



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460**

**OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION**

September 27, 2023

Jake Vukich
Senior Product Registration Manager
FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104

Subject: Registration Amendment – Amended Terms and Conditions, and Revised Labeling
Product Names: Benevia Insect Control, Exirel Insect Control and Verimark Insect Control
EPA Registration Numbers: 279-9614, 279-9615 and 279-9616
Application Date: June 15, 2023
Decision Numbers: 593329, 593330 and 593331

Dear Mr. Vukich:

The amended labels referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, are acceptable. Accordingly, EPA has approved the requested registration amendments, provided FMC Corporation (“FMC”) complies with all terms and conditions listed below.

Terms and Conditions

FMC must comply with all the following terms and conditions. Release for shipment of these products constitutes acceptance of the below conditions. If these conditions are not complied with, the registrations will be subject to cancellation in accordance with FIFRA section 6.

Endangered Species Protection and Formal Consultation

1. For this action, EPA conducted effects determinations under the Endangered Species Act (ESA). In its final effects determinations (included in a biological evaluation), EPA made may affect, likely to adversely affect (LAA), determinations for certain listed species and designated critical habitats for products containing cyantraniliprole (including this product). For these LAA determinations, EPA also assessed the potential likelihood of jeopardy or adverse modification in its effects determination, consistent with 50 C.F.R. § 402.40(b)(1). EPA predicted no potential likelihood of jeopardy for listed species or adverse modification for designated critical habitat. On September 25, 2023, EPA initiated formal consultation with the Services. The Services will make the final determination as to the potential for

jeopardy for listed species or adverse modification for designated critical habitat in any final biological opinions issued at the completion of consultation.

If, following formal consultation with Service(s), additional modifications are identified in any applicable Biological Opinion, EPA will notify FMC in writing within 45 calendar days of the issuance of the Biological Opinion of any necessary changes. Within 30 calendar days of receiving EPA's notice, FMC must submit an amendment application incorporating the necessary changes, including amended labels. Alternatively, FMC may respond by submitting a request for voluntary cancellation of this product. If FMC fails to comply with this term, FMC has agreed in prior written acceptance of these terms that EPA may cancel the registration under an expedited process under FIFRA 6(e).

Implementation of Revised Labeling

2. To ensure the prompt adoption of the mitigations in this registration amendment in newly produced product and previously produced product that is still under FMC's control, FMC must submit state registrations for approval, in all states where products are currently registered, for the products with the labeling associated with this approval letter no later than November 30, 2023.
3. In accordance with 40 C.F.R. § 152.130(c), product may be distributed or sold by FMC under the previously approved labeling for no longer than 12 months from the date of this letter or 75 days after the final state approval from those submitted under Term #2, whichever is earlier.
4. Nothing in Terms #2-3 should be read to obligate FMC to provide additional labeling for product that bears the previously approved label but is not under FMC's control as of the date of this letter. However, FMC should conduct outreach for users of this product to update them on the forthcoming changes to the label and their importance in mitigating potential effects to listed species and avoiding violations of the Endangered Species Act.

EPA's Rationale for Approving This Registration Amendment

FIFRA section 3(c)(5) requires EPA to unconditionally approve a registration amendment if:

- "its composition is such as to warrant the proposed claims for it";¹
- "its labeling and other material required to be submitted comply with the requirements of [FIFRA]";²

¹ FIFRA § 3(c)(5)(A), 7 U.S.C. § 136a(c)(5)(A). Here, EPA reviewed the proposed labeling and determined that the claims made for the product were consistent with composition of the product based on the data submitted.

² FIFRA § 3(c)(5)(B), 7 U.S.C. § 136a(c)(5)(B). Here, EPA reviewed the submitted labeling and other materials submitted and found them to be compliant with the requirements of FIFRA. Additionally, there are no data gaps.

- “it will perform its intended function without unreasonable adverse effects on the environment”;³ and
- “when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse effects on the environment.”⁴

Prior to approving the previous registrations and registration amendments for this product and others containing cyantraniliprole, EPA considered risks and benefits of approving the registrations and registration amendments. To determine the risks and benefits, the Agency reviews a large body of information to determine the effects of using these products. In assessing the risks from use of products containing cyantraniliprole, EPA has conducted both human health risk assessments⁵ and ecological and environment fate risk assessments.⁶ EPA also updated its ecological and environmental fate risk assessments in support of the 2023 draft biological evaluation (BE).⁷ EPA believes that that these risk assessments (and the benefits discussed below) are also applicable to the action to approve this amended registration.

In the human health risk assessments, EPA did not select an acute dietary toxicity endpoint because the Agency did not identify any effect attributed to a single dose (*i.e.*, CTP is not expected to pose

³ FIFRA § 3(c)(5)(C), 7 U.S.C. § 136a(c)(5)(C).

⁴ FIFRA § 3(c)(5)(D), 7 U.S.C. § 136a(c)(5)(D).

⁵ Summary of Analytical Chemistry and Residue Data (Jan. 25, 2013) ([EPA-HQ-OPP-2011-0668-0009](#)); Dietary Exposure and Risk Assessment (Jan. 29, 2013) ([EPA-HQ-OPP-2011-0668-0010](#)); Occupational and Residential Exposure and Risk Assessment for the Proposed New Uses of the New Active Insecticide Cyantraniliprole (Feb. 28, 2013) ([EPA-HQ-OPP-2011-0668-0011](#)); Aggregate Human Health Risk Assessment for the Proposed New Uses of the New Active Insecticide Cyantraniliprole (Mar. 7, 2013) ([EPA-HQ-OPP-2011-0668-0012](#)); Chronic Aggregate Dietary Exposure and Risk Assessments in Support of a Section 3 Registration Action (Sept. 7, 2016) ([EPA-HQ-OPP-2014-0357-0009](#)); Human Health Risk Assessment for Various Proposed Uses and Several Tolerance Requests without U.S. Registration (Jan. 12, 2017) ([EPA-HQ-OPP-2014-0357-0011](#)); Summary of Analytical Chemistry and Residue Data (Apr. 21, 2016) ([EPA-HQ-OPP-2014-0357-0012](#)); Summary of Analytical Chemistry and Residue Data (Aug. 8, 2016) ([EPA-HQ-OPP-2014-0357-0013](#)); Human Health Risk Assessment for Proposed Uses and Tolerance Requests on Coffee; Caneberry Subgroup 13-07A; Low Growing Berry Subgroup 13-07H, Except Strawberry, Lowbush Blueberry and Lingonberry; Brassica Leafy Greens Subgroup 4-16A; Leafy Greens Subgroup 4-16B (June 20, 2018) ([EPA-HQ-OPP-2017-0694-0011](#)); Chronic Aggregate Dietary Exposure and Risk Assessments for Proposed Uses and Tolerance Requests on Coffee; Caneberry Subgroup 13-07A; Low Growing Berry Subgroup 13-07H, Except Strawberry, Lowbush Blueberry and Lingonberry; Brassica Leafy Greens Subgroup 4-16A (May 30, 2018) ([EPA-HQ-OPP-2017-0694-0012](#)); Human Health Risk Assessment for an Inadvertent Tolerance on Sugarcane (Feb. 28, 2022) ([EPA-HQ-OPP-2021-0154-0007](#)); Highly Refined Chronic Aggregate Dietary Exposure and Risk Assessments for Proposed Inadvertent Use and Tolerance Request on Sugarcane (Feb. 28, 2022) ([EPA-HQ-OPP-2021-0154-0008](#)).

