

45728-12

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Vincent J. Piccirillo, Ph.D.
Authorized Agent for Taminco US Inc.
c/o VJP Consulting Inc.
21320 Sweet Clover Place
Ashburn, Virginia 20147

DEC 12 2014

Subject: Label Amendment – Deletion "Blackberry"; addition "Net Weight"; correction of Registrant name
Product Name: Ziram Granuflo Fungicide
EPA Registration Number: 45728-12
Application Date: 14-Mar-2014
Decision Number: 491571

Dear Mr. Piccirillo:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

The Agency acknowledges the following label changes:

- Deletion of Blackberry Use
- Addition of "Net Weight"
- Correction of Registrant Name

At the request of the Registrant, "deletion of uses" for Ziram on Blackberry was published in the Federal Register October 17, 2014.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration

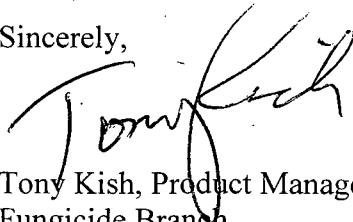
2/17

process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions, please contact Tony Kish by phone at 703 308-9443, or via email at kish.tony@epa.gov; or you may contact Craig Reeves by phone at 703 347-0486, or via email at reeves.craig@epa.gov.

Sincerely,



Tony Kish, Product Manager 22
Fungicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure: Stamped "Accepted" Label

3/17



Ziram Granuflo® Fungicide

ACTIVE INGREDIENT:

Ziram (zinc dimethyl dithiocarbamate) * 76.0%

OTHER INGREDIENTS:..... 24.0%

..... TOTAL 100.0%

* Zinc expressed as metallic..... 16.25%

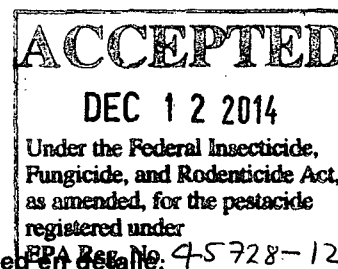
EPA Reg. No. 45728-12

EPA Est. No. 32557-BEL-1

EPA Est. No. 72178-SC-001

NET WEIGHT:

**KEEP OUT OF REACH OF CHILDREN
DANGER**



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

EPA Reg. No. 45728-12

FIRST AID

| | |
|-------------------------------|--|
| IF IN EYES | <ul style="list-style-type: none"> ◆ Hold eye open and rinse slowly and gently with water for 15-20 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 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 mouth-to-mouth if possible. ◆ Call a poison control center or doctor for further 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. |
| IF ON SKIN OR CLOTHING | <ul style="list-style-type: none"> ◆ Take off contaminated clothing. ◆ Rinse skin immediately with plenty of water for 15-20 minutes. ◆ Call a poison control center or doctor for treatment advice. |

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For Emergencies involving a Spill, Leak, Fire, Exposure, or Accident, Contact: CHEMTREC at (800) 424-9300. For product usage information, phone Taminco US Inc., toll free at (800) 223-3258 from 9:00 AM to 5:00 PM Eastern time.

NOTE TO PHYSICIAN

Possible mucosal damage may contraindicate the use of gastric lavage.

See Other Panels for Additional Precautionary Statements.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Harmful if swallowed or absorbed through skin. Do not breathe dust or spray mist. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for Category A on an EPA chemical-resistant category selection chart.

Pilots applying this product in an enclosed cockpit must wear:

- Long sleeved shirt and long pants, and
- Shoes plus socks.

All other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks,
- Goggles, face shield or safety glasses,
- Chemical-resistant gloves, and
- A dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N, R, P or HE filter.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

See engineering controls for additional requirements.

Engineering Control Statements:

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 the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

GENERAL USE INFORMATION

Ziram Granuflo is a broad spectrum fungicide for the control of certain diseases in fruit and nut crops, and ornamentals. Taminco US Inc.'s recommendations for the use of this product are based upon tests believed to be reliable. Ziram Granuflo is not for residential use. **FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL, OR ILLEGAL RESIDUES.** Read entire label carefully and use only as directed.

Ziram Granuflo is effective against many fungal diseases and is non phytotoxic to labeled crops. It is compatible with most commonly used pesticides and adjuvants. It may be used with systemic fungicides, such as TOPSIN® M, for broad-spectrum disease control and can be used in Integrated Pest Management (IPM) programs.

