



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

November 14, 2016

Ronald E. Hampton, Ph.D.
Regulatory Product Manager
Turf, Ornamentals and Pest Management
Syngenta Crop Protection, LLC
P.O. Box 18300
Greensboro, NC 27419

Subject: Label Amendment – Split label into WPS and non-WPS, and other reformatting
Product Name: Mainspring
EPA Registration Number: 100-1552
Application Date: 11/13/2015
Decision Number: 511220

Dear Dr. Hampton:

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.

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 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

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with FIFRA section 6. If you have any questions, please contact Jacquelyn Herrick by phone at 703-347-0559, or via email at herrick.jacquelyn@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'MS', with a horizontal line extending to the right.

Mark Suarez
Product Manager 07
Invertebrate & Vertebrate Branch 3
Registration Division (7505P)
Office of Pesticide Programs

Enclosure

[Master Label]

GROUP	28	INSECTICIDE
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Mainspring™

Insecticide

For foliar and systemic control of listed insect pests on ornamental plants, shrubs and trees in greenhouses and interior plantscapes [Optional marketing statements]

1. [Effective on both chewing and sucking pests]
2. [Effective thrips control]
3. [Effective whitefly control]
4. [For insecticide resistance management programs]
5. [Controls listed insect pests]
6. [Has both contact and systemic activity]
7. [Systemic activity by foliar or soil application]
8. [Flexible application methods, can be foliar or soil applied]
9. [Taken up by the roots and systemically moves through the plant]
10. [Systemically protects plants from labeled insect pests]
11. [Root absorbed, with systemic movement through plant]
12. [Systemically moves through the plant]
13. [Starts impacting labeled insect pests upon ingestion [contact]]
14. [Insect feeding stops upon ingestion]
15. [Provides quick cessation of insect feeding and residual control]
16. [Effective control of ornamental insect pests on trees and shrubs]
17. [Protects ornamentals from Japanese beetle adults [and other pests]]
18. [Protects ornamentals from Japanese beetles [and leaf feeding caterpillars]]

ACCEPTED

11/14/2016

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

100-1552

Active Ingredient:

Cyantraniliprole*

3-bromo-1-(3-chloro-2-pyridinyl)-N- [4-cyano-2-methyl-6-[(methylamino)

carbonyl]phenyl]-1H-pyrazole-5-carboxamide..... 18.66%

Other Ingredients: 81.34%

Total: 100.00%

Mainspring is a suspension concentrate (SC) formulation containing 1.67 pounds of cyantraniliprole per gallon.

*Cyantraniliprole belongs to the anthranilic diamide chemical class.

KEEP OUT OF REACH OF CHILDREN. / MANTÉNGASE FUERA DEL ALCANCE DE LOS NIÑOS.

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.)

[See additional precautionary statements and directions for use inside booklet. Vea más declaraciones de precaución e instrucciones del uso en folleto.]

EPA Reg. No. 100-1552

EPA Est. No.

SCP 1552 MAS

Net Contents

FIRST AID • PRIMEROS AUXILIOS

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

HOT LINE NUMBER

For 24-Hour Medical Emergency Assistance (Human or Animal)
or Chemical Emergency Assistance (Spill, Leak, Fire or Accident),
Call

1-800-888-8372

Cuando llame a un centro de control de envenenamiento, a un médico, o intente obtener tratamiento, tenga a la mano el envase o la etiqueta del producto. Para más información sobre el tratamiento médico de emergencia, llame al

1-800-888-8372.

PRECAUTIONARY STATEMENTS**Personal Protective Equipment (PPE)**

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

User Safety Recommendations

Users Should: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Equipo de Protección Personal (PPE)

Los aplicadores y otros manipuladores de pesticidas necesitan usar:

- Camisa de manga larga, pantalones largos.
- Zapatos y calcetines.

Después de diluir el pesticida de acuerdo a las instrucciones de uso en la etiqueta, es suficiente usar el equipo de protección como camisa de manga larga, pantalones, calcetines y zapatos. Sigue las instrucciones del fabricante para la limpieza/mantenimiento del Equipo de Protección Personal. En el caso de no existir

dichas instrucciones de limpieza para equipos de protección, utilice detergente y agua caliente. Mantenga y lave el Equipo de Protección Personal separadamente de otras prendas de vestir.