⁶ Environmental Fate and Ecological Risk Assessment for the Registration of the New Chemical Cyantraniliprole – Amended (April 30, 2013) ([EPA-HQ-OPP-2011-0668-0008](#)); Environmental Risk Assessment of Proposed New Global Chemical Cyantraniliprole – Addendum (Jan. 24, 2014) ([EPA-HQ-OPP-2011-0668-0055](#)); Revised Drinking Water Assessment including Ground Water Exposure Refinements for Proposed New Uses on Leafy, Bulb, Fruiting, and Cucurbit Vegetables with Two Seasons of Applications (June 9, 2016) ([EPA-HQ-OPP-2014-0357-0010](#)); Ecological Risk Assessment and Drinking Water Assessment for the IR-4 New Use Petition for Pronamide on Low Growing Berry Subgroup except Strawberry, Subgroup 13-07H; Stone Fruit Crop group 12-12; Pome Crop Group 11-10; Caneberry subgroup 13-07A; Bushberry subgroup 13-07B; and Small Fruit Vine Climbing Subgroup (except Fuzzy Kiwifruit Subgroup 13-07F) (May 14, 2018) ([EPA-HQ-OPP-2017-0694-0013](#)).

⁷ See EPA’s Draft Biological Evaluation for Cyantraniliprole and supporting documentation, available at [EPA-HQ-OPP-2011-0668](#), Document ID Nos. 71-72, 75-87.

an acute risk to humans). In general, CTP produces both adverse and adaptive changes in the liver, thyroid gland, and adrenal cortex. With repeat dosing, consistent findings of mild to moderate increases in liver weights are observed across multiple species (rats, mice, dogs). CTP was classified as “not likely to be carcinogenic to humans” based upon data demonstrating lack of treatment-related increase in tumor incidence in rats and mice. No cumulative effects were identified. CTP presents no mutagenicity, neurotoxicity, immunotoxicity, developmental reproductive toxicity.

In the environmental risk assessments, EPA identified risks of concern for both aquatic and terrestrial invertebrates. Overall, however, the major risks of concerns are for direct effects to freshwater, estuarine/marine, and benthic invertebrates. EPA did not identify direct risks of concerns for birds, reptiles, amphibians, freshwater fish, terrestrial plants, or aquatic plants.

EPA also considered the benefits of products containing cyantraniliprole, including CTP’s activity on a wide variety of target insects on a variety of crops. CTP is effective for controlling aphids, weevils and thrips—all major agricultural pests. CTP is not expected to pose any acute risk to humans and was registered in 2013 as a reduced risk pesticide due to it posing lower relative risk to alternative chemicals available at that time. CTP also poses lower risk to non-target organisms relative to alternatives and is compatible with IPM practices.

This amended registration includes additional mitigation measures to address effects to listed species, including the following:

- Requirement that applicators use coarse/coarser droplets for ground and aerial applications to reduce spray drift
- Requirement that aerial applications abide by wind-directional buffers, as identified in Bulletins Live Two (BLT), also to reduce spray drift
- Increase in distance of vegetative filter strips from 25 to 30 feet to mitigate the potential for runoff to aquatic habitats
- Use of a 25’ buffer for airblast applications to dormant, non-bearing and/or vegetation that is not yet fully leafed out
- Requirement that treated seeds be immediately covered or collected if spilled during loading

After consideration, EPA has determined that approving this amended registration will not cause unreasonable adverse effects because the amended registrations are not expected to result in increased exposures⁸ and because EPA continues to believe that—consistent with the 2014 registration decision⁹ and other previous registration decision for products contain cyantraniliprole—the benefits of these registrations outweigh any remaining risks of concern from

⁸ While the mitigations in the amended registrations are intended to reduce exposures to listed species, EPA expects that the mitigations will (1) not increase exposures to other non-listed non-target organisms, and (2) will generally reduce exposures to all non-target organisms (both listed and non-listed).

⁹ For EPA’s full risk-benefit analysis, *see* Registration of New Active Ingredient Cyantraniliprole, at 13-14 (Jan. 24, 2014) ([EPA-HQ-OPP-2011-0668-0057](#)).

its use and there are no human dietary risks from uses of cyantraniliprole that are inconsistent with the FFDCSA safety standard.¹⁰ Accordingly, EPA is approving these registration amendments because the FIFRA registration standard is met.

Conclusion

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. Consistent with Terms 2-5 above, and notwithstanding 40 C.F.R. § 152.130(c), you may only distribute or sell¹¹ this product under either the final stamped label associated with this approval letter or with accompanying labeling that incorporates the mitigations in this registration amendment.

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 FIFRA 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 C.F.R. § 156.10(a)(5) lists 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 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 product will be referred to EPA's Office of Enforcement and Compliance.

If you have any questions, please contact Gene Benbow at 703-712-9669 or at benbow.gene@epa.gov.

Sincerely,



Deanna (Dee) Colby, Chief
Invertebrate & Vertebrate Branch 3
Registration Division
Office of Pesticide Programs

Enclosure

¹⁰ See FIFRA § 2(bb) (defining “unreasonable adverse effects on the environment” as, in relevant part, “any unreasonable risk to [humans] or the environment, taking into account the economic, social, and environmental costs and benefits of the use of the pesticide” or any “human dietary risks” from pesticidal residues in or on food).

¹¹ See FIFRA § 2(gg), 7 U.S.C. § 136(gg); 40 C.F.R. § 152.3.

BENEVIA®

INSECT CONTROL

WITH THE ACTIVE INGREDIENT **CYAZYPYR®**

ACCEPTED

09/27/2023

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No. 279-9614

GROUP 28 INSECTICIDE

For foliar applications to bulb, legume and tuberous and corm vegetables; cotton; oil seed crops; peanuts; soybeans; tobacco and tree nuts for pest management of sucking and chewing insects that can vector certain plant diseases, aiding in optimization of the crop's potential.

Active Ingredient

By Weight

Cyantraniliprole

3-bromo-1-(3-chloro-2-pyridinyl)-N-[4-cyano-2-methyl-6-
[(methylamino)carbonyl]phenyl]-1H-pyrazole-5-carboxamide

10.26%

Other Ingredients

89.74%

TOTAL

100.00%

BENEVIA® is an oil dispersion. SHAKE WELL BEFORE USING.