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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not discharge effluent containing the product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA. Do not contaminate water when disposing of equipment wash waters.

CHEMIGATION: Do not apply this product through any type of irrigation system

GENERAL PRECAUTIONS AND RESTRICTIONS

Do not apply this product in a way that will contact any person, pet, either directly or through drift.

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 (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 48 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
- Protective eye wear
- Chemical-resistant headgear for overhead exposure

DIRECTIONS AND RECOMMENDATIONS:

Use recommended rates for concentrate, dilute and aerial applications. For dilute application, use Ziram Granuflo® at the recommended rates per 100 gallons. Ground application is preferred, especially when full canopy of foliage exists. ZIRAM GRANUFLO® may be applied as a concentrate in a minimum of 20 gallons or more of spray solution per acre by ground spray equipment or in a minimum of 10 gallons or more per acre by aircraft equipment. Increase spray volume and fungicide rate (according to labeling specifications) as crop growth increases to ensure thorough coverage and adequate protection of the foliage and fruit. Under low disease conditions, minimum label rates per application should be used, however, maximum label rates and shortened spray schedules are recommended for severe or threatening disease conditions.

Complete coverage and uniform application are essential for the most effective results, especially when lower spray volumes are applied. Be sure spray equipment is clean before use. If it is contaminated with any material, crop injury or sprayer clogging may result. Calibrate spray equipment before use. Attention should be given to sprayer speed and calibration, wind speed, and tree and vine canopy to ensure adequate spray coverage with ZIRAM GRANUFLO®.

For dilute application, use ZIRAM GRANUFLO® at the recommended rates per 100 gallons. For concentrate ground application, use ZIRAM GRANUFLO® at the recommended rate per acre. The following should be used to determine the equivalent amount of product per acre in 1/2X, 1X, 2X, 3X, 4X (where X = per 100 gal), etc. spray solutions:

| POUNDS ZIRAM GRANUFLO® FUNGICIDE PER ACRE FOR DILUTE AND CONCENTRATE SPRAYS | | | |
|---|------------|---------------------------------|---------------|
| POME FRUIT (APPLE) | | STONE FRUIT (PEACH & NECTARINE) | |
| 1/2 X or 50 gal/acre | 6 lbs/acre | 1/2 X or 50 gal/acre | 3.75 lbs/acre |
| 1X or 100 gal/acre | 6 lbs/acre | 1X or 100 gal/acre | 3.75 lbs/acre |
| 2X or 200 gal/acre | 6 lbs/acre | 2X or 200 gal/acre | 3.75 lbs/acre |
| 3X or 300 gal/acre | 6 lbs/acre | 3X or 300 gal/acre | 3.75 lbs/acre |
| 4X or 400 gal/acre | 6 lbs/acre | 4X or 400 gal/acre | 3.75 lbs/acre |

Where ZIRAM GRANUFLO® rate per acre is not available, the following can be used to determine dilute and concentrate sprays per acre use rates based on per 100 gallon volume use rates.

Examples:

- 1) A vineyard consisting of mature grapevines requires 3 to 4 pounds of ZIRAM GRANUFLO® per acre for adequate black rot, downy mildew, phomopsis cane and leaf spot, ripe rot and botrytis bunch rot control. The following table reflects how the rates are equivalent comparing both dilute and concentrate applications

| POUNDS ZIRAM GRANUFLO® FUNGICIDE DILUTE AND CONCENTRATE SPRAYS BASED ON PER 100 GALLON RECOMMENDATION | | |
|---|--------------------------|----------------------------------|
| CROP | DILUTE (PER 100 GALLONS) | CONCENTRATE (PER 20-100 GALLONS) |
| Grape (Eastern U.S.) | 3 - 4 lbs/acre | 3 - 4 lbs/acre |

- 2) A blueberry field consisting of mature blueberries requires 3 pounds of ZIRAM GRANUFLO® per acre for adequate mummyberry control. The following table reflects how the rates are equivalent comparing both dilute and concentrate applications:

| POUNDS ZIRAM GRANUFLO® FUNGICIDE DILUTE AND CONCENTRATE SPRAYS BASED ON PER 100 GALLON RECOMMENDATION | | |
|---|--------------------------|----------------------------------|
| CROP | DILUTE (PER 100 GALLONS) | CONCENTRATE (PER 20-100 GALLONS) |
| Blueberries | 3 lbs/acre | 3 lbs/acre |

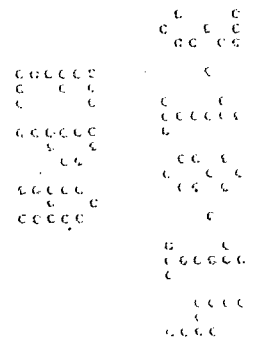
These rate recommendations can be used in concentrate, dilute and aerial applications. Ground application is preferred, especially when full canopy or foliage exists.

