

100-1276

11/26/2007

1/30



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

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Mr. Timothy E. Wilson  
Regulatory Product Manager, Fungicide/Insecticides  
Syngenta Crop Protection, Inc.  
PO Box 18300  
Greensboro, NC 27419-8300

November 26, 2007

Dear Mr. Wilson:

Subject: Endigo ZC Insecticide  
EPA Registration No. 100-1276  
Application for Label Amendment: Update Directions for Use to Add Tuberous and  
Corm Subgroup 1C  
Submission Date: November 6, 2007

The Agency has reviewed your submission for adding tuberous and corm Subgroup 1C to the label. The label amendment request referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. Please submit one copy of your final printed labeling before you release the product for shipment. A stamped copy is enclosed for your records.

If you have any questions regarding this letter, please contact Amer Al-Mudallal at (703) 605-0566.

Sincerely,

A handwritten signature in black ink, appearing to read "Venus Eagle", with a long horizontal line extending to the right.

Venus Eagle  
Product Manager 01  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

**RESTRICTED USE PESTICIDE**  
**DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS**

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS, OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**Endigo ZC**

Insecticide

Group	3	Insecticide
Group	4A	Insecticide

For use on cotton, pecans, and tuberous and corm vegetables.

Active Ingredient:	
Lambda-cyhalothrin <sup>1,2</sup> .....	9.48%
Thiamethoxam <sup>3</sup> .....	12.60%
Other Ingredients:	77.92%
Total:	100.00%

Endigo ZC contains 1.18 pounds thiamethoxam and 0.88 pounds lambda-cyhalothrin per gallon.

<sup>1</sup>Synthetic pyrethroid

<sup>2</sup>CAS No. 91465-08-6

<sup>3</sup>CAS No. 153719-23-4

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING / AVISO**

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.)

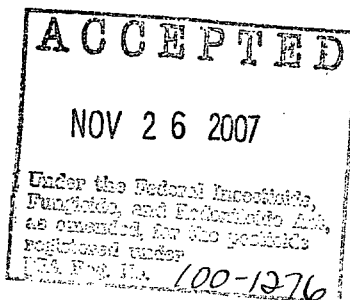
See additional precautionary statements and directions for use in booklet.

EPA Reg. No. 100-1276

EPA Est. XXXX

SCP 1276A-M(draft tuberous and corm)

Net Contents



<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

---

**PRECAUTIONARY STATEMENTS**


---

**Hazards to Humans and Domestic Animals**
**WARNING/AVISO**

May be fatal if swallowed. Causes skin irritation and moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

## Personal Protective Equipment (PPE)

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

### Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves, Category G, such as barrier laminate or viton  $\geq$  14 mils
- Chemical resistant footwear plus socks
- Chemical resistant apron when cleaning equipment, mixing, or loading
- For overhead exposure wear chemical resistant headgear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. DO NOT reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

### User Safety Recommendations

Users should:

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

### Environmental Hazards

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife. For terrestrial uses: do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater.

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

- **Surface Water Advisory**

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff (see manual at the following Internet address: <http://www.wcc.nrcs.usda.gov/pestmgt/core4.html>).

Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours.

- **Ground Water Advisory**

Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

- **Spray Drift Advisory**

Do not allow this product to drift.

### **Physical and Chemical Hazards**

Do not use, pour, spill, or store near heat or open flame.

---

**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. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. 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, 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 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**  
**RESTRICTED USE PESTICIDE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**SHAKE WELL BEFORE USING.**

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

This labeling must be in the possession of the user at the time of application.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.**

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves, Category G, such as barrier laminate or viton  $\geq$  14 mils
- Chemical resistant footwear plus socks
- Chemical resistant headgear for overhead exposure

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR INSECT CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.**

---

## GENERAL INFORMATION

---

### RESISTANCE MANAGEMENT

Some insect pests are known to develop resistance to products after repeated use. Because resistance development cannot be predicted, the use of this product should conform to sound resistance management strategies established for the crop and use area. Syngenta encourages responsible product stewardship to ensure effective long-term control of the insects on this label.