Contains 0.83 lb. active ingredient per gallon.

EPA Reg. No. 279-9614

EPA Est. No. _____

Nonrefillable Container

Refillable Container

Net: _____

OR

Net: _____

Not for sale, sale into, distribution and/or use in Nassau and Suffolk counties of New York State.

KEEP OUT OF REACH OF CHILDREN CAUTION

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.)

FIRST AID

IF IN EYES: 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. Call a poison control center or doctor for treatment advice.

For questions regarding emergency medical treatment, you may contact 1-800-331-3148 for information.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Avoid contact with eyes. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Shoes plus socks.

After the product has been diluted in accordance with label directions for use, shirt, pants, socks, and shoes are sufficient Personal Protective Equipment. Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (PPE). If no such instructions for washables are available, use detergent and hot water. Keep and wash PPE separately from other laundry.

Sold By



FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

PHYSICAL OR CHEMICAL HAZARDS

Do not place product near or allow product to come into contact with strong oxidizing substances (such as potassium permanganate) since a hazardous chemical reaction may occur.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates and oysters. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in water adjacent to use sites. This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging the treatment area.

Surface Water Advisory-

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several weeks after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of cyantraniliprole from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory-

This chemical has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

PROTECTION OF POLLINATORS



APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

This product can kill bees and other insect pollinators.

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen resulting from foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants in and around the application site.
- Minimize drift of this product onto beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at: <http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: www.aapco.org/officials.html. Pesticide incidents should also be reported to the National Pesticide Information Center at: www.npic.orst.edu or directly to EPA at: beekill@epa.gov

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 State or Tribal agency responsible for pesticide regulation.

ENDANGERED AND THREATENED SPECIES PROTECTION REQUIREMENTS: Before using this product, you must obtain any applicable Endangered Species Protection Bulletins ('Bulletins') within six months prior to or on the day of application. To obtain Bulletins, go to Bulletins Live! Two (BLT) at <https://www.epa.gov/pesticides/bulletins>. When using this product, you must follow all directions and restrictions contained in any applicable Bulletin(s) for the area where you are applying the product, including any restrictions on application timing if applicable. It is a violation of Federal law to use this product in a manner inconsistent with its labeling, including this labeling instruction to follow all directions and restrictions contained in any applicable Bulletin(s). For general questions or technical help, call 1-844-447-3813, or email ESPP@epa.gov.

1. FOR CROPS UNDER CONTRACTED POLLINATION SERVICES



Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following conditions is met.

- If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

2. FOR FOOD CROPS AND COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS



Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55°F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48- hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

RESTRICTIONS

- Do not make ground applications within 25' or aerial applications within 50' of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, wetlands or natural ponds, estuaries, and commercial fish farm ponds). Do not cultivate within 30' of these aquatic areas to allow growth of a vegetative filter strip.
- For foliar uses, do not apply during rain.
- When making air blast applications to orchard crops with sparse canopies a 25 foot buffer is required between the application site and all adjacent areas except for roads (and other paved or gravel surfaces), agricultural areas (fields that have been planted into or prepared for planting), and structural areas (buildings or other man-made structures with walls and/or a roof). A sparse canopy occurs during the period of dormancy starting from first leaf drop at the end of the season until vegetation is fully leafed out in the spring, and on young orchard crops that are not yet bearing.
- Do not treat plants grown for transplanting. Not for use in nurseries, plant propagation houses, or greenhouses by commercial transplant producers on plants being grown for transplanting.
- Do not apply BENEVIA® to the soil or through drip irrigation systems. May be used on crops on this label grown for seed production.
- Do not use in residential areas.
- Do not apply BENEVIA® insect control through any irrigation system unless specified in the crop section of this label.
- Unless otherwise stated for a specific crop, do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year. This is the total from all application methods (eg. seed, soil, foliar).

AGRICULTURAL USE REQUIREMENTS

BENEVIA® must be used 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 the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable).

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For early entry into 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, wear:

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

BENEVIA® must be used in accordance with the directions for use on this label, or as otherwise permitted by FIFRA. Always read the entire label, including the Limitation of Warranty and Liability.

BENEVIA® is an oil dispersion that can be applied as a foliar spray on labeled crops or by overhead chemigation in potatoes and bulb vegetables to control listed insects. BENEVIA® is specially formulated for maximum performance by foliar applications in bulb, legume and tuberous and corm vegetables; cotton; oil seed crops; peanuts; soybeans; tobacco and tree nuts. Do not apply directly to the soil or through drip irrigation as doing so may damage the plant root system. BENEVIA® is mixed with water for application.

BENEVIA® is a member of the anthranilic diamide class of insecticides with a novel mode of action acting on insect ryanodine receptors. Although BENEVIA® has contact activity, it is most effective through ingestion of treated plant material. After exposure to BENEVIA®, affected insects will rapidly stop feeding, become paralyzed, and typically die within 1 - 3 days, reducing both direct damage and the transmission of some insect transmitted diseases. Early season applications of BENEVIA® improve crop establishment and growth vigor by controlling a range of pests that attack seedlings. Time applications to the most susceptible insect pest stage, typically at egg hatch and/or newly hatched larvae or nymphs, before populations reach damaging levels. When pest populations are high, use the highest listed application rate for that pest. For best results when targeting control of sucking pests, begin applications when insect populations first appear. BENEVIA® has preventative activity, but low curative activity for sucking pests.

INTEGRATED PEST MANAGEMENT

FMC supports the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an IPM program, which can include biological, cultural, and genetic practices, aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, rotation of insecticides with different modes-of-action, and treating when target pest populations reach locally determined action thresholds. For best results with sucking pests, apply at specified rates when insects first appear. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

SCOUTING

Monitor insect populations to determine whether or not there is a need for application of BENEVIA® based on locally determined pest management guidelines. More than one treatment of BENEVIA® may be required to control a population of pests.

INSECT RESISTANCE MANAGEMENT

For resistance management, BENEVIA® is a Group 28 Insecticide. Repeated and exclusive use of BENEVIA® (cyantraniliprole) or other Group 28 insecticide belonging to the anthranilic diamide class of chemistry may lead to the buildup of resistant strains of insects in some crops.

Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, this product may be used as part of a resistance management strategy established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of mode-of-action classes of insecticides on succeeding generations and the most susceptible life stage. Consult your local or state agricultural authorities for details.