IMPORTANT: When spraying, thorough coverage is necessary to provide good disease control. Make new dilutions for each spraying. If a spreader/sticker is added to the finished spray mixture, do not use for pre-harvest sprays. Also, it is not recommended that a spreader/sticker be used on fruit that will not be washed following harvest and prior to commercial pack-out. The use of a spreader/sticker for applications to apricots is not recommended for risk of adverse effects to fruit finish.

MIXING INSTRUCTIONS

To mix, fill the spray tank about 2/3 full of water, and with agitator running, slowly sift in the required amount of Ziram Granuflo®. Finish filling the tank with water and let mixing continue in the tank until thoroughly mixed. Continue agitation and apply immediately.

Do not graze or feed cover crops from treated orchards



STORAGE AND DISPOSAL

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

Pesticide Storage

Keep away from fire and sparks.

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. Do not put concentrate or dilute material into food or drink containers.

In case of spill: Avoid contact, isolate area and keep out animals and unprotected persons. Confine spills.

For Emergencies Involving a Spill, Leak, Fire, Exposure, or Accident, contact: CHEMTREC at (800) 424-9300. For product usage information, phone Taminco US Inc., toll free at (800) 223-3258 from 9:00 AM to 5:00 PM Eastern time.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter, or commercial clay. Sweep up material and dispose according to Pesticide Disposal. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide 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 Handling (44 lb. bags): Non-refillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling, if available, or 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.

Container Handling (10 lb. lined cardboard boxes)

Nonrefillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling, if available, or dispose of liner in a sanitary landfill or by incineration or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. If box is contaminated and cannot be reused, dispose of it in the manner required for its liner.

TERMS OF SALE OR USE

On purchase of this product, buyer and user agree to the following conditions:

Warranty: Taminco US Inc. makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted, the product is sold as is. To the extent consistent with applicable law, buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

Damages: To the extent consistent with applicable law, buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

ZIRAM GRANUFLO® APPLICATION INFORMATION SPECIFIC TO CROP

| FRUIT AND NUT TREE CROPS | DISEASES | POUNDS ZIRAM GRANUFLO® | | DIRECTIONS FOR USE |
|--------------------------|---|------------------------|--------------------------|---|
| | | per acre | per 100 gal | |
| ALMONDS | Brown Rot Blossom Blight and Twig Blight (Monilinia spp.) Leaf Blight (Seimatosporium lichenicola) Scab (Cladosporium carpophilum) Shot Hole (Coryneum Blight) (Stigmia Carpophilum) Anthracnose | 8 lbs | 2 2/3 lbs ⁽³⁾ | Apply pre-bloom through petal fall periods. Do not apply later than 5 weeks after petal fall. Do not apply more than 32 lbs/A per crop cycle. ⁽⁴⁾ |
| APPLES | Apple Scab (Venturia inaequalis) Cedar Apple Rust ⁽¹⁾ , Quince Rust ⁽¹⁾ (Gymnosporangium spp.) Sooty Blotch ⁽¹⁾ (Gloeodes pomigena) Fly Speck ⁽¹⁾ (Schizothyrium perexiguum) Bitter Rot ⁽¹⁾ Glomerelia circulata) Necrotic Leaf Blotch | 6 lbs | 1 1/2 lbs ⁽²⁾ | Apply pre-bloom and calyx sprays. Do not apply within 14 days of harvest. East of the Rockies: Do not apply more than 6 lbs. (4.6 lbs A.I.)/A per application. Do not apply more than 42.4 lbs (32.2 lbs. A.I.)/A per crop cycle. No more than 7 applications per crop cycle. Aerial application is prohibited. West of the Rockies: Do not apply more than 6 lbs. (4.6 lbs A.I.)/A per application. Do not apply more than 24.2 lbs (18.4 lbs. A.I.)/A per crop cycle. No more than 4 applications per crop cycle. Aerial application allowed for pre-harvest application only. ⁽⁴⁾ |
| | Bull's-Eye Rot (Pacific Northwest only) (Pezicula malicorticis) | 6 lbs | 1 1/2 lbs ⁽²⁾ | Apply in the first cover spray and in pre-harvest spray before fall rains begin. Do not apply within 14 days of harvest. Do not apply more than 6 lbs. (4.6 lbs. A.I.)/A per application. Do not apply more than 24.2 lbs. (18.4 lbs A.I.)/A per crop cycle. No more than 4 applications per crop cycle ⁽⁴⁾ . Aerial application allowed for pre-harvest application only. |
| | Perennial Canker (Neofabraea perennans) | 6 lbs | 1 1/2 lbs ⁽²⁾ | Apply pre-bloom and calyx sprays. Do not apply within 14 days of harvest. East of the Rockies: Do not apply more than 6 lbs. (4.6 lbs. A.I.)/A per application. Do not apply more than 42.4 lbs (32.2 lbs. A.I.)/A per crop cycle. No more than 7 applications per crop cycle. Aerial application is prohibited. West of the Rockies: Do not apply more than 6 lbs. (4.6 lbs A.I.)/A per application. Do not apply more than 24.2 lbs. (18.4 lbs A.I.)/A per crop cycle ⁽⁴⁾ . No more |