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

Endigo ZC contains a Group 3 Insecticide (Lambda-cyhalothrin, belonging to the pyrethroid class of chemistry) and Group 4A insecticide (thiamethoxam, belonging to the neonicotinoid class of chemistry). Insect biotypes with acquired or inherent resistance to Group 3 or Group 4A insecticides may eventually dominate the insect population if Group 3 or Group 4A insecticides are used repeatedly as the predominant method of control for targeted species. This may result in partial or total loss of control of those species by Endigo ZC or other Group 3 or Group 4A insecticides.

**In order to maintain susceptibility to this class of chemistry in insect species with high resistance development potential:**

- Avoid using a block of more than three consecutive applications of Endigo ZC and/or other Group 4A insecticides. (Do not exceed the allowable amount of Endigo ZC per acre per growing season.)
- Following a block of Group 4A insecticides, rotate to a block of applications of effective products with a different mode of action before using additional applications of Group 4A insecticides.
- Using a block rotation, along with other IPM practices, is considered an effective use strategy for preventing or delaying an insect's pest's ability to develop resistance to this class of chemistry.

**Other Insect Resistance Management (IRM) practices include:**

- Incorporating IPM techniques into your insect control program.
- Monitoring treated insect populations for loss of field efficacy.
- Using tank-mixtures or premixes with insecticides from a different target site of action Group as long as the involved products are all registered for the same crop outlet and effective rates are applied.



**For additional information on Insect Resistance Management:**

- Contact your local extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management recommendations.
- Visit the Insecticide Resistance Action Committee (IRAC) on the web at: <http://www.irc-online.org/>.

**SPRAY DRIFT PRECAUTIONS****Observe the Following Precautions When Spraying in the Vicinity of Aquatic Areas Such as Lakes; Reservoirs; Rivers; Permanent Streams, Marshes or Natural Ponds; Estuaries and Commercial Fish Farm Ponds.**

As with all crop protection products, it is important to avoid off-target movement. Do not allow spray to drift onto adjacent land, crops or aquatic areas. Follow these recommendations to avoid spray drift:

- Do not apply by ground within 25 ft., or by air within 150 ft. of lakes, reservoirs, rivers, permanent streams, marshes, pot holes, or natural ponds, estuaries, and commercial fish farm ponds.
- All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
- Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift, and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.
- For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used and must not exceed 75% of wing span or rotor diameter.
- Do not make aerial applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with increased height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
- Make applications when wind velocity favors on-target product deposition (Approximately 3 - 10 mph). Do not apply when wind velocity exceeds 10 mph. Avoid applications when wind gusts approach 10 mph.
- Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
- Do not cultivate within 10 ft. of the aquatic area so as to allow growth of a vegetative filter strip.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic areas. Avoid spraying during conditions of low humidity and/or high temperature.
- Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage. Applications more than 10 ft. above the crop canopy should be avoided.

---

## APPLICATION PROCEDURES

---

Spray nozzles should be selected which will provide accurate and uniform spray deposition. Use spray nozzles that provide medium-sized droplets and reduce drift. To help insure accuracy, calibrate sprayer before each use. For information on spray equipment and calibration, consult nozzle manufacturers and / or State Extension Service specialists.

Apply Endigo ZC using sufficient water volume to provide thorough and uniform coverage. In situations where a dense canopy exists and/or pest pressure is high, use greater water volumes. The use of a spray adjuvant may increase spray coverage but is not required. Avoid making applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

---

## MIXING PROCEDURES

---

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Maintain agitation throughout the spraying operation. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area. Keep product container tightly closed when not in use.

### Endigo ZC Alone

Add 1/2 of the required amount of water to the mix tank. With the agitator running, add the desired amount of Endigo ZC to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after Endigo ZC has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

### Endigo ZC + Tank Mixtures

**When tank mixing with any other agricultural products, always add Endigo ZC last.** Fill the tank with one half to two thirds volume of the mixing diluent. Start the agitator running before adding any tank mix partners. Make sure all other products are fully dispersed in the mixing diluent before adding the recommended rate of Endigo ZC to the tank. Add the remainder of the mixing diluent volume. It is recommended that mixing and spray equipment have continuous agitation for best results. Follow the precautions and limitations of the most restricted product in the tank mixture.

