

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



OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

June 17, 2014

Ronald E. Hampton
Syngenta Crop Protection, LLC
PO Box 18300
Greensboro, NC 27419

Subject: HGW86 GH&N Insect Control, EPA Reg. # 100-1543
convert to Syngenta label following product transfer
submitted 4/14/2014 as notification – rejected (D#490312)
revision submitted 6/17/2014 as amendment – accepted (D# 492186)

Dear Mr. Hampton:

This product was recently transferred from EPA Reg. # 352-863. A label notification was originally submitted on 4/14/2014 to convert the product label to a Syngenta product. As changes to the label notification were required, the notification was rejected and the revised label submitted on 6/17/2014 was tracked as a label amendment. The revised labeling referenced above submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is ACCEPTABLE.

Submit a copy of your final printed labeling incorporating the above changes prior to releasing your product for shipment. If this provision is not complied with the registration will be subject to cancellation in accordance with FIFRA Section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A copy of the label stamped "accepted" is enclosed for your records. If you have any questions please contact Tom Harris at (703) 308-9423 or harris.thomas@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Meredith F. Laws".

Meredith F. Laws, Chief
Insecticide-Rodenticide Branch
Registration Division (7505P)
Office of Pesticide Programs
Date: June 17, 2014

Enclosure

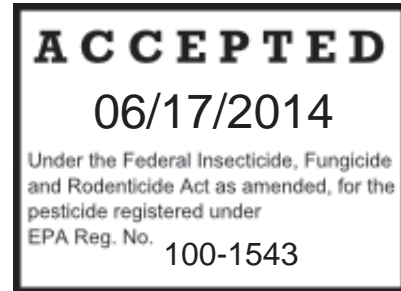
[Master Label]

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

GROUP 28 INSECTICIDE

**HGW86 GH&N INSECT CONTROL
[ABN = MAINSPRING™ GH&N]**

Insecticide



For foliar and systemic insect control on ornamental plants/shrubs/trees and vegetable transplants in and around greenhouses, nurseries, interior landscapes, lath and shade-houses.

[Optional marketing statements]

1. [Effective on both chewing and sucking pests]
2. [Effective thrips control]
3. [Effective whitefly control]
4. [Excellent for insecticide resistance management programs]
5. [Controls resistant insect pests]
6. [Mode of action like no other in greenhouse and nursery production]
7. [Excellent choice for IPM programs]
8. [Low application rates]
9. [Has both contact and systemic activity]
10. [Systemic activity by foliar or soil application]
11. [Flexible application methods, can be foliar or soil applied]
12. [Taken up by the roots and systemically moves through the plant]
13. [Systemically protects plants from labeled insect pests]
14. [Root absorbed, with systemic movement through plant]
15. [Systemically moves through the plant]
16. [Starts impacting labeled insect pests upon ingestion [contact]]
17. [Insect feeding stops upon ingestion]

000100-01543.20140617.000100-01543.20140410.HGW86-GH-N-Insect-Control.pdf

HGW86 GH&N Insect Control (100-1543)

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%

HGW86 GH&N Insect Control is a suspension concentrate. This product contains 1.67 pounds of active ingredient per gallon.

*Cyantraniliprole belongs to the anthranilic diamide chemical class.

KEEP OUT OF REACH OF CHILDREN

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

EPA Reg. No. 100-1543

[EPA Est. No. placeholder]

[Net Contents placeholder]

Net Contents

[Refillable/Non-refillable Container]

FIRST AID

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

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.

ENVIRONMENTAL HAZARDS

Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. This pesticide is toxic to aquatic invertebrates. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are 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 a high potential for reaching surface water via runoff for several months or more after application.

Do not make ground applications within 25 feet of lakes, rivers, reservoirs, permanent streams, marshes, natural ponds, estuaries or coastal areas. Do not cultivate within 25 feet of the aquatic area to allow growth of a vegetative filter strip. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory

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 when the pesticide is applied as a seed treatment, soil, tree injection, as well as 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 around the application site.
- Minimize drift of this product on to 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

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.

1. FOR FOOD 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 one of 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.
- Unless otherwise stated for a specific crop or plant, do not apply a total of more than 0.4 lb ai/A of cyantraniliprole-containing products per year. This is the total from all application methods (e.g., seed, soil, foliar).

