6.4 to 17.6 oz/A) | Apply with ground equipment using a minimum of 25 gallons of finished spray per acre or a minimum of 10 gallons per acre by aircraft. Spray to wet all foliage. Do not apply more than 48 oz product (0.75 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 14 days of harvest. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. |

| PEARS (Dormant through Delayed Dormant) | | |
|--|---|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Pear Psylla | 0.2-0.25 lb a.i./A (12.8 to 17.6 oz/A) | Apply during the dormant through delayed dormant growth periods only. Apply in a minimum of 10 gallons of finished spray per acre by aircraft or a minimum of 25 gallons per acre by ground equipment. Use sufficient water to obtain uniform coverage. Do not apply more than 41.6 oz product (0.65 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. |

| PEARS (Pre-Bloom) | | |
|--|--------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Codling Moth Green Fruitworm Pear Psylla | 0.25 lb a.i./A (17.6 oz/A) | Apply with ground equipment using a minimum of 25 gallons of finished spray per acre or a minimum of 10 gallons per acre by aircraft. Pre-bloom sprays can be applied from dormant through bud burst stages. Use sufficient water to obtain uniform coverage. Apply two pre-bloom sprays. Do not apply more than 41.6 oz product (0.65 lb a.i.) per |

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| | | <p>acre per season. Do not apply at intervals less than 10 days. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock.</p> |
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| PEPPERS, BELL | | |
|--|---|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Cabbage Looper Corn Earworm Cutworms Flea Beetles Pepper Weevil Vegetable Leafminer | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | Apply using sufficient water to obtain uniform coverage. Apply as needed. Apply with ground equipment using a minimum of 10 gallons of finished spray per acre or a minimum of 2 gallons per acre by aircraft. Do not apply more than 51.2 oz product (0.8 lb a.i.) per acre per season. Do not apply at intervals less than 5 days. |
| European Corn Borer | 0.2 lb a.i./A (12.8 oz/A) | Do not apply within 3 days of harvest. |

| PISTACHIOS | | |
|--|--|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Chinch Bug Leaf-footed Bugs Navel Orangeworm Peach Twig Borer Plant Bugs Stink Bugs | 0.2-0.3 lb a.i./A (12.8 to 19.2 oz/A) | Use sufficient water to obtain full coverage of foliage. Apply PERM-UP 25DF in a minimum of 10 gallons of finished spray per acre by aircraft or by ground equipment in a minimum of 25 gallons of finished spray per acre. Use sufficient water to obtain full coverage of foliage. |
| Ants | 0.3 lb a.i./A (19.2 oz/A) | Application should be after mowing of weed growth to insure maximum coverage of the soil surface. Overhead moisture after application will enhance activity. Do not apply more than 57.6 oz product (0.9 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Nuts may be harvested on the day of application. Do not apply after 10% hull split. Do not graze livestock in treated areas. Do not feed cover crops from treated areas to livestock. |

| POTATOES | | |
|--|---|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Aster Leafhopper Beet Armyworm Cabbage Looper Colorado Potato Beetle Cutworms European Corn Borer Potato Aphid Potato Flea Beetle Potato Leafhopper Potato Psyllid Potato Tuberworm Tarnished Plant Bug | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Use sufficient spray volume to obtain full coverage. Apply as needed. Do not apply more than 51.2 oz product (0.8 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 14 days of harvest. |

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| RANGE GRASS (New Mexico Only) |
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| Target Pests | Rate Of Application | Special Directions and Restrictions |
|-------------------|-------------------------------|--|
| Range Caterpillar | 0.01 lb a.i./A (0.64 oz/A) | Apply using sufficient water to obtain uniform coverage. Apply with ground equipment using a minimum of 10 gallons of finished spray per acre or a minimum of 2 gallons per acre by aircraft. Do not apply more than once per year. Cattle may be present during application. Do not harvest or feed hay to livestock. |