Recomendaciones de Seguridad para los Manipuladores de Pesticidas

Los Manipuladores Deben: Lávese minuciosamente con agua y jabón después de manipular los pesticidas, y antes de comer, beber, masticar chicle, usar tabaco o utilizar el sanitario. Quítese la ropa sucia y lávela antes de volverla a usar.

Environmental Hazards

This product is toxic to bees exposed to direct treatment on blooming crops or weeds. **DO NOT** apply this product or allow it to drift to blooming plants or weeds if bees are foraging the treatment area.

DO NOT contaminate water by cleaning of equipment or disposing of equipment wash water or rinsate.

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.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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.

Read and understand the entire label before using this product. Mainspring must be used in accordance with the directions of this label.

USE RESTRICTIONS AND PRECAUTIONS

For use only in commercial greenhouses and interior plantscape - not for residential use.

DO NOT allow this product to contact plants in bloom if bees are foraging in the treatment area.

DO NOT apply more than 0.73 fl oz of Mainspring per 1000 sq ft per crop or 32 fl oz of Mainspring per acre per crop (equivalent to 0.4 lb of cyantraniliprole per acre per crop).

DO NOT apply Mainspring to more than 8 crops per calendar year.

DO NOT allow chemigation water to run off or puddle following application.

Wait a minimum of 7 days to retreat.

PRODUCT INFORMATION

Mainspring is an insecticide that controls listed insect pests on listed ornamental plants, shrubs and trees in greenhouses and interior plantscapes.

Mainspring can be applied as a foliar spray and as a soil drench. When applied as a foliar spray, the product will have translaminar and systemic movement and provide residual efficacy of foliar insect pests. When Mainspring is applied by drench to the root system of plants, it will be translocated upward in the plant due to its systemic activity. Systemic upward movement in herbaceous plants will be quicker than in those of woody plants, such as trees and shrubs. Soil applications should be made prior to anticipated pest infestation to allow adequate systemic movement to achieve desired levels of control.

Mainspring controls a broad range of chewing and sucking pests. Insecticidal activity is primarily through ingestion. This results in paralysis, rapid inhibition of feeding, and disruption of other key physiological functions. Depending on the target pest, mortality occurs within two to seven days. The rapid cessation of feeding results in less plant

injury. It is recommended that Mainspring be applied when pest populations are low to prevent targeted insects from increasing to damaging levels.

Integrated Pest Management (IPM) Programs

Mainspring can be used in an integrated pest management program with biological agents for controlling ornamental pests. Beneficial arthropods can help control other insect and mite pests and reduce the potential for secondary pest outbreaks.

Mainspring can reduce the target pest species that serve as a food source for beneficial arthropods, which can indirectly affect their populations. If Mainspring is tank-mixed with a product that negatively impacts beneficial arthropods, the full benefit of Mainspring to an IPM program may not be realized.

Resistance Management

GROUP	28	INSECTICIDE
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Mainspring is in GROUP 28 of the EPA's Insecticide and Acaricide Groups based on Target Site of Action.

Some insects are known to develop resistance to products that have been used repeatedly for control. When this occurs, the label use rates can fail to reduce the pest population below threshold levels. As the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of active classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local Cooperative Extension Service specialist or pest control advisor for the latest information on resistance management in your area or crop.

Plant Safety

Phytotoxicity testing has not been performed on all possible species and cultivars. Individual plant species or cultivars may be sensitive to the final spray solution, including tank mixes. If local experience is not available, a small number of plants should be treated and observed for phytotoxicity for at least one week before making an application to the entire planting to ensure plant safety.

APPLICATION EQUIPMENT CLEANING

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all application equipment to reduce the risk of forming hardened deposits that might become difficult to remove. Drain application equipment. Thoroughly rinse application equipment 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 equipment near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

CALIBRATION OF APPLICATION EQUIPMENT

Proper maintenance and calibration of spraying and chemigation equipment are essential for optimal insect pest control. If you have questions about calibration, contact a State Extension Service specialist, the equipment manufacturer or other experts.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments if the need arises.

MIXING INSTRUCTIONS

Mainspring is a suspension concentrate (SC) formulation. Mainspring must be diluted with water before application.