| | | | |
|---|--|---|--|
| | | | than 4 applications per crop cycle. Aerial application allowed for pre-harvest application only. |
| APRICOTS | Brown Rot Blossom Blight, Twig Blight, and Fruit Rot (Monilinia spp.) Shot-Hole (stigmia carpophila) | 6 to 8 lbs (except CA) 8 lbs (CA only) | 2 to 2 2/3 lbs ⁽³⁾ 2 2/3 lbs |
| CHERRIES East of the Rockies | Brown Rot Blossom Blight, Twig Blight, and Fruit Rot (Monilinia spp.) Leaf Spot (Blumeriella jaapii) Black Knot | 5 to 6 lbs | 1 2/3 to 2 lbs ⁽³⁾ |
| CHERRIES West of the Rockies, except CA | Brown Rot Blossom Blight, Twig Blight and Fruit Rot (Monilinia spp.) Leaf Spot ⁽¹⁾ (Blumeriella jaapii) | 4 to 6 lbs (except CA) | 1 1/3 to 2 lbs ⁽³⁾ |
| CHERRIES CA only | Brown Rot Leaf Spot | 5 lbs | 1 2/3 lbs ⁽³⁾ |
| PEACHES AND NECTARINES East of the Rockies | Brown Rot Blossom Blight, Twig Blight and Fruit Rot (Monilinia spp.) Peach Scab, Red Spot, Sooty Peach | 4 1/2 to 8 lbs | 1 1/2 to 2 2/3 lbs ⁽³⁾ |