Unless directed otherwise in the specific crop/pest sections of this label, the best practices are to follow these instructions to delay the development of insecticide resistance:

- Avoid using the same mode of action (same IRAC group number) on consecutive generations of insect pests.
- Make no more than 2 applications of BENEVIA® (cyantraniliprole) or other Group 28 products per generation to the same insect species on a crop.
- Application to the next generation of target pest(s) must be with an effective product with a different mode of action (non- Group 28 insecticide).
- Make no more than 2 successive applications within a 30-day period to the same insect species on a crop. The following application to the target pest(s) must be with an effective product with a different mode of action.
- Avoid using less than the labeled rates of BENEVIA® when applied alone or in tank mixtures.
- Target the most susceptible insect life stages, whenever possible.
- Monitor insect populations for product effectiveness. If resistance to BENEVIA® develops in your area, BENEVIA® 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 FMC company representative or agricultural advisor for the best alternative method of control.

For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irac-online.org>.

APPLICATION

Apply at the specified rates when insect populations reach locally determined action thresholds. For best results with sucking pests, begin applications when insects first appear. Consult the cooperative extension service, professional consultants or other qualified authorities for local pest management guidelines in your area.

Apply follow-up treatments of BENEVIA®, as specified, to keep pest populations under threshold limits. Refer to the Resistance Management section of this label for further guidance on follow-up treatments. See individual crop sections of this label for specific minimum spray intervals. Use sufficient water to obtain thorough, uniform coverage.

BENEVIA® may be applied by: foliar ground (including overhead chemigation in potatoes and bulb vegetables), or aerial application equipment.

BENEVIA® may be applied via overhead sprinkler chemigation systems on potatoes and bulb vegetables. Use of the highest labeled rate for the specified pest may be necessary when making overhead chemigation applications.

For aerial application use the following directions unless otherwise specified in specific crop/pest sections of this label or other supplemental labeling: use a minimum of 5 gallons per acre (gpa) of water for bulb vegetables, cotton, oil seed crops and tuberous and corm vegetables and use 10 gallons per acre (gpa) for tree nuts. Use of the highest labeled rate for a specified pest may be necessary when making aerial applications.

For foliar ground applications use the following directions, unless otherwise specified in specific crop/pest sections of this label or other supplemental labeling: use a minimum of 10 gal per acre (gpa) of water for bulb vegetables, cotton, oilseed crops and tuberous and corm vegetables and use a minimum of 30 gallons per acre (gpa) for tree nuts.

Use of Adjuvants - In some situations where coverage is difficult to achieve such as closed canopy, dense foliage, plants with waxy leaf surfaces, or less than optimum applications equipment, an adjuvant may improve performance. Use a proven and recommended adjuvant that does not affect foliage and/or fruit finish. Tank mixes of BENEVIA® with spreading and penetrating adjuvants can result in adverse crop response. See specific crop instructions in the following crop tables.

SPRAY PREPARATION

Spray equipment must be clean and free of previous pesticide deposits before applying BENEVIA®. Fill spray tank 1/4 to 1/2 full of water. Add BENEVIA® directly to spray tank. Mix thoroughly to fully disperse the insecticide, once dispersed continued agitation is required. Use mechanical or hydraulic means; do not use air agitation. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

Acidification of Spray Tank - If the pH of the spray tank after all products have been added and mixed is above pH 8, adjust to pH 8 or less using a registered acidifying agent. If the spray tank pH is 8 or less no adjustment of the spray tank pH is necessary. Spray tanks of pH 8 or less can be held for up to 8 hours before spraying. Do not store the spray mixture overnight in the spray tank.

Compatibility - Since formulations may be changed and new ones introduced, premix a small quantity of a desired tank mix and observe for physical incompatibility (settling out, flocculation, etc.). Spray volumes of less than 3 gallons of water and tank mixtures of more than two products can increase the chances of incompatible spray mixtures. A jar test (as described below) should be conducted when label guidance is not given or prior experience with a specific tank mixture is unknown. The jar test should follow the proper sequence of addition at the spray water volume planned to assure that the tank mix is compatible. Constant agitation may be needed during mixing and spraying of mixtures.

This product can be mixed with pesticide products labeled for use on crops on this label in accordance with the most restrictive of label limitations and precautions. Do not exceed labeled dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

Steps to conduct a jar test to determine physical tank mix compatibility of BENEVIA® with other products:

- Add clean water to jar proportional to the planned water volume that will be used in the spray tank (a jar size of 8-16 oz is acceptable).
- Using the most restrictive PPE of the products to be tested, mix proper proportions of BENEVIA® and desired tank mix partner(s) as will be present in the spray tank, add one product at a time following the sequence of addition according to formulation type provided in this label.
- Seal and shake mixture after each product is added.
- Allow to stand for 1 hour.
- View jar to determine if settling, flocculation, crystallization or any other undesirable changes have happened.
- If none of the above is observed or the solution can be easily remixed after shaking, the mixture is compatible with BENEVIA®.
- If the tank mix is not compatible, a higher water volume, reduced rate of the tank mix partner(s), reduced number of tank mix partners or a compatibility agent may be needed.

TANK MIXTURES AND CROP SAFETY- BENEVIA® is an oil in water emulsion. The crop safety of BENEVIA® alone or in tank mix with many common insecticides, fungicides, nutritionals and adjuvants has been found to be acceptable. Tank mixes of BENEVIA® with some products formulated as emulsifiable concentrates (EC), strobilurin fungicides (for example Cabrio and Quadris), copper and sulfur based fungicides, chlorothalonil based fungicide formulations (for example, Bravo Weather Stik), and the fungicides Captan, Tanos, Rally and Manzate may result in adverse crop response. Some materials including oils, surfactants, adjuvants, nutritionals and pesticide formulations when applied individually, sequentially, or in tank mixtures may solubilize the plant cuticle, facilitate penetration into plant tissue, and increase the potential for crop injury.

The application of strobilurin fungicides in a short time sequence (i.e., seven days apart or less between applications) before or after BENEVIA® may also result in adverse crop response. Applying BENEVIA® with any product that produces adverse crop response in a tank mixture, specifically including, but not limited to, those listed above, may also cause adverse crop response when applied in a short time sequence. Such uses should be tested as described below before broad application is made.

Crop varieties can differ in their responsiveness to tank mixtures, and environmental conditions can have an influence on product performance and crop response. It is not possible to test BENEVIA® alone or with all possible tank mix combinations and sequences on all varieties under all environmental conditions. When considering the use of a tank mixture on a labeled crop without prior experience, or which is not specifically described on BENEVIA® product labeling or in other FMC product use instruction, or when applying any of the aforementioned products in close sequence with BENEVIA®, it is important to check crop safety first. To test for crop safety prepare a small volume of the intended tank mixture or sequence, apply it to an area of the target crop as directed by both this and the tank mix partner product labels, and

observe the treated crop to ensure that a phytotoxic response does not occur.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations, and directions for use, on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements on each product in the tank mixture. Use of BENEVIA® in any tank mixture or sequence of applications that is not specifically described on BENEVIA® product labeling or in other FMC product use instructions, could potentially result in crop injury. To the extent allowed by law, FMC will not be responsible for any crop injury arising from the use of a tank mixture or sequence of applications that is not specifically described on BENEVIA® product labeling or in other FMC product use instruction.