Mainspring readily mixes with water and may be used in many different types of application equipment and applied to either the foliage or root system. Mix product with the required amount of water and apply according to label use directions.

The pH of application mixtures containing Mainspring should be adjusted to a pH of 8 or less using a commercially available acidifier. When applying Mainspring by chemigation, adjust the pH of the chemigation systems supply or nurse tank using a commercially available acidifier. Adjust the pH of application mixtures after all products being applied have been added to the tank and uniformly mixed for broadcast and drench applications.

Mixing Directions

1. Use clean, well maintained and properly calibrated application equipment.
2. Fill sprayer tank 1/4 to 1/2 full of water.
3. Shake the container of Mainspring well before pouring.
4. Add the appropriate amount of Mainspring directly into the sprayer tank .
5. If preparing a tank mixture, follow the tank-mixing sequence below.
6. Mix the spray solution thoroughly and continue agitation to keep the insecticide in suspension. Use mechanical or hydraulic agitation. Do not use air agitation.
7. It is recommended that the mixture not be stored in the spray or mix tank overnight.

Tank Mixtures

Mainspring may be tank-mixed with other pesticides. When tank-mixing Mainspring with other pesticides, observe the restrictions and precautions on all product labels.

- It is the pesticide user's responsibility to ensure that all products in a tank mix are registered for the intended use. Users must follow the most restrictive directions and

precautionary language of the products of the mixture (for example, PPE from one product, REI from another).

- **DO NOT** exceed the label application rates for any product.
- **DO NOT** mix Mainspring with any product containing a label prohibition against such mixing.
- Always follow the tank mix instructions of the product label that is most restrictive.

The physical compatibility of Mainspring may vary with different sources of pesticide products and local cultural practices. A jar compatibility test is recommended prior to tank-mixing with other pesticides, fertilizers or adjuvants to ensure the compatibility of Mainspring with the other products. For a jar compatibility test, mix the proper proportions of any pesticides, adjuvants, or fertilizers in water in a pint or quart jar and allow it to stand at least 20 minutes. If the combination remains mixed or can be re-mixed readily, the mixture is considered physically compatible.

Tank-mixing Sequence

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

1. Water-soluble bags
2. Water-dispersible granules
3. Wettable powders
4. Mainspring and other water-based suspension concentrates
5. Water-soluble concentrates
6. Oil-based suspension concentrates
7. Emulsifiable concentrates
8. Adjuvants, surfactants, oils
9. Soluble fertilizers

APPLICATION PROCEDURES

SECTION 1: COMMERCIAL GREENHOUSES

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 (sod farms included), 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 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.

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

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

Exception: If the product is drenched, soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated. No restricted-entry interval (REI) is required following soil injection, soil incorporated or a soil drench application.

1.1 FOLIAR APPLICATION

Foliar application rates are listed in Table 1. Foliar applications offer locally systemic activity with residual control of listed pests. Mix the Mainspring with the required amount of water and apply as a full-coverage foliar spray to control the target pest. Apply Mainspring when pest populations are low to prevent them from increasing to damaging levels.

When making foliar applications to plants with hard-to-wet foliage, such as holly, ivy, or pine, the addition of a spreading adjuvant is recommended. However, do not use adjuvants with binding or sticking properties, as these may reduce absorption of Mainspring by the plant. Use sufficient water volume to provide thorough and uniform coverage. Avoid making applications where uniform coverage cannot be obtained or where excessive spray drift can occur. If making a low-volume or mist-type application, use the equivalent amount of product as you would when making an application with higher volumes of water for a given area.