| SOYBEANS | | |
|--|---|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Bean Leaf Beetle Cabbage Looper Corn Rootworm Beetles Cutworms Flea Beetles Green Cloverworm Japanese Beetle Mexican Bean Beetle Potato Leafhopper Saltmarsh Caterpillar (Woollybear Caterpillar) Thistle Caterpillar Velvetbean Caterpillar | 0.05-0.1 lb a.i./A (3.2 to 6.4 oz/A) | Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Do not apply more than 25.6 oz product (0.4 lb a.i.) per acre per season. Do not apply at intervals less than 10 days. Do not apply within 60 days of harvest. Do not graze treated areas or feed soybean forage or hay. |
| Beet Armyworm Corn Earworm Soybean Looper Webworms | 0.1-0.2 lb a.i./A (6.4 to 12.8 oz/A) | |

| TOMATOES, TOMATILLOS | | |
|--|--|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Beet Armyworm Cabbage Looper Colorado Potato Beetle Granulate Cutworm Hornworms Southern Armyworm Tomato Fruitworm Tomato Pinworm Vegetable Leafminers | 0.05-0.2 lb a.i./A (3.2 to 12.8 oz/A) | Apply with ground equipment in a minimum of 10 gallons finished spray per acre or in a minimum of 2 gallons per acre by aircraft. Use sufficient water to obtain uniform coverage. Do not apply more than 38.4 oz product (0.6 lb a.i.) per acre per season (51.2 oz product/0.8 lb a.i. in Hawaii). Do not apply at intervals less than 10 days. May be applied up to the day of harvest. Do not apply to cherry tomatoes or other varieties which produce fruit less than one inch in diameter. |

| WALNUTS | | |
|---|-------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Codling Moth Navel Orangeworm Walnut Husk Fly | 0.25 lb a.i./A (17.6 oz/A) | For full coverage apply 0.05 to 0.1 lb a.i. per 100 gallons (based on 400 gallons finished spray per acre), spray to run-off; OR, for low volume application apply 0.25 lb a.i. per acre (25-200 gallons finished spray per acre). For aerial application, apply 0.25 lb a.i. in a minimum of 10 gallons of finished spray per acre. Use sufficient water to obtain uniform coverage. Apply when insects appear. |

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| | | <p>Do not apply more than 48 oz product (0.75 lb a.i.) per acre per season.</p> <p>Do not apply at intervals less than 10 days.</p> <p>Do not apply within 1 day of harvest.</p> <p>Do not graze livestock in treated areas.</p> <p>Do not feed cover crops from treated areas to livestock.</p> |
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ORNAMENTALS

| CHRYSANTHEMUMS (Florida Only) | | |
|--------------------------------------|---|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Liriomyza Leafminer Flies | 0.5 lb a.i. per 100 gallons of water (32 oz per 100 gallons of water) | Avoid spraying the blooms. PERM-UP 25DF may be applied on a weekly schedule. Caution: Cultivars may vary in sensitivity and a small number of plants should be treated to determine plant safety prior to commercial use. |

| CONIFERS (Container and Field Grown) | | |
|---|------------------------------------|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Nantucket Pine Tip Moth | 0.1-0.2 lb a.i./A (6.4-12.8 oz /A) | Begin application when adults appear and repeat at 5 to 7 day intervals or as needed throughout the season. Use sufficient water to obtain full coverage of foliage. |

| ORNAMENTAL NURSERY STOCK (Field Grown) | | |
|---|--|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Bagworm Beet Armyworm Cabbage Looper Citrus Thrips <i>Heliothis</i> spp. Lace Bug Leafhoppers Leafminers Whiteflies | 0.1-0.2 lb a.i. per 100 gallons of water (6.4 to 12.8 oz per 100 gallons of water) | PERM-UP 25DF may be used to control specified pests on non-edible ornamentals and non-bearing plants of fruiting species. Caution: PERM-UP 25DF has demonstrated excellent plant safety; however, not all species and varieties have been tested. Before treating large numbers of a particular variety, treat a few plants and observe prior to full scale application. |

| PINE SEED ORCHARDS | | |
|--|--|---|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Coneworms Seed Bugs | 0.2 lb a.i. per 100 gallons of water (12.8 oz in 100 gal of water; 0.025% dilution by weight) | For high volume sprayers, apply 5 to 10 gallons of finished spray per tree. |
| | 1.6 lb a.i. in 100 gallons of water (66 oz in 100 gallons of water; 0.125% dilution by weight) | For low volume sprayers, apply 100 gallons per acre. |
| | 1.2 lb a.i./A (48 oz/A) | For aerial application, use in not less than 10 gallons of water. |
| To control Webbing Coneworm – make first application within 1 week of female flower closure or peak pollen | | |

flight.
 To control other coneworms and seed bugs – make first application within 30 days following female flower closure. Repeat applications at 4 week intervals, but do not make more than 6 applications.
 Do not graze livestock in treated areas.
 Do not feed cover crops from treated areas to livestock.
 Harvesting of conifer seed is prohibited within 30 days of application.
 Avoid contact with open water.