In general, tank mix partners should be added in this order: products packaged in water-soluble packaging, wettable powders, wettable granules, dry flowables, liquid flowables, liquids, emulsifiable concentrates and surfactants / adjuvants. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all the mixture

has been applied.

If using Endigo ZC in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations that appear on the tank mix product label. No label dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed. Endigo ZC should not be mixed with any product that prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are labeled.

### **Adjuvants**

Endigo ZC is an aqueous based formulation. It is recommended that no type of non-emulsifiable oils be used in combination with Endigo ZC. If adjuvants are used, use the following types:

- Nonionic Surfactant (NIS) containing at least 75% surface agent
- Non-phytotoxic Crop Oil Concentrate (COC), including once refined Vegetable Oil Concentrate (VOC)
- Methylated Sunflower Oils (MSO) containing a minimum of 17% emulsifier.

Adjuvants other than NIS or COC may be used providing the product meets all of the following criteria:

- Contains only EPA exempt ingredients.
- Is non-phytotoxic to the target crop.
- Is compatible in mixture. (May be established through a jar test.)
- Is supported locally for use with Endigo ZC on the target crop through proven field trials and through university and extension recommendations.

### **Diluents**

In addition, the following may be used as diluents:

- Crop Oil Concentrate
- Methylated Sunflower Oils
- Urea-Ammonium Nitrate

It is recommended that the following **not** be used in combination with Endigo ZC as diluents or adjuvants:

- Non-emulsifiable oils
- Diesel Fuel
- Straight Mineral Oil

### **Compatibility (Jar Test)**

Endigo ZC is compatible with most commonly used pesticides, crop oils, adjuvants, and nutritional sprays. However, since it is not possible to test all possible mixtures, the user should pre-test to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with Endigo ZC. To determine the physical compatibility of Endigo ZC with other products, use a jar test, as described below.

Using a quart jar, add the proportionate amounts of the products to 1 qt. of water. Add wettable powders and water-dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

The crop safety of all potential tank mixes on all crops has not been tested. Before applying any tank mixture not specifically recommended on this label, the safety to the target crop should be confirmed.

## **CHEMIGATION**

### **Sprinkler Irrigation Application**

Apply Endigo ZC at rates and timing described elsewhere in this label. As local recommendations differ, consult your local State Extension Service or other local experts for recommendations on adjuvant or diluent types, (see MIXING PROCEDURES) rates and mixing instructions. These recommendations should be proven, through university and extension field trials, to be effective with Endigo ZC applied by chemigation.

Check the irrigation system to insure uniform application of water to all areas. Thorough coverage of foliage is required for good control. Good agitation in the pesticide supply tank should be maintained prior to and during the entire application period.

Apply by injecting the recommended rate of Endigo ZC into the irrigation system using a metering device that will introduce a constant flow and by distributing the product to the target area in 0.1–0.2 acre-inch of water. In general, use the least amount of water required for proper distribution and coverage. It is recommended that the product be injected into the main irrigation line ahead of a right angle turn in the line to insure adequate dispersion or mixing in the irrigation water. Once the application is completed, flush the entire irrigation and injection system with clean water before stopping the system.

In addition to the above recommendations, if application is being made during a normal irrigation set of a stationary sprinkler, the recommended rate of Endigo ZC for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide adequate coverage and product distribution.

Do not apply Endigo ZC through an irrigation system 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 out of the year.

**Use Precautions: Sprinkler Irrigation Application**

- Apply this product only through (sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move) irrigation system(s). Do not apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop 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.
- 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 back-flow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.