Tank Mixing Sequence -Add different formulation types in the sequence indicated below*. Allow time for complete mixing and dispersion after addition of each product.

1. Water soluble bag (WSB)
2. Water soluble granules (SG)
3. Water dispersible granules (WG, XP, DF)
4. Wettable powders (WP)
5. Water based suspension concentrates (SC)
6. Water soluble concentrates (SL)
7. Suspoemulsions (SE)
8. BENEVIA® and other oil based suspension concentrates (OD)
9. Emulsifiable concentrates (EC)
10. Surfactants, oils adjuvants
11. Soluble fertilizers
12. Drift retardants

* Unless otherwise specified by manufacturer directions for use or by local experience.

CHEMIGATION - Overhead Sprinkler - Potatoes and Bulb Vegetables

The following types of irrigation equipment may be used for chemigation applications to potatoes and bulb vegetables: overhead sprinkler irrigation systems.

Apply BENEVIA® in sufficient water and of sufficient duration to ensure the specified rate is applied evenly to the entire treated area. Inject BENEVIA® downstream from any water filtration system.

Do not connect any irrigation system used for pesticide applications to a public water system unless the pesticide label- prescribed safety devices are in place. Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

See "Required System Safety Devices For All Chemigation Systems" at the end of the Chemigation section.

APPLICATION INSTRUCTIONS FOR CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - POTATOES AND BULB VEGETABLES

Types of Chemigation Systems: BENEVIA® may be applied to potatoes and bulb vegetables through overhead sprinkler irrigation systems, including the following; center pivot, end tow, hand move, lateral move, side roll, solid set and wheel line. The irrigation system used must provide uniform water distribution.

Directions for Chemigation:

Preparation

A pesticide tank is recommended for the application of BENEVIA® in chemigation systems.

Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. With the mix tank 1/4 to 1/2 full with water and the agitator running, measure the required amount of BENEVIA® and add it to the tank. The highest labeled rate for the specified pest may be necessary when making overhead chemigation applications. Then add additional water to bring your total pesticide mixture up to the desired volume for your application. Note: Always add BENEVIA® to water, never put BENEVIA® into a dry tank or other mixing equipment without first adding water. See "Tank Mixing Sequence" section of the container label for tank mixing sequence. Continue to agitate the mixture throughout the application process. Use mechanical or hydraulic agitation, do not use air agitation.

Injection Into Chemigation Systems

Inject the proper amount of BENEVIA® into the irrigation water flow using a positive displacement injection pump or a Venturi injector.

Injection should occur at a point in the main irrigation water flow to ensure thorough mixing with the irrigation water. For continuously moving systems, inject the solution containing BENEVIA® into the irrigation water line continually and uniformly throughout the irrigation cycle. Apply in no more than 0.2 inches of water per acre. For overhead sprinkler systems that are stationary, add the solution containing BENEVIA® to the irrigation water line and apply no more than 0.2 inches of water per acre.

Uniform Water Distribution

The irrigation system used for application of BENEVIA® must provide for uniform distribution of BENEVIA® treated water. Non-uniform distribution can result in crop injury, lack of effectiveness or illegal pesticide residues in or on the crop being treated. Ensure the irrigation system is calibrated to uniformly distribute the chemigation application to the crop. Contact the equipment manufacturer, the local University Extension agent or other experts if you have questions about achieving uniform distribution of the application.

Equipment Calibration

Calibrate the irrigation system and injector before applying BENEVIA®. Calibrate the injection pump while the system is running using the expected irrigation rate. If you have questions about calibration, you should contact your state extension service specialists, equipment manufacturer or other experts.

Monitoring of Chemigation Applications

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of a responsible person, shall shut the system down and make necessary adjustments should the need arise. Wear the personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when BENEVIA® is in the irrigation water.

Operation

Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector. Start the injector and calibrate the injection system according to the directions above. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

- End guns must be turned off during the application, if they irrigate nontarget areas or if they do not provide uniform application and coverage.
- The nozzles in the immediate area of wells, control panels, chemical supply tanks and system safety devices are to be plugged to prevent contamination of these areas.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Do not apply when system connections or fittings leak or when nozzles do not provide uniform distribution. Do not allow irrigation water to collect or run-off during chemigation.

Cleaning the System

Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. Consult your owner's manual or your local equipment dealer for cleanout procedures for your injection system.

REQUIRED SYSTEM SAFETY DEVICES FOR ALL CHEMIGATION SYSTEMS

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. Systems must use a metering device, such as a positive displacement pump or a Venturi injector, that provides uniform injection of the product, is effectively designed and constructed of materials compatible with the product, and is capable of being fitted with a system interlock.
7. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

SPRAY TANK CLEANOUT

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all spray equipment to reduce the risk of forming hardened deposits which might become difficult to remove.

Drain spray equipment. Thoroughly rinse sprayer and flush hoses, boom and nozzles with clean water.

Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. Do not clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions. Avoiding spray drift is the responsibility of the applicator.

IMPORTANCE OF DROPLET SIZE

The most effective drift management strategy is to apply the largest droplets which are consistent with pest control objectives. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions.

A droplet size classification system describes the range of droplet sizes produced by spray nozzles. The American Society of Agricultural and Biological Engineers (ASABE) provide a Standard that describes droplet size spectrum categories defined by a number of reference nozzles (fine, coarse, etc.). Droplet spectra resulting from the use of a specific nozzle may also be described in terms of volume mean diameter (VMD). Coarser droplet size spectra have larger VMD's and lower drift potential.

CONTROLLING DROPLET SIZE - GROUND APPLICATION

- For broadcast applications made at planting or prior to the emergence of crops, applicators are required to use a coarse or coarser droplet size (ASABE S572.1). For all other broadcast applications, applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Pressure - The lowest spray pressures recommended for the nozzle produce the largest droplets. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, using a higher-capacity nozzle instead of increasing pressure results in the coarsest droplet spectrum.
- Flow Rate/Orifice Size - Using the highest flow rate nozzles (largest orifice) that are consistent with pest control objectives reduces the potential for spray drift. Nozzles with higher rated flows produce coarser droplet spectra.

CONTROLLING DROPLET SIZE - AIRCRAFT

For fixed wing and helicopter aerial applications made at planting or prior to the emergence of crops, applicators are required to use a coarse or coarser droplet size (ASABE S572.1). For all other fixed wing and helicopter aerial applications, applicators are required to use a medium or coarser droplet size (ASABE S572.1).