| | | | | |
|---|---|-----------------------------------|--|---|
| | Peach Blight (i.e. Shot Hole) (<i>Stigmina carpophila</i>) | 4 ½ to 8 lbs | 1 ½ to 2 2/3 lbs ⁽³⁾ | Apply at pre-bloom through cover sprays as needed. In addition to spray program, apply 8 lbs/A in the fall before the heavy rains. Do not apply within 14 days of harvest. Do not apply more than 8 lbs (6.1 lbs. A.I.)/A per application. Do not apply more than 48.2 lbs. (36.6 lbs A.I.)/A per crop cycle. No more than 6 applications per crop cycle ⁽⁴⁾ . Aerial application is prohibited. |
| | Peach Leaf Curl (<i>Taphrina deformans</i>) | 3 ¾ to 8 lbs | 1 ¼ to 2 2/3 lbs ⁽³⁾ | Make dormant applications after leaf drop and/or prior to bud swell. Do not apply more than 8 lbs (6.1 lbs A.I.)/A per application. Do not apply more than 48.2 lbs (36.6 lbs A.I.)/A per crop cycle. No more than 6 applications per crop cycle ⁽⁴⁾ . Aerial application is prohibited. Do not apply within 14 days of harvest. |
| PEACHES AND NECTARINES West of the Rockies | Brown Rot Blossom Blight, Twig Blight and Fruit Rot (<i>Monilinia</i> spp.) | 6 lbs | 2 lbs ⁽³⁾ | Apply at pre-bloom through cover sprays as needed. Do not apply more than 6 lbs (4.6 lbs A.I.)/A per application. Do not apply more than 36.3 lbs (27.6 lbs A.I.)/A per crop cycle. No more than 6 applications per crop cycle ⁽⁴⁾ . Do not apply within 30 days of harvest. |
| | Peach Blight (i.e. Shot Hole) (<i>Stigmina carpophila</i>) | 6 lbs | 2 lbs ⁽³⁾ | Apply at pre-bloom through cover sprays as needed. Do not apply more than 6 lbs (4.6 lbs A.I.)/A per application. Do not apply more than 36.3 lbs (27.6 lbs A.I.)/A per crop cycle. No more than 6 applications per crop cycle ⁽⁴⁾ . Do not apply within 30 days of harvest. |
| | Peach Leaf Curl (<i>Taphrina deformans</i>) | 8 to 10 lbs 8 lbs (CA only) | 2 2/3 to 3 1/3 lbs ⁽³⁾ 2 2/3 lbs ⁽³⁾ | Make dormant applications after leaf drop and/or prior to bud swell. Do not apply more than 10 lbs (7.6 lbs. A.I.)/A per application. Do not apply more than 30 lbs. (25.6 lbs A.I.)/A per crop cycle. No more than 6 applications per crop cycle. ⁽⁴⁾ |
| PEARS | Pear Scab (<i>Venturia pyrina</i>) Quince Rust ⁽¹⁾ (<i>Gymnosporangium</i> spp.) Sooty Blotch ⁽¹⁾ (<i>Gloeodes pomigena</i>) Fly Speck ⁽¹⁾ (<i>Schizothyrium pomi</i>) Bitter Rot ⁽¹⁾ (<i>Glomerella cingulata</i>) Fabraea Leaf Spot ⁽¹⁾ | 6 lbs | 1 ½ to 2 lbs ⁽²⁾ | Apply from pre-bloom through cover sprays as needed. Aerial application allowed only as a pre-harvest application. East of the Rockies: The maximum allowable rate per application is 6 lbs. (4.6 lbs. A.I.)/A. The maximum allowable rate per crop cycle is 42.4 lbs. (32.2 lbs. A.I.)/A. The maximum number of applications |

| | | | | |
|---------------|---|------------|---------------------------------|--|
| | (Diplocarpon mespili) | | | per crop cycle is 7. ⁽⁴⁾ Do not apply within 14 days of harvest. West of the Rockies: The maximum allowable rate per application 6 lbs. (4.6 lbs. A.I.)/A. The maximum allowable rate per crop cycle is 24.2 lbs. (18.4 lbs. A.I.)/A. the maximum number of applications per crop cycle is 4. ⁽⁴⁾ Do not apply within 5 days of harvest. |
| | Bull's Eye Rot (Pacific Northwest only) (Pezizula malicorticis) | 6 lbs | 1 ½ lbs ⁽²⁾ | Apply in the first cover spray and in pre-harvest spray before fall rains begin. Do not apply within 5 days of harvest. The maximum allowable rate per application 6 lbs. (4.6 lbs. A.I.)/A. The maximum number of applications per crop cycle is 24.2 lbs. (18.4 lbs. A.I.)/A. The maximum number of applications per crop cycle is 4. ⁽⁴⁾ Aerial application allowed only as a pre-harvest application. |
| | Storage Rot (Phialophora malorum) | 6 lbs | 1 ½ lbs ⁽²⁾ | Apply as a pre-harvest spray. Aerial application allowed only as a pre-harvest application. East of the Rockies: The maximum allowable rate per application is 6 lbs. (4.6 lbs. A.I.)/A. The maximum allowable rate per crop cycle is 42.4 lbs. (32.2 lbs. A.I.)/A. The maximum number of applications per crop cycle is 7. ⁽⁴⁾ Do not apply with 14 days of harvest. West of the Rockies: The maximum allowable rate per application 6 lbs. (4.6 lbs. A.I.)/A. The maximum allowable rate per crop cycle is 24.2 lbs. (18.4 lbs. A.I.)/A. the maximum number of applications per crop cycle is 4. ⁽⁴⁾ Do not apply within 5 days of harvest. |
| PECANS | Pecan Scab (Cladosporium effusum) Anthracoese (Glomerella cingulata) | 6 to 8 lbs | 1 ½ to 2 2/3 lbs ⁽³⁾ | Begin applications when leaves are ¼ to ½ inches long. Repeat after pollination is complete for up to 5 cover sprays at 3-4 week intervals. Do not apply more than 8 lbs. (6.1 lbs. A.I.)/A. per application. Do not apply more than 48.2 lbs. (36.6 lbs. A.I.)/A. per crop cycle. ⁽⁴⁾ No more than 6 applications per crop cycle. Do not apply within 55 days of harvest. Aerial application is prohibited. |