---

**CROP USE DIRECTIONS**


---

**Recommended Applications**

Crop	Pest	Rate Per Acre Per Application
Cotton	Aphids Boll Weevil Cabbage Looper Clouded Plant Bug Cotton Bollworm Cotton Fleahopper Cotton Leafperforator Cotton Leafworm European Corn Borer Fall Armyworm Green Stink Bug Pink Bollworm Red Banded Stink Bug Red Shouldered Stink Bug Saltmarsh Caterpillar Southern Green Stink Bug Tarnished Plant Bug ( <i>Lygus lineolaris</i> )	3.5 – 5.5 fl. oz./A
	Brown Stink Bug Whiteflies	5.5 fl. oz./A

**Remarks:**

- **Application Timing:** Apply before pests reach damaging levels. Apply as required by scouting, usually at intervals of 5-10 days. Scout fields and treat again if populations rebuild to potentially damaging levels. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Apply higher rates for heavy infestations.
- **Aphids:** For best results, the low rate should not be used after first bloom or on rapidly increasing populations.
- **Bollworm:** Under light infestation levels, 3.5 fl. oz./A may be applied in conjunction with intense field monitoring. When applied according to label, Endigo ZC also provides ovicidal control of unhatched *Heliothine* species eggs.
- **Adjuvant:** Insect control can be improved with the use of a non-ionic surfactant or COC. Do not use binder or sticker type surfactants.
- **Pre-Harvest Interval (PHI):** 21 Days
- **Maximum Endigo ZC Allowed per Growing Season:** Do not exceed a total of 13.5 fl. oz. of Endigo ZC or 0.2 lb. a.i. of lambda-cyhalothrin containing products or 0.125 lb. a.i. of thiamethoxam containing products per acre per growing season.

- **Minimum Interval between Applications:** Allow at least 5 days between applications.
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 3 GPA for aerial applications.
- **Livestock Grazing:** Do not graze livestock in treated areas.
- **Neonicotinoids:** Do not apply this product within 45 days of planting if cotton seeds were treated with a neonicotinoid product.
- **Synthetic Pyrethroids:** Do not make more than a total of 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season.

**Recommended Applications**

Crop	Pest	Rate Per Acre Per Application
<b>Tuberous and Corm Vegetables</b> Arracacha Arrowroot Canna Cassava, Bitter and Sweet Chayote (root) Chinese artichoke	Colorado Potato Beetle <sup>1</sup> Cutworm species Flea Beetles Leafhopper species Saltmarsh Caterpillar Sweet Potato Hornworm Woollybear Caterpillar species	2.5 – 4.5 fl. oz./A
Chufa Dasheen Ginger Jerusalem artichoke Leren Potato Sweet potato Tanier Turmeric Yam bean Yams	Armyworm species <sup>1</sup> Blister Beetle species Colorado Potato Beetle Corn Earworm Cricket species Cucumber Beetle species (adults) European Corn Borer Flea Beetle species (adults) Grasshopper species Looper species <sup>1</sup> Lygus Bug species <sup>1</sup> Plant Bug species Potato Psyllid Potato Tuberworm Stink Bug species Sweet Potato Leaf Beetle (adults) Sweet Potato Vine Borer Thrips species <sup>1,2</sup> Tortoise Beetle species Webworm species Weevil species (adults)	3.0 – 4.0 fl. oz./A
	Aphid species Leafminer species <sup>1,3</sup> Spider Mite species <sup>3</sup> Whitefly species	4.0 - 4.5 fl. oz./A

**Remarks:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Timing and frequency of



applications should be based upon insect populations reaching locally determined economic thresholds. Apply higher rates for heavy infestations.

- Insects that bore or tunnel into leaves, vines, stems, tubers or corms must be controlled before penetration. Only exposed insects (larvae and/or adults) can be controlled with foliar applications of Endigo ZC.
- **Pre-Harvest Interval (PHI):** 14 Days
- **Maximum Endigo ZC Allowed per Growing Season:** Do not exceed a total of 10.0 fl. oz. of Endigo ZC or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.094 lb. a.i. of thiamethoxam containing products per acre per growing season.
- Do not use a foliar application of thiamethoxam (Actara® or Endigo ZC) following an in-furrow or soil application of thiamethoxam (Platinum® or Cruiser® seed treatment).
- **Minimum Interval between Applications:** 7 days.
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 10 GPA for ground applications or 5 GPA for aerial applications. Use higher application volumes and/or rates when foliage is dense, pest populations are high, larvae are large, weather conditions are adverse and/or as plant size increases. Use higher rates for longer residual.