- Number of Nozzles - Using the minimum number of nozzles with the highest flow rate that provide uniform coverage will produce a coarser droplet spectrum.
- Nozzle Orientation - Orienting nozzles in a manner that minimizes the effects of air shear will produce the coarsest droplet spectra. For some nozzles such as solid stream, pointing the nozzles straight back parallel to the airstream will produce a coarser droplet spectrum than other orientations.
- Pressure - Selecting the pressure that produces the coarsest droplet spectrum for a particular nozzle and airspeed reduces spray drift potential. For some nozzle types such as solid streams, lower pressures can produce finer droplet spectra and increase drift potential.

BOOM LENGTH (AIRCRAFT), AND APPLICATION HEIGHT

- Boom Length (aircraft) - Using shorter booms decreases drift potential. Boom lengths are expressed as a percentage of an aircraft's wingspan or a helicopter's rotor blade diameter. Shorter boom length and proper positioning can minimize drift caused by wingtip or rotor vortices.
- Application Height (aircraft) - Applications made at the lowest height that are consistent with pest control objectives and the safe operation of the aircraft will reduce the potential for spray drift. Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Application Height (ground) - Applications made at the lowest height consistent with pest control objectives, and that allow the applicator to keep the boom level with the application site and minimize bounce, will reduce the exposure of spray droplets to evaporation and wind, and reduce spray drift potential.

WIND

Drift potential is lowest when applications are made in light to gentle sustained winds (2-10 mph), which are blowing in a constant direction. Many factors, including droplet size and equipment type also determine drift potential at any given wind speed. **AVOID GUSTY OR WINDLESS CONDITIONS.**

Local terrain can also influence wind patterns. Every applicator is expected to be familiar with local wind patterns and how they affect spray drift.

For aerial application, if the windspeed is 10 miles per hour or less, applicators must use $\frac{3}{4}$ swath displacement upwind at the downwind edge of the field. When the windspeed is between 11-15 miles per hour, applicators must use a full swath displacement upwind at the downwind edge of the field.

For aerial application, do not apply when wind speeds exceed 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.

TEMPERATURE AND HUMIDITY

Setting up equipment to produce larger droplets to compensate for droplet evaporation can reduce spray drift potential. Droplet evaporation is most severe when conditions are both hot and dry.

SURFACE TEMPERATURE INVERSIONS

For aerial application, do not apply during temperature inversions.

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which may cause small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Mist or fog may indicate the presence of an inversion in humid areas. Inversions may also be identified by producing smoke and observing its behavior. Smoke that remains close to the ground, or moves laterally in a concentrated cloud under low wind conditions indicates a surface inversion. Smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are minimizing drift potential, and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, that it is configured properly, and that drift potential has been minimized.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Read the specific crop use and application equipment instructions for additional information.

SENSITIVE AREAS

Making applications when there is a sustained wind moving away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is an effective way to minimize the effect of spray drift.

DRIFT CONTROL ADDITIVES

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Council of Producers & Distributors of Agrotechnology.

CROP ROTATION

Crops on this label and the following crops or crop groups may be planted immediately following the last application of BENEVIA®: Brassica Leafy Greens (Crop Subgroup 4-16B) and Brassica Head and Stem Vegetables (Crop Group 5-16); Bulb Vegetables (Crop Group 3- 07); Cotton; Cucurbit Vegetables (Crop Group 9); Fruiting Vegetables (Crop Group 8-10); Leafy Greens (Crop Subgroup 4-16A) and Leaf Petiole Vegetables (Crop Subgroup 22B); Celtsuce; Florence Fennel; Leaves of Root and Tuber Vegetables (Crop Group 2); Legume Vegetables (Crop Groups 6 and 7); Low Growing Berries (Berry and Fruit Crop Subgroup 13-07H); Oilseeds (Crop Group 20); Peanuts; Soybeans; Root and Tuber Vegetables (Crop Subgroups 1B and 1C); Tobacco.

The following crops or crop groups may be planted 30 days following the last application of BENEVIA®: Cereal Grains (Crop Group 15); Forage, Fodder and Straw of Cereal Grains (Crop Group 16); Grass Forage, Fodder and Hay (Crop Group 17); Nongrass Animal Feeds (forage, fodder, straw and hay) (Crop Group 18); Sugar beets.

There is no plant back restriction for conversion of a treated field to, or for making a new or replacement planting into established orchards or fields of Bushberries (Crop Subgroup 13-07B); Caneberry Subgroup (Crop Subgroup 13-07A); Coffee; Citrus (Crop Group 10-10); Pome Fruits (Crop Group 11-10); Stone Fruits (Crop Group 12); Low Growing Berries (Crop Subgroup 13-07G); or Tree Nuts (Crop Group 14-12).

All other crops cannot be planted until 12 months after the last application of BENEVIA®.

| Crop | Application Method | Target Pest | BENEVIA® RATE | | PHI (pre-harvest interval) (days) | REI (re-entry interval) (hours) |
|---|--------------------|---|-----------------|-------------------------------|-----------------------------------|---------------------------------|
| | | | Lb. ai per acre | Fluid ounces product per acre | | |
| Bulb Vegetables, (Crop Group 3-07) Chive, fresh leaves; Chive, Chinese, fresh leaves; Daylily, bulb (edible); Elegans hosta (edible); Fritillaria, leaves (edible); Garlic, bulb; Garlic, great headed, bulb; Garlic, serpent, bulb; Kurrat; Lady's leek; Leek; Leek, wild; Lily, bulb; Onion, Beltsville bunching; Onion, bulb; Onion, Chinese, bulb; Onion, fresh; Onion, green; Onion, macrostem; Onion, pearl; Onion, potato, bulb; Onion, tree, tops; Onion, Welsh, tops; Shallot, bulb; Shallot, fresh leaves | Foliar | Leafminer (<i>Liriomyza spp.</i>)* Thrips (foliage feeding only)§* | 0.088 - 0.133 | 13.5 - 20.5 | 1 | 12 |
| | | <p>Minimum application interval between treatments is 5 days.</p> <p>Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year whether applications are made to the soil or foliarly.</p> <p>* - For best performance, use with an effective adjuvant. See "Use of Adjuvants" section.</p> <p>§ - Suppression only. For best results, use the highest rate listed. Use as part of an effective thrips control program. Rotate with products with different modes of action. Begin making applications to thrips when populations are low (1-3 thrips per plant). If populations are higher, use an effective thrips knockdown product before applying BENEVIA®.</p> <p>See "Chemigation - Overhead Sprinkler - Potatoes and Bulb Vegetables" section for instructions on overhead sprinkler chemigation.</p> | | | | |
| Cotton | Foliar | Beet armyworm Cotton bollworm† Fall armyworm Saltmarsh caterpillar Southern armyworm Tobacco budworm† Western yellowstriped armyworm | 0.045 - 0.11 | 7 - 17 | 7 | 12 |
| | | Cabbage looper Soybean looper | 0.065 - 0.11 | 10 - 17 | | |
| | | Whitefly* Thrips (foliage feeding only)§ | 0.088 - 0.133 | 13.5 - 20.5 | | |
| | | <p>Minimum application interval between treatments is 7 days.</p> <p>Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year whether applications are made to the soil or foliarly.</p> <p>* - For best performance, use with an effective adjuvant. See "Use of Adjuvants" section. For high populations of whiteflies, use the highest listed rate.</p> <p>§ - Suppression only. Use as part of an effective thrips control program. Rotate with products with different modes of action. Begin making applications to thrips when populations are low. If populations are above threshold, use an effective thrips knockdown product before applying BENEVIA®.</p> <p>† - For Heliothine control (cotton bollworm and/or cotton budworm) make the first application at rates of 0.065 - 0.11 lb ai per acre (10-17 fl oz product/A). Subsequent applications can be at rates of 0.045 - 0.088 lb ai per acre (7 -13.5 fl oz product/A) depending on pressure.</p> <p>Applications of BENEVIA® to seedling cotton may result in crop response. Affected plants outgrow the effects in most cases. If the risk of crop response to BENEVIA® cannot be accepted, do not apply it to seedling cotton.</p> | | | | |