NON-AGRICULTURAL PRODUCTS:



Do not apply HGW86 GH&N Insect Control while bees are foraging. Do not apply HGW86 GH&N Insect Control to plants that are flowering. Only apply after all flower petals have fallen off.

Read and understand the entire label before using this product. HGW86 GH&N must be used in accordance with the directions of this label. Syngenta will not be responsible for losses or damages resulting from the use of this product in any manner not specifically stated on this label or other labels or bulletins published by Syngenta. User assumes all risks associated with such non-specified use.

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

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.

Professional applications to golf courses, residential, industrial and commercial lawns and sports fields are not within the scope of the Worker Protection Standard. Do not enter or allow others to enter the treated area until sprays have dried

RESTRICTIONS

- Do not apply to greenhouse or field grown vegetables, only apply to vegetable transplants grown in enclosed structures.
- Avoid runoff or puddling of irrigation water following application.
- Avoid application to areas that are water logged or saturated or frozen, which will not allow penetration into the root zone of the plant.
- Do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per year.
- Keep people and pets away from treated area until treatment has dried.
- For foliar treatments, wait a minimum of 7 days to retreat.
- Always shake container well before use.
- Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

PRODUCT INFORMATION

HGW86 GH&N Insect Control is a suspension concentrate that may be applied for insect control on ornamental plants/shrubs/trees and vegetable transplants in greenhouses, nurseries, interior landscapes, lath and shadehouses. HGW86 GH&N Insect Control can be applied as a foliar spray, a soil broadcast spray, a soil drench, and soil injection and via chemigation. When applied as a foliar spray, the product will have translaminar movement and be locally systemic providing residual efficacy of foliar insect pests. When HGW86 GH&N Insect Control is applied 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 and to achieve optimum levels of control.

HGW86 GH&N Insect Control is in GROUP 28 of the EPA's Insecticide and Acaricide Groups Based on Target Site of Action (EPA PR Notice 2001-5) and may be used in rotational resistance management programs.

HGW86 GH&N Insect Control must be diluted with water before application.

Consult your Cooperative Extension Service specialist or pest control advisor for regionally specific information regarding application timing.

MIXING INSTRUCTIONS:

Application Equipment Preparation

Application equipment must be clean and free of previous pesticide deposits before mixing HGW86 GH&N Insect Control.

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 HGW86 GH&N Insect Control well before pouring.
4. Then add HGW86 GH&N Insect Control directly to the sprayer tank.
5. Mix thoroughly to fully disperse the insecticide and continue agitation to keep the insecticide in suspension. Use mechanical or hydraulic agitation. Do not use air agitation.
6. It is recommended that the mixture not be stored in the spray or mix tank overnight.

Tank-mixtures

HGW86 GH&N Insect Control may be tank-mixed with other pesticides. When tank-mixing HGW86 GH&N Insect Control with other pesticides, observe all precautions and limitations on each separate product labels. Do not exceed label dosage rates.

HGW86 GH&N Insect Control may not be mixed with any product containing a label prohibition against such mixing. The physical compatibility of HGW86 GH&N Insect Control will vary with different sources of pesticide products and local cultural practices. For a tank-mixture test, prepare on a small scale (pint or quart jar) using the proper proportions of pesticides and water to ensure the physical compatibility of the mixture. Always follow the tank mix instructions of the product label that is most restrictive.

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. HGW86 GH&N Insect Control 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
10. Drift retardants

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.

APPLICATION PROCEDURES AND SPRAY EQUIPMENT

HGW86 GH&N Insect Control 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 as desired dependent upon the selected use pattern.

SPRAY DRIFT REDUCTION MANAGEMENT

Do not apply when wind speed favors drift beyond the area intended for treatment. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all of these factors when making application decisions. Avoiding spray drift is the responsibility of the applicator.

Importance of Droplet Size: An important factor influencing drift is droplet size. Select nozzles and pressure that deliver medium spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572. Nozzles that deliver coarse spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain crop coverage. For aerial application, spray should be released at the lowest possible height consistent with good pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided. Low humidity and high temperature increase the evaporation rate of spray droplets and therefore the likelihood of spray drift to aquatic areas. Avoid spraying during conditions of low humidity and/or high temperature.

Wind Speed Restrictions: Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size, canopy and equipment specifications determine drift potential at any given wind speed. Do not apply when winds are greater than 15 mph and avoid gusty and windless conditions. Avoiding applications when wind direction is toward an aquatic area can reduce risk exposure to sensitive aquatic areas.