<sup>1</sup> See **Resistance** statement under **General Directions for Use**

<sup>2</sup> Does not include Western Flower Thrips.

<sup>3</sup> Suppression only.

**Recommended Applications**

Crop	Pest	Rate Per Acre Per Application
Pecan	Black Pecan Aphid Blackmargined Aphid Hickory Shuckworm Pecan Casebearer species Pecan Phylloxera Pecan Spittlebug Pecan Weevil Stink Bug species Yellow Pecan Aphid	3.0 - 5.5 fl. oz./A

**Remarks:**

- **Application Timing:** Apply before pests reach damaging levels. Scout fields and treat again if populations rebuild to potentially damaging levels. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Apply higher rates for heavy infestations
- **Pre-Harvest Interval (PHI):** 14 Days
- **Maximum Endigo ZC Allowed per Growing Season:** Do not exceed a total of 13.5 fl. oz. of Endigo ZC or 0.16 lb. a.i. of lambda-cyhalothrin containing products or 0.125 lb. a.i. of thiamethoxam containing products per acre per growing season.
- **Minimum Interval between Applications:** 7 days.
- **Water Volume:** Use sufficient water volume to ensure thorough coverage of foliage. Do not use less than 50 GPA for ground applications or 20 GPA for aerial applications. Use higher application volumes and/or rates when foliage is dense, pest populations are high, larvae are large, weather conditions are adverse and/or as plant size increases. Use higher rates for longer residual.

---

**ROTATIONAL RESTRICTIONS**

---

Treated areas may be replanted immediately following harvest, or as soon as practical following the last application with: canola, cotton, corn, legume vegetables (including soybean), sorghum, sunflower and wheat. Any cover crop planted for erosion control or soil improvement may be planted as soon as practical following the last application. However, the cover crop may not be grazed or harvested for food or feed. For all other crops, a 120-day plant-back interval must be observed.

---

**STORAGE AND DISPOSAL**

---

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

**Storage**

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste area. **DO NOT ALLOW PRODUCT TO FREEZE.**

**Pesticide Disposal**

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**Container Disposal**

Triple rinse (or equivalent); then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures allowed by State and local authorities.

**Bulk/Mini-Bulk Container Disposal**

Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

**Container Precautions**

Before refilling, RETURNABLE CONTAINER, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

**REFILL ONLY WITH ENDIGO ZC.** The contents of RETURNABLE CONTAINERS cannot be completely removed by cleaning. Refilling with materials other than Endigo ZC will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

---

Endigo ZC, the Syngenta logo and the CP FRAME  are trademarks of a Syngenta Group Company

©2007 Syngenta

For non-emergency (e.g. current product information) call  
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP 1276A-M (draft tuberous and corm)

Endigo ZC 1276A-M(draft tuberous and corm)-lg-11-6-07 000100-01276.20071106.tubers&corm.pdf

(non-detachable container label – 1 gal.)

**RESTRICTED USE PESTICIDE**  
**DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS**

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS, OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

**Endigo ZC**

Insecticide

Group	3	Insecticide
Group	4A	Insecticide

For use on cotton, pecans, and tuberous and corm vegetables.

Active Ingredient:	
Lambda-cyhalothrin <sup>1,2</sup> .....	9.48%
Thiamethoxam <sup>3</sup> .....	12.60%
<hr/>	
Other Ingredients:	77.92%
Total:	100.00%

Endigo ZC contains 1.18 pounds thiamethoxam and 0.88 pounds lambda-cyhalothrin per gallon.

<sup>1</sup>Synthetic pyrethroid

<sup>2</sup>CAS No. 91465-08-6

<sup>3</sup>CAS No. 153719-23-4

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING / AVISO**

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 in booklet.