| Crop | Application Method | Target Pest | BENEVIA® RATE | | PHI (pre-harvest interval) (days) | REI (re-entry interval) (hours) |
|---|--------------------|---|-----------------|-------------------------------|-----------------------------------|---------------------------------|
| | | | Lb. ai per acre | Fluid ounces product per acre | | |
| Legume vegetables, succulent or dried (Crop Group 6) Bean (Lupinus) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); bean (Phaseolus) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); bean (Vigna) (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); broad bean (fava); chickpea (garbanzo); guar; jackbean; lablab bean; lentil; pea (Pisum) includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea); pigeon pea; sword bean | Foliar | Corn earworm European corn borer Leafminer | 0.065 - 0.133 | 10 - 20.5 | 1 (succulent) 7 (dried) | 12 |
| | | Potato leafhopper§* Thrips (foliage feeding only)§* Whiteflies* | 0.088 - 0.133 | 13.5 - 20.5 | | |
| <p>§ - Suppression only.</p> <p>*- For best performance, use with an effective adjuvant. See "Use of Adjuvants" section. Minimum application interval between treatments is 5 days.</p> <p>Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year whether applications are made to the soil or foliarly.</p> <p>Applications of BENEVIA® to certain species of legume vegetables in this crop group may result in crop response. Affected plants outgrow the effects in most cases. If the risk of crop response to BENEVIA® cannot be accepted, do not apply it to legume vegetables.</p> | | | | | | |
| Oil Seed Crops (Crop Group 20) including Borage; Calendula; Castor oil; Chinese tallowtree; Crambe; Cuphea; Echium; Euphorbia; Evening primrose; Flax seed; Gold of pleasure; Hare's ear mustard; Jojoba; Lesquerella; Lunaria; Meadowfoam; Milkweed; Mustard seed; Niger seed; Oil radish; Poppy seed; Rapeseed (including canola varieties); Rose hip; Safflower; Sesame; Stokes aster; Sunflower; Sweet rocket; Tallowwood; Tea oil plant; Vernonia | Foliar* | Bertha armyworm Diamondback moth Sunflower head moth | 0.045 - 0.088 | 7 - 13.5 | 7 | 12 |
| | | Crucifer flea beetle | 0.045 - 0.11 | 7 - 17 | | |
| | | Cabbage looper Sunflower seed weevil§ | 0.065 - 0.133 | 10 - 20.5 | | |
| <p>Minimum application interval between treatments is 7 days.</p> <p>Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year. This is the total from all application methods (seed treatment and foliar application).</p> <p>* - For best performance, use with an effective adjuvant. See "Use of Adjuvants" section.</p> <p>§ - Suppression only. Use as part of an effective control program. Rotate with products with different modes of action.</p> | | | | | | |

| Crop | Application Method | Target Pest | BENEVIA® RATE | | PHI (pre-harvest interval) (days) | REI (re-entry interval) (hours) |
|--|--------------------|--|-----------------|-------------------------------|-----------------------------------|---------------------------------|
| | | | Lb. ai per acre | Fluid ounces product per acre | | |
| Peanuts | Foliar | Corn earworm Fall armyworm Tobacco budworm | 0.065 - 0.133 | 10 - 20.5 | 14 | 12 |
| | | Cutworms Soybean looper Lesser cornstalk borer Thrips (foliage feeding only)§ * ** | 0.088 - 0.133 | 13.5 - 20.5 | | |
| <p>§ - Suppression only. *- For best performance, use with an effective adjuvant. See "Use of Adjuvants" section. **- Use in conjunction with an effective thrips and tomato spotted wilt virus management program. Minimum application interval between treatments is 7 days. Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantranilprole containing products per calendar year whether applications are made to the soil or foliarly. Tomato Spotted Wilt Virus Suppression: Use of BENEVIA® to manage thrips which may vector the tomato spotted wilt virus at a rate of 13.5-20.5 fl oz/A applied early season (at cracking) will help suppress and slow the expression of tomato spotted wilt virus in peanuts when used as part of a TSWV management program.</p> | | | | | | |
| Soybeans | Foliar | Green cloverworm Soybean looper Velvetbean caterpillar | 0.065 - 0.133 | 10 - 20.5 | 7 | 12 |
| | | Lesser cornstalk borer Bean leaf beetle§ Japanese beetle Stink bug species§ Soybean aphid* Thrips (foliage feeding only)§* | 0.088 - 0.133 | 13.5 - 20.5 | | |
| <p>§ - Suppression only. *- For best performance, use with an effective adjuvant. See "Use of Adjuvants" section. Minimum application interval between treatments is 5 days. Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantranilprole containing products per calendar year whether applications are made as a seed treatment, to the soil, or foliarly.</p> | | | | | | |
| Tobacco | Foliar | Tobacco budworm | 0.065 - 0.133 | 10 - 20.5 | 7 | 12 |
| | | Tomato hornworm Tobacco hornworm Flea beetle | 0.088 - 0.133 | 13.5 - 20.5 | | |
| <p>Minimum application interval between treatments is 5 days. Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantranilprole containing products per calendar year whether applications are made to the soil or foliarly.</p> | | | | | | |