Restrictions During Temperature Inversions: Do not make aerial or ground applications during temperature inversions. Drift potential is high during temperature inversions. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature 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. Their presence can be indicated by ground fog. However, if fog is not present, the movement of smoke from a ground source can also identify inversions. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

FOLIAR APPLICATIONS

Foliar treatment application rates are listed in Table 1. Mix the appropriate amount HGW86 GH&N Insect Control with the required amount of water and apply as a full coverage foliar spray to control the selected target pest. Foliar applications offer locally systemic activity against insect pests. Repeat treatment as necessary to maintain control using higher application rates as pest pressure and foliage area increases while following resistance management recommendations.

Certain plant species or cultivars may be sensitive to the final spray solution. If local experience is not available, then 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. When making foliar applications to plants or crop with dense canopy or with hard to wet foliage such as holly, ivy, or pine, the addition of a spreader sticker is recommended. 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 concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the spray areas as would be used in a dilute solution.

Restriction: Do not exceed a total of 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per year.

BROADCAST APPLICATIONS

Broadcast applications of HGW86 GH&N Insect Control may be applied for white grub, annual bluegrass weevils, billbugs, chinch bugs (suppression), turf caterpillars, European crane flies, and spittlebugs in grassy, weedy, or bare soil areas. Broadcast application rates for these areas are presented in Table 2. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gallons per 1,000 square feet is recommended). Irrigate immediately after application or allow rainfall to move the product into the soil. Use properly calibrated application equipment that will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off target drift. HGW86 GH&N Insect Control may be applied either before planting or after plants have been established.

Restriction: Do not exceed a total of 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per year in soil broadcast applications.

APPLICATION TIMING

White Grubs: Apply HGW86 GH&N Insect Control from [April][May][June] to [early] September for preventative and early curative control of listed white grub species. The need for an application may be based on historical monitoring of the site, previous

records or experiences, current season adult trapping or other methods. Irrigate turf immediately after application or allow rainfall to move the product into the soil.

Annual Bluegrass Weevil: Apply HGW86 GH&N Insect Control when overwintered adult annual bluegrass weevils are observed in late April or early May to prevent damage from first generation larvae in late-May and June. An application of HGW86 GH&N Insect Control at this time will also provide white grub control.

Billbugs: Apply HGW86 GH&N Insect Control when overwintered adult billbugs are first observed. This will usually occur in late April or early May in regions with cool-season turfgrasses. An application of HGW86 GH&N Insect Control at this time will also provide white grub control.

Chinch Bugs: For suppression of chinch bugs, apply HGW86 GH&N Insect Control before eggs hatch.

European Crane Fly: Apply HGW86 GH&N Insect Control between July and November to control the fall generation of European crane fly larvae in turfgrass. An application of HGW86 GH&N Insect Control in early July will also provide excellent white grub control. The higher rate listed in Table 1 may be required to achieve control when applications are made in November.

Spittlebugs: HGW86 GH&N Insect Control will provide control of two-lined spittlebug when applications are made in spring or summer.

Turf Caterpillars: HGW86 GH&N Insect Control will provide excellent curative and residual caterpillar control in turfgrass. To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. Mowing vegetation to lowest possible height will ensure more consistent control. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gallons per 1,000 square feet is recommended for grassy, weedy, or bare soil areas).

CONTAINER APPLICATIONS SOIL MEDIA

Soil media applications of HGW86 GH&N Insect Control can be made to containerized plants to control whiteflies and other ornamental pests. Application to soil media of containerized plants is presented in Table 3. It is recommended to only apply to moist soil media and not apply to dry or saturated soil media. For optimal performance, do not apply drench to soil media until roots from transplanting have grown. Do not leach treated soil media for at least 7 days after application or performance may be reduced. Heavy rainfall or excessive irrigation after application could reduce insect control performance. In general, higher rates will be needed to control insect pests on woody plants as compared to those on herbaceous plants.

IRRIGATION SYSTEMS (CHEMIGATION) APPLICATIONS

HGW86 GH&N Insect Control 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. Application dosages are presented in Table 3 below. Dilution ratios are normally 1:100 to 1:200, depending on the system. 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. Lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Using Water from Public Water Systems

DO NOT APPLY HGW86 GH&N INSECT CONTROL 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. HGW86 GH&N Insect Control may be applied through irrigation systems which may be 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 shall 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 which 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.