EPA Reg. No. 100-1276

EPA Est. No. XXXX

SCP 1276A-M(draft tuberous and corm)

1 gallon

Net Contents

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans and Domestic Animals

#### WARNING/AVISO

May be fatal if swallowed. Causes skin irritation and moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	

**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**

**Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife. For terrestrial uses: do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater.

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

**Refer to Surface Water Advisory, Ground Water Advisory, Spray Drift Advisory, Physical and Chemical Hazards sections in the attached booklet.**

**STORAGE AND DISPOSAL**

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

**Storage**

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste area. **DO NOT ALLOW PRODUCT TO FREEZE.**

**Pesticide Disposal**

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions; contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**Container Disposal**

Triple rinse (or equivalent); then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures allowed by State and local authorities.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

**Refer to Chemigation directions in booklet.**

---

Endigo ZC and the Syngenta logo are trademarks of a Syngenta Group Company

Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

©2007 Syngenta

SCP 1276A-M (draft tuberous and corm) (1 gal)

Endigo ZC 1276A-M(draft tuberous and corm)- lg -11-6-07 000100-01276.20071106.tubers&corm.pdf



(non-detachable container label – mini-bulk, bulk)

**RESTRICTED USE PESTICIDE  
DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS**

**FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS, OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.**

**Endigo ZC**

Insecticide

Group	<b>3</b>	Insecticide
Group	<b>4A</b>	Insecticide

For use on cotton, pecans, and tuberous and corm vegetables.

Active Ingredient:	
Lambda-cyhalothrin <sup>1,2</sup> .....	9.48%
Thiamethoxam <sup>3</sup> .....	12.60%
<hr/>	
Other Ingredients:	77.92%
<hr/>	
Total:	100.00%

Endigo ZC contains 1.18 pounds thiamethoxam and 0.88 pounds lambda-cyhalothrin per gallon.

<sup>1</sup>Synthetic pyrethroid

<sup>2</sup>CAS No. 91465-08-6

<sup>3</sup>CAS No. 153719-23-4

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING / AVISO**

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 in booklet.

EPA Reg. No. 100-1276

EPA Est. No. XXXX

SCP 1276A-M(draft tuberous and corm)

---

Net Contents

**PRECAUTIONARY STATEMENTS****Hazards to Humans and Domestic Animals****WARNING/AVISO**

May be fatal if swallowed. Causes skin irritation and moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

## Environmental Hazards

This pesticide is extremely toxic to fish and aquatic organisms and toxic to wildlife. For terrestrial uses: do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

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

- **Surface Water Advisory**

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff (see manual at the following Internet address: <http://www.wcc.nrcs.usda.gov/pestmgt/core4.html>).

Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours.

- **Ground Water Advisory**

Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

- **Spray Drift Advisory**

Do not allow this product to drift.

## Physical and Chemical Hazards

Do not use, pour, spill, or store near heat or open flame.

---

**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. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. 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, 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 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**  
**RESTRICTED USE PESTICIDE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

**STORAGE AND DISPOSAL**

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

**Storage**

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste area. **DO NOT ALLOW PRODUCT TO FREEZE.**

**Pesticide Disposal**

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

**Bulk/Mini-Bulk Disposal**

Reseal container and offer for reconditioning, or triple rinse (or equivalent) and offer for recycling or reconditioning, or clean in accordance with manufacturer's instructions.

**Container Precautions**

Before refilling, RETURNABLE CONTAINER, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices.

**REFILL ONLY WITH ENDIGO ZC.** The contents of RETURNABLE CONTAINERS cannot be completely removed by cleaning. Refilling with materials other than Endigo ZC will result in contamination and may weaken container.

After filling and before transporting, check for leaks.

Do not refill or transport damaged or leaking container.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!**

**Refer to Chemigation directions in booklet.**

---

Endigo ZC, the Syngenta logo and the CP FRAME  are trademarks of a Syngenta Group Company

Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O.Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

©2007 Syngenta

SCP 1276A-M (draft tuberous and corm)

Endigo ZC 1276A-M(draft tuberous and corm) – lg –11-6-07 000100-01276.20071106.tubers&corm.pdf