| Crop | Application Method | Target Pest | BENEVIA® RATE | | PHI (pre-harvest interval) (days) | REI (re-entry interval) (hours) |
|--|--------------------|---|-----------------|-------------------------------|-----------------------------------|---------------------------------|
| | | | Lb. ai per acre | Fluid ounces product per acre | | |
| Tuberous and Corm Vegetables (Crop Subgroup 1C) including Arracacha; Arrowroot; Artichoke, Chinese; Artichoke, Jerusalem; Canna, edible; Cassava, bitter and sweet; Chayote (root); Chufa; Dasheen (taro); Ginger; Leren; Potato; Sweet potato; Tanier; Turmeric; Yam bean; Yam, true | Foliar | Colorado potato beetle† | 0.033 - 0.088 | 5 - 13.5 | 7 | 12 |
| | | Beet armyworm European corn borer Potato tuberworm*†† Yellowstriped armyworm | 0.045 - 0.088 | 7 - 13.5 | | |
| | | Cabbage looper | 0.065 - 0.11 | 10 - 17 | | |
| | | Potato flea beetle* § Green peach aphid* Potato aphid* § Potato psyllid | 0.088 - 0.133 | 13.5 - 20.5 | | |
| <p>Minimum application interval between treatments is 5 days.</p> <p>Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year; this is the total of seed piece treatment (potato), soil treatment, and foliar treatment.</p> <p>*- For best performance use with an effective adjuvant. See "Use of Adjuvants" section.</p> <p>§ - Suppression only. Use as part of an effective control program. Rotate with products with different modes of action.</p> <p>†- Colorado potato beetle resistance management - Do not apply BENEVIA® more than twice to a generation of Colorado potato beetle or within any 30 day period. Application(s) to the next generation of Colorado potato beetle must be with an effective product with a different mode of action. Do not apply BENEVIA® for Colorado potato beetle control if any cyantraniliprole containing product was used at-plant either as a soil applied or seed treatment.</p> <p>†† - Potato Tuberworm: BENEVIA® may be applied at rates of 7 to 13.5 fl oz/A to control potato tuberworm. Begin application when field scouting indicates the presence of tuberworm adults and/or larvae. Potato tuberworm often have overlapping generations so repeat applications of BENEVIA® may be needed based on scouting. Avoid treating successive generations with the same mode of action. It is important to protect the crop just prior to harvest when foliage starts to senesce. Use the higher rate of BENEVIA® when tuberworm pressure is high. Failure to adequately control potato tuberworm larvae prior to crop senescence or vine kill increases the risk of tuber damage. Foliar sprays alone, by air or ground, may not provide adequate control of larvae in the mid to lower crop canopy. For best results, apply via overhead chemigation or integrate chemigation applications into the foliar spray program. For best results with foliar sprays, add Methylated seed oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). For chemigation applications, apply in 0.1 to 0.2 acre inches of water and add MSO at 12 to 16 fl oz/acre. See "Chemigation - Overhead Sprinkler - Potatoes and Bulb Vegetables" section for instructions on overhead sprinkler chemigation.</p> <p>Suppression of Zebra Chip Disease: Use of BENEVIA® to control potato psyllid which may vector zebra chip disease at a rate of 13.5 to 20.5 fl. oz./A applied starting when psyllid populations are low will help suppress the expression of the zebra chip disease.</p> | | | | | | |

| Crop | Application Method | Target Pest | BENEVIA® RATE | | PHI (pre-harvest interval) (days) | REI (re-entry interval) (hours) |
|---|--------------------|--|-----------------|-------------------------------|-----------------------------------|---------------------------------|
| | | | Lb. ai per acre | Fluid ounces product per acre | | |
| Tree Nuts (Crop Group 14-12) including African nut-tree; almond; beechnut; Brazil nut; Brazilian pine; bunya; bur oak; butternut; Cajou nut; candlenut; cashew; chestnut; chinquapin; coconut; coquito nut; dika nut; ginkgo; Guiana chestnut; hazelnut (filbert); heartnut; hickory nut; Japanese horse-chestnut; macadamia nut; mongongo nut; monkey-pot; monkey puzzle nut; Okari nut; Pachira nut; peach palm nut; pecan; pequi; Pili nut; pine nut; pistachio; Sapucaia nut; tropical almond; walnut, black; walnut, English; yellowhorn; cultivars, varieties, and/or hybrids of these | Foliar* | Hickory shuckworm Pecan nut casebearer | 0.055 - 0.11 | 8.5 - 17 | 5 | 12 |
| | | Codling moth† Obliquebanded leafroller Oriental fruit moth Peach twig borer†† | 0.065 - 0.133 | 10 - 20.5 | | |
| | | Navel orangeworm††† Walnut aphid | 0.088 - 0.133 | 13.5 - 20.5 | | |
| <p>Minimum application interval between treatments is 7 days.</p> <p>Do not apply a total of more than 0.4 lb ai/A of CYAZYPYR® or cyantraniliprole containing products per calendar year.</p> <p>Make no more than 3 applications of BENEVIA® or other Group 28 insecticides within a single generation of the target pest on a crop.</p> <p>Spray Volume: Thorough coverage is essential to achieve best results. Select a spray volume appropriate for the size of trees or plants and density of foliage. Where higher spray volumes are used, apply a higher rate in the specified rate range. Do not apply less than 30 gallons of water per acre by ground. For best results apply 100-150 gallons of water per acre.</p> <p>* - For best performance use with an effective adjuvant. See "Use of Adjuvants" section.</p> <p>† - Codling moth (Walnut): Make initial application at or before peak egg lay for targeted generation.</p> <p>Depending on level of infestation reapply 14 days later as needed. Use higher rates and ground application equipment to achieve thorough coverage.</p> <p>†† - Peach Twig Borer: BENEVIA® may be used throughout the growing season. For dormant applications an EPA registered dormant oil may be added to the application. For specific directions on use of oil, consult manufacturer's specific oil labels for precautions and restrictions regarding the use of oils in tree nut crops. For best performance, apply using ground equipment to achieve thorough uniform coverage of all scaffolds and limbs. For spring application to overwintering generation: Make applications at late dormant (just prior to bud break) to early bloom. For "April - May" applications to the summer generation: Make applications at peak moth flight (timed at or before peak egg lay). Higher rates in the labeled rate range may be needed for higher infestation levels and large, dense foliage trees.</p> <p>††† - Navel orange worm: Applications can be made during the "May spray" or "Hull split" application timing. For applications made at "Hull split" timing - Make an application at 1- 2% hull-split timing; make a second application approximately 10-14 days later. Depending on level of pest infestation, use of higher rates in the labeled rate range and multiple applications may be needed.</p> | | | | | | |

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not subject to temperatures below 32 degrees F. Store product in original container only in a location inaccessible to children and pets. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING: Refer to the Net Contents section of this product's labeling for the applicable "Refillable Container" or "Nonrefillable Container" designation.

Nonrefillable Rigid Plastic and Metal Containers (Capacity Equal to or Less Than 5 Gallons): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Rigid Plastic and Metal Containers (Capacity Greater Than 5 Gallons): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Rigid Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

All Refillable Containers: Refillable container. Refilling Container: Refill this container with BENEVIA® containing cyantraniliprole only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If damage is found, do not use container, contact FMC at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do not reuse or transport container, contact FMC at the number below for instructions. Disposing of Container: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Do not transport if container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact CHEMTREC (Transportation and Spills) at 1-800-424-9300, day or night.

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