TABLE 1. FOLIAR APPLICATION TO LISTED PLANTS GROWN IN GREENHOUSES

Ornamentals		
Breeding crops	Foliage plants	Shrubs
Bulb, corm, and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents
Evergreens (including conifers)	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹
Flowering plants	Palms	Vines (non-bearing) ¹
Flowers grown for seed production	Perennial plants	
	Pot and bedding plants	
Target Pests	Amount of Mainspring	Use Directions
Aphids	4 – 8 fl oz per 100 gal 1.2 – 2.4 ml per gal	Start treatments at first signs of pest infestation. Reapply on a 7- to 14-day interval.
Lace bugs Leaf-feeding beetles (such as Japanese beetle adults and viburnum leaf beetle larvae) Leaf-feeding caterpillars (such as fall webworms, gypsy moths, redbud leaf-folders) Leafminers Soft scales (such as oak lecanium scales) Thrips Whiteflies ²	2 – 8 fl oz per 100 gal 0.6 – 2.4 ml per gal	
All pests listed above - maximum residual control	16 fl oz per 100 gal 4.7 ml per gal	
USE RESTRICTION		
Maximum Rate: DO NOT apply more than 0.73 fl oz per 1000 sq ft per crop or 32 fl oz of product per acre per crop (equivalent to 0.4 lb of cyantraniliprole per acre per crop). DO NOT apply Mainspring to more than 8 crops per calendar year.		

One fl oz = 29.5 milliliters.

¹Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

1.2 APPLICATION TO SOIL MEDIA

Mainspring can be applied to the growing media of containerized plants to control listed ornamental pests. Apply Mainspring when pest populations are low to prevent the pest population from increasing to damaging levels. Apply to moist soil media. **DO NOT** apply to dry or saturated soil media. For optimal performance, **DO NOT** apply drench to soil media until roots have grown after transplanting. **DO NOT** leach treated soil media for at least 7 days after application or performance may be reduced. Excessive irrigation after application could reduce insect control performance. In general, higher listed rates will be needed to control insect pests on woody plants as compared to those on herbaceous plants.

1.2.1 Drench Application

For drench applications, prepare a dilute drench solution by mixing Mainspring in water at the rate listed in **Table 2**. Apply drench solution to containers, flats, trays, benches or beds according to the application rates given in **Table 2**. Drench volume should thoroughly wet soil media without overflowing or leaching from the container. Follow the drench application with moderate irrigation. Irrigate carefully during the next 10 days to avoid loss of active ingredient from the container.

TABLE 2. DRENCH APPLICATION TO SOIL MEDIA OF LISTED CONTAINERIZED PLANTS GROWN IN GREENHOUSES

Ornamentals					
Breeding crops		Foliage plants		Shrubs	
Bulb, corm, and tuber crops (such as tulips, calla lilies)		Ground covers		Succulents	
Evergreens (including conifers)		Ornamental grasses		Trees, including non-bearing fruit and nut trees ¹	
Flowering plants		Palms		Vines (non-bearing) ¹	
Flowers grown for seed production		Perennial plants			
		Pot and bedding plants			
Target Pests	Amount of Mainspring	Amount of drench solution to apply per container		Use Directions	
Aphids	8 – 12 fl oz per 100 gal	Container Size (inches)	fl oz solution/ container	Start treatment at the first sign of pest infestation. Reapply as needed according to use directions. Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.	
Leaf-feeding caterpillars (such as armyworms and loopers)	2.4 – 3.6 ml per gal	4	2 - 3		
Leafminers		5	3 - 4		
Thrips (foliar feeding)		6	4		
Whiteflies, such as <i>Bemisia</i> spp. (Biotype B & Q) ²		7	5 - 7		
Other ornamental pests		8	6 - 10		
		10	16 - 20		
		For larger containers, apply 6 – 8 fl oz of dilute solution per gallon of soil media.			
		For flats, trays, benches, or beds, apply sufficient amount of drench solution to adequately wet soil media without leaching.			
USE RESTRICTION					
Maximum Rate:					
DO NOT apply more than 0.73 fl oz per 1000 sq ft per crop or 32 fl oz of product per acre per crop (equivalent to 0.4 lb of cyantraniliprole per acre per crop).					
DO NOT apply Mainspring to more than 8 crops per calendar year.					

One fl oz = 29.5 milliliters

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

1.3 Application through Irrigation systems (Chemigation)

Mainspring may be applied by injection into an irrigation system, either alone or in combination with other pesticides or chemicals that are registered for application through irrigation systems. Dilution ratios are typically 1:100 to 1:200 depending on the system. Application rates are presented in Table 3 below.

Apply this product only through micro-irrigation (individual spaghetti tube), drip irrigation, overhead irrigation, ebb-and-flood irrigation, or motorized, calibrated irrigation equipment. **DO NOT** apply through any other type of irrigation system. Non-uniform distribution of chemigation water can result in reduced product effectiveness.