HGW86 GH&N Insect Control should be applied under the schedule specified in the specific use recommendations, 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.

The following calibration and application techniques are provided for user reference, but do not constitute a warranty of fitness for application through sprinkler irrigation equipment. Users should check with state and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

IN-GROUND SOIL DRENCH & INJECTION APPLICATIONS

HGW86 GH&N Insect Control is a systemic product and will be translocated upward into the plant from root uptake. Soil treatment application rates are listed in Table 4. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. For this reason, basal application within one to three feet of the root flare of trees and shrubs is recommended. Application can be made by soil injection, soil drenches and soil broadcast sprays. When making soil applications to plants with woody stems, systemic activity will be delayed until the active ingredient is translocated throughout the plant. In some cases, this delay could be 60 days or longer. For this reason, applications should be made prior to anticipated pest infestation to achieve optimum levels of control.

The calculations for soil injection/drench applications of HGW86 GH&N Insect Control involve five easy steps:

Step 1: Calibrate the application equipment to determine its flow rate in gallons per minute.

Step 2: Select an injecting/drenching volume per inch of tree diameter at breast height (DBH) or foot of shrub height.

Step 3: Refer to the Table 5 below to determine the amount of time that is required to deliver the desired volume per injection/drench site. The example highlighted in Table 5 shows that 10 seconds are required per inch of tree DBH or foot of shrub height when injecting/drenching 1 quart of solution per site using a flow rate of 1.5 gallons per minute.

Step 4: Determine how much solution to mix.

Step 5: Refer to the Table 6 below to determine the amount of HGW86 GH&N Insect Control that must be mixed in the desired volume of water based on the injection volume identified above.

INTEGRATED PEST MANAGEMENT (IPM) PROGRAMS

HGW86 GH&N Insect Control is recommended for IPM programs in greenhouses and nurseries because it does not directly impact natural arthropod predator and parasitoid populations including ladybird beetles, lacewings, minute pirate bugs and predatory mites. The feeding behavior of predatory beneficial arthropods will aid in extending natural control of other insect and mite pests and will reduce the possibility of secondary pest outbreaks. HGW86 GH&N Insect Control will reduce the target pest species that may serve as a food source for beneficial arthropods. If HGW86 GH&N Insect Control is tank-mixed with a product that negatively impacts beneficial arthropods, then the full benefit of HGW86 GH&N Insect Control to the IPM program may not be realized.

RESISTANCE MANAGEMENT RECOMMENDATIONS

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

TABLE 1. INFORMATION FOR FOLIAR SYSTEMIC INSECT PEST CONTROL WITH HGW86 GH&N INSECT CONTROL IN AND AROUND GREENHOUSES, NURSERIES, INTERIOR PLANTSCAPES, LATH AND SHADEHOUSES.

PLANTS	TARGET PESTS	DOSAGE* (per 100 gal)	REMARKS
Trees, including non-bearing fruit and nut trees*** Shrubs Evergreens Bedding Plants Flowering Plants Flowers Foliage Plants	Lace bugs, leaf-feeding caterpillars (such as fall webworms, gypsy moths, redbud leaffolders), soft scales (such as oak lecanium scales), thrips and whiteflies	1-8 fl oz	Start treatments prior to establishment of high pest pressure and reapply as needed.
Ground Covers Vines (non-bearing) Interior Plantscape Plants Vegetable Transplants****	Japanese beetle adults and other leaf-feeding beetles (such as viburnum leaf beetle larvae)	2-8 fl oz	
	For maximum residual control of the pests listed above	16 fl oz	

*For crops grown outdoors, do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per crop.

**For crops grown indoors, do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per crop.

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

****Vegetable Transplants include: fruiting vegetables, leafy vegetables, and tuberous and corm vegetables.

TABLE 2. SPECIFIC USE INSTRUCTIONS FOR BROADCAST APPLICATIONS OF HGW86 GH&N INSECT CONTROL IN AND AROUND GREENHOUSES, NURSERIES, INTERIOR PLANTSCAPES, LATH AND SHADEHOUSES.