ZIRAM GRANUFLO® APPLICATION INFORMATION SPECIFIC TO CROP

| SMALL FRUIT AND VEGETABLE CROPS | DISEASES | POUNDS ZIRAM GRANUFLO® | | DIRECTIONS FOR USE |
|---|--|------------------------|-------------|---|
| | | per acre | per 100 gal | |
| Blueberries ⁽¹⁾ | Mummyberry (Monilinia vaccinii-corymbosi) Phomopsis (Twig Blight, Cane and Stem Canker) Anthracnose Fruit Rot (Ripe Rot) Botrytis (aids in control) | 3 lbs | 3 lbs | Apply in sufficient water for thorough coverage. Apply at loose bud scale stage and 7 days later. Do not apply later than 3 weeks after full bloom. Aerial application is prohibited. |
| GRAPE East of the Rockies | Black Rot (Guignardia bidwellii) Downy Mildew (Plasmopara viticola) Phomopsis Cane and Leaf Spot (Phomopsis viticola) Ripe Rot (Glomerella cingulata) Botrytis Bunch Rot (Botrytis cinerea) (aides in control) | 3 to 4 lbs | 3 to 4 lbs | Begin applications when shoots are at least 1 inch long and continue at 7-14 day intervals or as necessary according to the integrated pest management guidelines for the particular growing area. Use shorter intervals under heavy disease pressure. Do not apply more than 28 lbs per acre per crop cycle. Do not apply later than 21 days to harvest. Aerial application is prohibited. |
| GRAPE West of the Rockies | Black Rot (Guignardia bidwellii) Downy Mildew (Plasmopara viticola) Phomopsis Cane and Leaf Spot (Phomopsis viticola) Ripe Rot (Glomerella cingulata) Botrytis Bunch Rot (Botrytis cinerea) (aides in control) | 3 to 4 lbs | 3 to 4 lbs | Apply when shoots are ½ to 1 ½ inches long and repeat at 7-10 day intervals as needed. Do not apply after bloom. Do not apply within 10 days of harvest. |
| Tomato ⁽¹⁾ (Do not use on Cherry tomatoes) | Anthracnose (Colletotrichum coccodes) Early Blight (Alternaria solani) Septoria Leaf Spot (Septoria lycopersici) | 3 to 4 lbs | 3 to 4 lbs | Begin applications at first sign of infection and continue at 7-14 day intervals. Use the shorter spray interval under high disease pressure. Do not apply more than 23.7 lbs (18.0 lbs. A.I.)/A per crop cycle. Do not apply within 7 days of harvest. Ziram can be mixed with copper fungicides to enhance bacterial disease control. Aerial application is prohibited. |

- (1) Not for use in California.
- (2) Based on dilute sprays of 400 gallons per acre.
- (3) Based on dilute sprays of 300 gallons per acre.
- (4) Crop cycle is defined as pre-bloom through post-harvest.