Apply Mainspring under the instructions specified in the specific use recommendations and not according to the irrigation schedule unless the events coincide. In general, set the equipment to apply the minimum amount of water per acre. Run the system at 86–90% of the manufacturer's maximum rated travel speed.

Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Using Water from Public Water Systems

DO NOT APPLY MAINSPRING THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM.

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 daily at least 60 days per year. Mainspring may be applied through irrigation systems that are supplied by a public water system **ONLY** if the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There must be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements:

Operating Instructions for All Recommended Types of Irrigation Systems

1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
2. 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing, check valve to prevent the flow of fluid back toward the injection pump.
4. 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Do not apply when wind speed favors drift beyond the area intended for treatment.

1.3.1 Chemigation using Micro, Drip, Overhead or Motorized Irrigation Equipment

To prepare injector tank solution, add Mainspring to 1 gallon of injector tank water. An injection ratio of 1:100 is recommended (1 part injector tank solution to 100 parts irrigation water).

TABLE 3. CHEMIGATION USING MICRO, DRIP, OVERHEAD, OR MOTORIZED IRRIGATION EQUIPMENT OF SOIL MEDIA OF CONTAINERIZED PLANTS GROWN IN GREENHOUSES

Ornamentals			
Breeding crops	Foliage plants	Shrubs	
Bulb, corm, and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents	
Evergreens (including conifers)	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹	
Flowering plants	Palms	Vines (non-bearing) ¹	
Flowers grown for seed production	Perennial plants		
	Pot and bedding plants		
Target Pests	Chemigation Rate		Use Directions
Aphids Leaf-feeding caterpillars (such as armyworms and loopers) Leafminers	Injection Ratio	Fl oz product per gallon injector tank water	Start treatment at first sign of pest infestation. Reapply as needed as per use directions. Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
	1 to 100	8 –12	
Thrips (foliar feeding) Whiteflies, such as <i>Bemesia</i> spp. (Biotype B &Q) ² Other ornamental pests	Irrigation system should be calibrated to deliver 6-8 fl oz of dilute solution per gallon of soil media.		
USE RESTRICTION			
Maximum Rate: DO NOT apply more than 0.73 fl oz per 1000 sq ft per crop or 32 fl oz of product per acre per crop (equivalent to 0.4 lb of cyantraniliprole per acre per crop). DO NOT apply Mainspring to more than 8 crops per calendar year.			

One fl oz = 29.5 milliliters

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

1.3.2 Ebb-and-Flood Chemigation

To calculate the volume of water needed for chemigation using ebb-and-flood irrigation:

1. Bring a minimum of 10 containers to a soil moisture of field capacity.
2. Allow the soil media to dry.
3. Bring the containers back to field capacity.
4. Multiply the amount of water needed to bring the soil in a single container back to field capacity by the total number of containers to be chemigated.
5. Add this volume to the amount of water needed to flood the area to be treated.

TABLE 4. CHEMIGATION (EBB-AND-FLOOD) OF SOIL MEDIA OF CONTAINERIZED PLANTS GROWN IN GREENHOUSES

Ornamentals			
Breeding crops	Foliage plants	Shrubs	
Bulb, corm, and tuber crops (such as tulips, calla lilies)	Ground covers	Succulents	
Evergreens (including conifers)	Ornamental grasses	Trees, including non-bearing fruit and nut trees ¹	
Flowering plants	Palms	Vines (non-bearing) ¹	
Flowers grown for seed production	Perennial plants		
	Pot and bedding plants		
Target Pests	Chemigation Rate		Use Directions
Aphids	Container Size (inches)	Fl oz Mainspring/ 1,000 containers	Start treatment at the first sign of pest infestation. Reapply as needed according to use directions.
Leaf-feeding caterpillars (such as armyworms and loopers)			
Leafminers	5	2.5 – 3.8	
Thrips (foliar feeding)	6	2.5 – 3.8	
Whiteflies, such as <i>Bemesia</i> spp. (Biotype B & Q) ²	7	4.4 – 6.6	
Other ornamental pests	8	6.3 – 9.5	
	10	12.7 – 19.0	Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
	For larger containers, apply 6 fl oz of Mainspring per 1,000 gallons of soil media.		
USE RESTRICTION			
Maximum Rate:			
DO NOT apply more than 0.73 fl oz per 1000 sq ft per crop or 32 fl oz of product per acre per crop (equivalent to 0.4 lb of cyantraniliprole per acre per crop).			
DO NOT apply Mainspring to more than 8 crops per calendar year.			