USE	TARGET PEST	DOSAGE* (PRODUCT PER ACRE)	DOSAGE (PRODUCT PER 1,000 SQ FT)	REMARKS
Grassy, weedy, mulched, or bare soil areas in and around greenhouses, nurseries, interior plantscapes, lathhouses and shadehouse. Also for areas under trees and shrubs that are being grown in-ground.	Turf caterpillars (including armyworms, cutworms and sod webworms)	2–16 fl oz	0.046–0.367 fl oz	Mowing vegetation to lowest possible height prior to application will ensure more consistent control. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gal per 1,000 sq ft is recommended for grassy, weedy, mulched, or bare soil areas).
	White Grubs (including Aphodius spp., Asiatic garden beetle, black turfgrass ataenius**, European chafer, green June beetle, Japanese beetle, May/June beetles (Phyllophaga spp.), northern masked chafer, oriental beetle, southern masked chafer and sugarcane grub	8–16 fl oz	0.184–0.367 fl oz	
	Annual bluegrass weevil	12–20 fl oz	0.275–0.459 fl oz	
	Billbugs	8–20 fl oz	0.184–0.459 fl oz	
	Chinch bugs (suppression only)	8–20 fl oz	0.184–0.459 fl oz	
	European Crane Fly	8–16 fl oz	0.184–0.367 fl oz	
	Spittlebugs	12–20 fl oz	0.275–0.459 fl oz	

*Do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per year.

**Applications targeting black turfgrass ataenius larvae should be applied before the eggs of the first generation hatch. In most areas, applications should be made during April and May to ensure control of the first generation larvae. This application will control both first and second generation black turfgrass ataenius larvae.

TABLE 3. SPECIFIC USE INSTRUCTIONS FOR SOIL MEDIA APPLICATIONS OF HGW86 GH&N INSECT CONTROL TO CONTAINERIZED PLANTS IN AND AROUND GREENHOUSES, NURSERIES, INTERIOR PLANTSCAPES, LATH AND SHADEHOUSES BY APPLICATION OF SOIL DRENCH OR IRRIGATION SYSTEM.

CROP	PEST	USE	DOSAGE ¹	
Trees, including non-bearing fruit and nut trees ³ Shrubs Evergreens Bedding Plants Flowering Plants Flowers Foliage Plants Ground Covers Vines (non-bearing) Interior Plantscape Plants Vegetable Transplants ⁴	Aphids, whiteflies (including sweet- potato whitefly B-biotype) and other ornamental pests.	Soil media drench for plants grown in containers. Irrigation systems such as micro-irrigation, drip irrigation, overhead irrigation, ebb and flood irrigation or motorized irrigation equipment.	Soil Media Drench Solution⁵	
			12 fl oz (355 ml) per 100 gal	0.12 fl oz (3.6 ml) per gal
			Container Size (inches)	Fl oz of dilute solution per container (ai/container)
			4	2 (0.011)
			5	3 (0.017)
			6	4 (0.022)
			7	5 (0.028)
			8	6 (0.033)
For larger containers, apply 3--4 fl oz of dilute solution per gallon of soil media. Drench volume should be sufficient to thoroughly wet soil media without overflowing or leaching through the bottom of container.				
Soil Media Drench Volume for flats, trays, benches, or beds: Apply sufficient amount of drench solution, as provided above, to adequately wet soil media but not leaching out of bottom.				
			Chemigation: Ebb and Flood Application⁶	
			Container Size (inches)	Fl oz (ml) product per 1,000 containers {ai/container}
			4	1.9 (55 ml) {0.011}
			5	2.9 (85.3 ml) {0.017}
			6	3.8 (111 ml) {0.022}
			7	4.7 (138 ml) {0.028}

HGW86 GH&N Insect Control (100-1543)

			8	5.6 (166 ml) {0.033}
			For larger containers, apply 3.8 fl oz of HGW86 GH&N Insect Control per 1,000 gal of soil media	
			Chemigation: Other⁷	
			Injection ratio	Fl oz product (ml) per gal of injector tank water
			1 to 100	12 (355 ml)

¹For crops grown outdoors, do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per crop per year.

²For crops grown indoors, do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per crop.

³Non-bearing fruit and nut trees are those trees that will not bear fruit or nuts for one year after application.

⁴Vegetable transplants include: fruiting vegetables, leafy vegetables, and tuberous and corm vegetables.

⁵Apply product in sufficient volume of water to wet the potting medium, without the loss of liquid from bottom of container. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to avoid loss of active ingredient from the bottom of the container.

⁶Bring a minimum of 10 containers up to a field capacity, let soil media dry, then bring containers back to field capacity. Multiply the amount of water needed to bring back soil media in container to field capacity by the number of pots to be treated. Add this volume of water to the minimum amount of water needed to flood the area to be treated.