15/17

ZIRAM GRANUFLO® APPLICATION INFORMATION SPECIFIC TO ORNAMENTAL CROPS

| ORNAMENTAL CROPS | DISEASES | POUNDS ZIRAM GRANUFLO® per 100 gal | DIRECTIONS FOR USE |
|---|--|------------------------------------|---|
| Asters | Rust (Puccinia spp.) | 1 ½ to 2 lbs | Begin application early in the growing season and continue every 7 days as needed until blossoms form. |
| Azaleas Camellias | Petal Blight (Pestalotia spp.) | 1 ½ to 2 lbs | Begin application with first bloom. Apply at 3 to 5 day intervals as a drench to mulch and litter beneath and around bushes through bloom period. |
| Carnations Chrysanthemums Marigolds Morning Glory Snapdragons | Rust (Puccinia spp.) | 1 2/3 to 2 lbs | Apply at 7 to 10 days intervals as needed throughout the growing season. |
| Carnations Chrysanthemums Dahlias Gladiolus Snapdragons | Leaf Spot (Alternaria spp.) | 1 2/3 to 2 lbs | Apply at 7 day intervals as needed throughout the growing season. |
| Cyclamens Gardenias | Botrytis Blight (Botrytis spp.) Leaf Spot (Phyllostica spp.) | 1 ½ to 2 lbs | Apply at 7 to 10 day intervals as needed throughout the growing season. |
| Dahlias Delphinium Golden Glow Hollyhocks Phlox | Powdery Mildew (Erysiphe cichoracearum) | 1 2/3 to 2 lbs | Apply at 7 day intervals as needed throughout the growing season. |
| Lilies Peonies Poinsettias Tulips | Botrytis Blight (Botrytis spp.) | 1 ½ to 2 lbs | Apply at 7 to 10 day intervals as needed throughout the growing season. |
| Roses | Black Spot (Diplocarpon rosae) Powdery Mildew (Sphaerotheca spp.) | 1 2/3 to 2 lbs | Begin application when leaves unfold. Apply at 7 to 10 day intervals as needed throughout the growing season. |

16/17

ZIRAM GRANUFLO® APPLICATION INFORMATION SPECIFIC TO CROP

| ORNAMENTAL TREES AND FRUIT ⁽¹⁾ | DISEASES | POUNDS ZIRAM GRANUFLO® | | DIRECTIONS FOR USE |
|---|---|------------------------|-------------|--|
| | | per acre | per 100 gal | |
| Conifers Pine Seedlings | Fusiform Rust | 8 lbs | 2 lbs | Apply at 3 to 5 day intervals from plant emergence to mid-June. |
| Douglas Fir Christmas Trees | Melampsora Needle Rust | 8 lbs | 2 lbs | Make one application in the Spring when new shoot growth is ½ to 2 inches in length. |
| Shasta Fir Christmas Trees | Puccineastrum Needle Rust | 8 lbs | 2 lbs | Make a single application in the Spring when new shoot growth is ½ to 2 inches in length. |
| Apple Pear | Anthracnose (Pezicula malicorticis) European (Necttria) Canker Fusiform Rust | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the Fall and dormant periods. DO NOT USE FRUIT FOR HUMAN CONSUMPTION. |
| Flowering Crab Apple Oregon Crab Apple Quince | Anthracnose (Pezicula malicorticis) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the Fall and dormant periods. DO NOT USE FRUIT FOR HUMAN CONSUMPTION. |
| Sweet Cherry Wild Cherry Choke Cherry Cherry laurel Flowering Plum (non-edible only) | Witches' Broom, Leaf Curl, Plum Pockets (Taphrina spp.) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. DO NOT USE FRUIT FOR HUMAN CONSUMPTION. |
| Peach Apricot | Twig Blight (Monilinia spp.) Leaf Curl (Taphrina deformans) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. DO NOT USE FRUIT FOR HUMAN CONSUMPTION. |
| Nectarine | Leaf Curl (Taphrina deformans) Shot Hole (Stigmina carpophila) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. DO NOT USE FRUIT FOR HUMAN CONSUMPTION. |
| American Hornbeam | Leaf Blister (Taphrina australis) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. |
| Elm Birch Maple | Leaf Blister (Taphrina spp.) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. |
| California Buckeye | Yellow Leaf Blister (Taphrina aesculi) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. |
| Oak | Leaf Blister (Taphrina caerulescens) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. |

| | | | | |
|---------------|---|-------|------------|--|
| Alder | Leaf Curl, Catkin Hypertrophy (Taphrina spp.) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. |
| Poplar | Yellow Leaf Blister (Taphrina populina) Shoot Blight (Venturia populina) | 8 lbs | 2 to 3 lbs | Apply as a thorough coverage spray in the dormant period prior to bud swell. |

(1) Not for use in California. Do not eat fruit from treated trees.

Note: Due to the continuous development of new varieties of each of the ornamental plants and trees listed above, it is recommended that prior to the first use on a particular ornamental variety, the grower treat a small sample (6-10 plants) with the product at recommended dose to determine if there is going to be phytotoxicity, including but not limited to necrosis, leaf burn or stunting.