One fl oz = 29.5 milliliters

¹ Non-bearing fruit and nut trees and vines are those trees and vines that will not bear edible fruit or nuts for one year after application.

² May observe less activity on *Trialeurodes* spp.

SECTION 2: INTERIOR PLANTSCAPES

NON-AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow others to enter the treated area until sprays have dried.

2.1 FOLIAR APPLICATION

Foliar application rates are listed in Table 5. Foliar applications offer locally systemic activity with residual control of listed pests. Mix the Mainspring with the required amount of water and apply as a full-coverage foliar spray to control the target pest. Apply Mainspring when pest populations are low to prevent them from increasing to damaging levels.

When making foliar applications to plants with hard-to-wet foliage, such as holly, ivy, or pine, the addition of a spreading adjuvant is recommended. However, do not use adjuvants with binding or sticking properties, as these may reduce absorption of Mainspring by the plant. Use sufficient water volume to provide thorough and uniform coverage. Avoid making applications where uniform coverage cannot be obtained or where excessive spray drift can occur. If making a low-volume or mist-type application, use the equivalent amount of product as you would when making an application with higher volumes of water for a given area.

TABLE 5. FOLIAR APPLICATION TO LISTED PLANTS GROWN IN INTERIOR PLANTSCAPES

Ornamentals		
Plants in interior plantscapes		
Target Pests	Amount of Mainspring	Use Directions
Aphids	4 – 8 fl oz per 100 gal 1.2 – 2.4 ml per gal	Start treatments at first signs of pest infestation. Reapply on a 7- to 14-day interval.
Lace bugs Leaf-feeding beetles (such as Japanese beetle adults and viburnum leaf beetle larvae) Leaf-feeding caterpillars (such as fall webworms, gypsy moths, redbud leaf-folders) Leafminers Soft scales (such as oak lecanium scales) Thrips Whiteflies ¹	2 – 8 fl oz per 100 gal 0.6 – 2.4 ml per gal	
All pests listed above - maximum residual control	16 fl oz per 100 gal 4.7 ml per gal	
USE RESTRICTIONS		
Maximum Rate: DO NOT apply more than 0.73 fl oz per 1000 sq ft per calendar year (equivalent to 0.4 lb of cyantraniliprole per acre per calendar year).		

One fl oz = 29.5 milliliters.

¹May observe less activity on *Trialeurodes* spp.

2.2 APPLICATION TO SOIL MEDIA

Mainspring can be applied to the growing media of containerized plants to control listed ornamental pests. Apply Mainspring when pest populations are low to prevent the pest population from increasing to damaging levels. Apply to moist soil media. **DO NOT** apply to dry or saturated soil media. For optimal performance, **DO NOT** apply drench to soil media until roots have grown after transplanting. **DO NOT** leach treated soil media for at least 7 days after application or performance may be reduced. Excessive irrigation after application could reduce insect control performance. In general, higher listed rates will be needed to control insect pests on woody plants as compared to those on herbaceous plants.

2.2.1 Drench Application

For drench applications, prepare a dilute drench solution by mixing Mainspring in water at the rate listed in **Table 6**. Apply drench solution to containers, flats, trays, benches or beds according to the application rates given in **Table 6**. Drench volume should thoroughly wet soil media without overflowing or leaching from the container. Follow the drench application with moderate irrigation. Irrigate carefully during the next 10 days to avoid loss of active ingredient from the container.