⁷A 1:100 injection ratio (1 part injector tank solution:100 parts irrigation water) is recommended. Irrigation system should be calibrated to deliver 3–4 fl oz of dilute solution per gallon of soil media.

TABLE 4. SPECIFIC USE INSTRUCTIONS FOR SYSTEMIC SOIL TREATMENTS WITH HGW86 GH&N INSECT CONTROL TO IN-GROUND GROWN PLANTS IN AND AROUND GREENHOUSES, NURSERIES, INTERIOR PLANTSCAPES, LATH AND SHADEHOUSES.

PLANTS	PESTS	DOSAGE* (per foot of height or per inch of trunk diameter at breast height {DBH}).	REMARKS
Trees, including non-bearing fruit and nut trees** Shrubs Evergreens	Aphids (such as spirea aphids), lace bugs, and soft scales (such as Magnolia scale)	0.125 fl oz	<p>Soil Drench: Mix required dose in water and uniformly apply to soil around base of the plant. Refer to Tables 5 and 6 for proper calibration and mixing. Pull back mulch before drenching. Keep soil moist for 7 days after application.</p> <p>Soil Injection: Mix required dose in water and inject into soil around the base of the plant. Refer to Tables 5 and 6 for proper calibration and mixing.</p>
Foliage Plants Ground Covers		0.25 fl oz	
Vines (non-bearing) Interior Plantscape Plants	Adelgids (such as hemlock woolly adelgid), borers (such as beetle and caterpillar larvae), leaf-feeding caterpillars (such as redbud leaf-folders and gypsy moths), leaf-feeding beetles (such as elm flea weevils and Japanese beetle adults), leafminers (such as birch leafminers and boxwood leafminers), plant bugs (such as honeylocust plant bugs), psyllids (such as boxwood psyllid) and white-flies	0.25 fl oz	

*Do not apply more than 32 fluid ounces (equivalent to 0.4 lb of active ingredient) of product per acre per year.

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

TABLE 5: ORNAMENTAL SOIL TREATMENT APPLICATION CALIBRATION CHART

Volume per Site*	Flow Rate (Gallons per minute)					
	0.5 gal	0.75 gal	1 gal	1.5 gal	2 gal	3 gal
1 pint	15.0 sec	10.0 sec	7.5 sec	5.0 sec	3.75 sec	2.5 sec.
1 quart	30.0 sec	20.0 sec	15.0 sec	10.0 sec	7.5 sec	5.0 sec
2 quarts	1.0 min	40.0 sec	30.0 sec	20.0 sec	15.0 sec	10.0 sec
1 gallon	2.0 min	1 min 20 sec	1.0 min	40.0 sec	30.0 sec	20.0 sec

*Site = Soil injection site—the selected volume is applied per inch of tree DBH or foot of shrub

TABLE 6: ORNAMENTAL SOIL TREATMENT APPLICATION MIXING CHART

Volume per Site*	Application Rate Per Inch or Foot	Product per 100 gal	Product per 50 gal	Product per 25 gal	Product per 10 gal	Product per 1 gal
1 pint	0.125 fl oz	100 fl oz	50 fl oz	25 fl oz	10 fl oz	1 fl oz
	0.25 fl oz	200 fl oz	100 fl oz	50 fl oz	20 fl oz	2 fl oz
1 quart	0.125 fl oz	50 fl oz	25 fl oz	12.5 fl oz	5 fl oz	0.5 fl oz
	0.25 fl oz	100 fl oz	50 fl oz	25 fl oz	10 fl oz	1 fl oz
2 quarts	0.125 fl oz	25 fl oz	12.5 fl oz	6.25 fl oz	2.5 fl oz	0.25 fl oz
	0.25 fl oz	50 fl oz	25 fl oz	12.5 fl oz	5 fl oz	0.5 fl oz
1 gallon	0.125 fl oz	12.5 fl oz	6.25 fl oz	3.125 fl oz	1.25 fl oz	0.125 fl oz
	0.25 fl oz	25 fl oz	12.5 fl oz	6.25 fl oz	2.5 fl oz	0.25 fl.oz

*Site = Soil injection site—the selected volume is applied per inch of tree DBH or foot of shrub

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

[Nonrefillable rigid plastic and metal containers 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 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 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.

[For all refillable containers] 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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