| ROSES (Field Grown) | | |
|-----------------------|--|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| <i>Heliothis</i> spp. | 0.1 to 0.2 lb a.i./A (6.4 to 12.8 oz/A) | Apply with ground equipment in a minimum of 10 gallons of finished spray per acre or in a minimum of 2 gallons per acre by aircraft. |

| ROSES (Greenhouse) | | |
|--|---|--|
| Target Pests | Rate Of Application | Special Directions and Restrictions |
| Beet Armyworm Cabbage Looper Omnivorous Leafroller | 0.2 lb a.i. (12.8 oz) per 100 gallons of water using standard spray equipment | Caution: Varieties may vary in their sensitivity to PERM-UP 25DF, and a small number of plants should be treated under local conditions to determine plant safety prior to commercial use. |

| ORNAMENTALS | | | |
|--|---|----------------------------------|---|
| Ornamental | Target Pests | Rate of Application | Special Directions and Restrictions |
| Asparagus Fern | Japanese Beetle Asparagus Beetle Lygus Bugs | 0.1 lb a.i. (6.4 oz) | Apply when larval and adult stage of the asparagus beetle, lygus bugs and the adult stage of the Japanese beetle are present. |
| Christmas Trees (container and field grown) | Nantucket Pine Tip Moth | 0.1-0.2 lb a.i. (6.4-12.8 oz) | Apply first application when adults appear and repeat at 5-7 day intervals or as needed throughout the season. Use sufficient water to obtain full coverage of foliage. |

| PREMISES SPRAY | | | | |
|--|-----------------------|---|--|--|
| For Application in: Dairies, Barns, Feedlots, Stables, Poultry Houses, Swine and Livestock Houses | | | | |
| Target Pests | Method of Application | Dilute | Application Rate | Special Directions and Restrictions |
| House Flies Stable Flies and other Manure Breeding Flies Also aids in the reduction of Cockroaches, Mosquitoes and Spiders | Sprayer | 6 oz* per 11 gallons water or 8 level tablespoons per 3 gallons of water (* 1 oz of this powder equals 5 level teaspoonfuls. Make up only as required) | 1 gallon per 750 square feet of surface area | For agricultural use only. Spray directly to walls and ceiling as residual surface treatment only. Do not treat manure or litter. Avoid contamination of feed and water. Do not apply directly to livestock or poultry. Re-treat as necessary but not more often than once every 2 weeks. The use of any residual fly spray should be supplemental with proper manure management and general sanitation to reduce or eliminate fly breeding sites. Note: spoons must not be used for food purposes after use in measuring pesticides. |

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| RATE CONVERSION CHART | | |
|-----------------------|-----------------------------|-----------------------------|
| Pounds A.I. per Acre | Formulation Ounces per Acre | Formulation Pounds per Acre |
| 0.05 | 3.2 | 0.2 |
| 0.10 | 6.4 | 0.4 |
| 0.125 | 8.0 | 0.5 |
| 0.15 | 9.6 | 0.6 |
| 0.175 | 11.2 | 0.7 |
| 0.20 | 12.8 | 0.8 |
| 0.40 | 25.6 | 1.6 |

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not reuse empty container.

Pesticide Storage: Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not put concentrate or dilute material into food or drink containers.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Dealer Must Sell in Original Package Only.

**IMPORTANT INFORMATION
READ BEFORE USING PRODUCT**

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and 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.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

To the extent consistent with applicable law, United Phosphorus, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or United Phosphorus, Inc., and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, UNITED PHOSPHORUS, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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To the extent consistent with applicable law, United Phosphorus, Inc. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product and **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED PHOSPHORUS, INC. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF UNITED PHOSPHORUS, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

United Phosphorus, Inc. and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by the duly authorized representative of United Phosphorus, Inc.