TABLE 6. DRENCH APPLICATION TO SOIL MEDIA OF LISTED CONTAINERIZED PLANTS GROWN IN INTERIOR PLANTSCAPES

Ornamentals				
Plants in interior plantscapes				
Target Pests	Amount of Mainspring	Amount of drench solution to apply per container		Use Directions
Aphids Leaf-feeding caterpillars (such as armyworms and loopers) Leafminers Thrips (foliar feeding) Whiteflies, such as <i>Bemesia</i> spp. (Biotype B & Q) ¹ Other ornamental pests	8 – 12 fl oz per 100 gal	Container Size (inches)	fl oz solution/ container	Start treatment at the first sign of pest infestation. Reapply as needed according to use directions. Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
		4	2 - 3	
	2.4 – 3.6 ml per gal	5	3 - 4	
		6	4	
		7	5 - 7	
		8	6 - 10	
10	16 - 20			
		For larger containers, apply 6 – 8 fl oz of dilute solution per gallon of soil media.		
		For flats, trays, benches, or beds, apply sufficient amount of drench solution to adequately wet soil media without leaching.		
USE RESTRICTIONS				
Maximum Rate: DO NOT apply more than 0.73 fl oz per 1000 sq ft per calendar year (equivalent to 0.4 lb of cyantraniliprole per acre per calendar year).				

One fl oz = 29.5 milliliters

¹May observe less activity on *Trialeurodes* spp.

2.3 Application through Irrigation systems (Chemigation)

Mainspring may be applied by injection into an irrigation system, either alone or in combination with other pesticides or chemicals that are registered for application through irrigation systems. Dilution ratios are typically 1:100 to 1:200 depending on the system. Application rates are presented in Table 3 below.

Apply this product only through micro-irrigation (individual spaghetti tube), drip irrigation, overhead irrigation, ebb-and-flood irrigation, or motorized, calibrated irrigation equipment. **DO NOT** apply through any other type of irrigation system. Non-uniform distribution of chemigation water can result in reduced product effectiveness.

Apply Mainspring under the instructions specified in the specific use recommendations and not according to the irrigation schedule unless the events coincide. In general, set the equipment to apply the minimum amount of water per acre. Run the system at 86–90% of the manufacturer's maximum rated travel speed.

Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Using Water from Public Water Systems

DO NOT APPLY MAINSPRING THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM.

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 daily at least 60 days per year. Mainspring may be applied through irrigation systems that are supplied by a public water system **ONLY** if the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There must be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements:

Operating Instructions for All Recommended Types of Irrigation Systems

1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
2. 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing, check valve to prevent the flow of fluid back toward the injection pump.
4. 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Do not apply when wind speed favors drift beyond the area intended for treatment.

2.3.1 Chemigation using Micro, Drip, Overhead or Motorized Irrigation Equipment

To prepare injector tank solution, add Mainspring to 1 gallon of injector tank water. An injection ratio of 1:100 is recommended (1 part injector tank solution to 100 parts irrigation water).

TABLE 7. CHEMIGATION USING MICRO, DRIP, OVERHEAD, OR MOTORIZED IRRIGATION EQUIPMENT OF SOIL MEDIA OF CONTAINERIZED PLANTS GROWN IN INTERIOR PLANTSCAPES

Ornamentals			
Plants in interior plantscapes			
Target Pests	Chemigation Rate		Use Directions
Aphids Leaf-feeding caterpillars (such as armyworms and loopers) Leafminers Thrips (foliar feeding) Whiteflies, such as <i>Bemisia</i> spp. (Biotype B & Q) ¹ Other ornamental pests	Injection Ratio	Fl oz product per gallon injector tank water	Start treatment at first sign of pest infestation. Reapply as needed as per use directions.
	1 to 100	8 –12	
	Irrigation system should be calibrated to deliver 6-8 fl oz of dilute solution per gallon of soil media.		Apply the specified volume of product to the growing container based on container size. Follow with moderate irrigation. Irrigate carefully over the next 10 days and avoid leaching of the container.
USE RESTRICTIONS			
Maximum Rate: DO NOT apply more than 0.73 fl oz per 1000 sq ft per calendar year (equivalent to 0.4 lb of cyantraniliprole per acre per calendar year).			

One fl oz = 29.5 milliliters

¹ May observe less activity on *Trialeurodes* spp.

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. Not for use or storage in or around the home.

Pesticide Disposal

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

Container Handling [less than or equal to 5 gallons]

Non-refillable 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 offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Container Handling [greater than 5 gallons]

Non-refillable 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 offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Container Handling [greater than 5 gallons]

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate

water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

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