

71711-21

12/7/2012

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

CHEMICAL SAFETY  
AND POLLUTION PREVENTION

OFFICE OF

December 07, 2012

Marie Maks  
Nichino America, Inc.  
4550 New Linden Hill Road, Suite 501  
Wilmington, DE 19808

Subject: Application for Pesticide Amendment  
Applaud® 70DF Insect Growth Regulator  
EPA Reg. No. 71711-21  
Your Submission Dated July 18, 2011  
Decision No: 452144 and 453806

Dear Ms. Maks:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. Two (2) copies of the finished labeling must be submitted prior to releasing the product for shipment. A stamped copy of the label is enclosed for your records.

If you have any questions contact Driss Benmhend at 703-308-9525 or by e-mail at: [Benmhend.driss@epa.gov](mailto:Benmhend.driss@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Suarez", written over a circular stamp.

Mark Suarez  
Product Manager 13, Insecticide Branch  
Registration Division (7504P)

Enclosure: *Label stamped "Accepted"*

# NICHINO AMERICA

## APPLAUD® 70DF Insect Growth Regulator

**ACTIVE INGREDIENT:**

Buprofezin: 2-tert-butylimino-3-isopropyl-5-phenyl-1,3,5-thiadiazinan-4-one.....70.00%

**OTHER INGREDIENTS:**.....30.00%

**TOTAL** 100.00%

Contains 0.70 lbs. buprofezin per pound of product

EPA Reg. No. 71711-21

EPA Est. No. 67545-AZ-1

**Marketing Brands:** Applaud® Insect Growth Regulator, Centaur® WDG Insect Growth Regulator, and Talus® 70DF Insect Growth Regulator

### KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
<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>
<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 swallowed</b>	<ul style="list-style-type: none"> <li>• Call poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</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>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-348-5832 for emergency medical treatment information. In case of fire or spills, information may be obtained by calling 1-800-424-9300.	
<b>NOTE TO PHYSICIAN:</b> There is no specific antidote. All treatment should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.	

Net Contents: \_\_\_\_\_

Formulated and Packaged in USA

**ACCEPTED  
DEC 07 2012**  
Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for the  
pesticide registered under:

**Nichino America, Inc.**  
4550 New Linden Hill Road, Suite 501  
Wilmington, DE 19808  
888-740-7700

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EPA. Reg. No: 71711-21

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Harmful if swallowed. Wash thoroughly with soap and water after handling. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Harmful if inhaled. Avoid breathing spray mist. Remove contaminated clothing and wash before reuse.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Applicators and other handlers must wear:**

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

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.

**User Safety Recommendations**  
Users should: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

**ENGINEERING CONTROLS STATEMENT**

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.

**ENVIRONMENTAL HAZARDS**

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 contaminate water by cleaning of equipment or disposal of equipment washwaters.

**DIRECTIONS FOR USE**

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**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 restricted entry interval (REI) of 12 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 long-sleeved shirt and long pants
- Waterproof gloves
- Socks and chemical-resistant footwear

### NONAGRICULTURAL 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, or greenhouses. For other uses, including golf courses and other nonagricultural uses, do not enter treated areas without protective clothing until sprays have dried.

### GENERAL INFORMATION

APPLAUD® 70DF insect growth regulator is effective against the nymphal stages of whitefly, scales, psylla, mealybugs, planthoppers, and leafhoppers by inhibiting chitin biosynthesis, suppressing oviposition of adults, and reducing viability of eggs. APPLAUD 70DF insect growth regulator is not an adulticide. Evidence of activity may be slower than typical contact insecticides as treated susceptible pests may remain alive on the plant for 3-7 days; however pests have stopped feeding and any feeding damage during this time is typically very low.

APPLAUD 70DF insect growth regulator is not disruptive to beneficial insects and mites.

APPLAUD 70DF insect growth regulator is a contact insecticide, so good spray coverage is necessary. Apply by ground or air in sufficient water volume. Orient nozzles to assure good coverage. Use of higher volume of water will assure better coverage, especially under adverse conditions such as hot, dry weather, and/or a dense canopy. The entire field should be treated. Apply when economic infestations occur based on local information.

APPLAUD 70DF insect growth regulator is not for sale, sale into, distribution, and or use in Nassau and Suffolk counties of New York state.

### INSECTS CONTROLLED

**Whiteflies:** Ash whitefly, Bandedwinged whitefly, Greenhouse whitefly, Silverleaf whitefly, Sweetpotato whitefly

**Mealybugs:** Citrus mealybug, Comstock mealybug, Gill's mealybug, Grape mealybug, Longtailed mealybug, Mexican mealybug, Obscure mealybug, Striped mealybug, Vine mealybug

**Leafhoppers and Planthoppers:** Brown planthopper, Cherry leafhopper, Eastern grape leafhopper, Glassy-winged sharpshooter, Potato leafhopper, Variegated leafhopper, Western grape leafhopper, White apple leafhopper

### **Pear Psylla**

#### **Scales:**

**Soft Scales:** Barnacle scale, Black scale, Brown soft scale, Citricola scale, European fruit lecanium scale, False oleander scale, Frosted scale, Hemispherical scale, Indian wax scale and other wax scales, Tessellated scale, White peach scale

**Armored Scales:** Boisduval scale, Cactus scale, California red scale, Coconut scale, Fern scale, Florida red scale, Oystershell scale, San Jose scale

**Margarodid Scale:** Cottony cushion scale

## USE RESTRICTIONS

- Do not apply this product through any type of irrigation system.
- Crop Rotational Restrictions:

CROP	PLANTBACK TIMING
All crops registered for use with buprofezin	0 days following application
Cereal grains	30 days following application
All other crops	60 days following application

## USE PRECAUTIONS

- Apply in a minimum finished spray volume of 5 gallons per acre by air. For gallonage per acre by ground, refer to Application Rate Chart.
- Phytotoxicity may occur in Asian Pear varieties, normally limited to applications made prior to petal fall.

## RESISTANCE MANAGEMENT

APPLAUD 70DF insect growth regulator is classified by IRAC in Group 16 – chitin biosynthesis inhibitors and is not known to be cross-resistant to other classes of insecticides. However, insect pests are known to develop resistance to products used repeatedly. Because resistance development cannot be predicted, the use of this product should conform to resistance management strategies established for the crop and use area. Such strategies may include rotating with insecticides with different modes of action. Consult your local pest control advisor or extension office for details. If resistance to this product develops in your area, it may not provide adequate control. If you experience difficulty with control, and resistance is a likely cause, consult your local state university horticultural specialist or local agricultural authorities for the best alternative method of control. To preserve the usefulness of APPLAUD 70DF insect growth regulator, do not make more than two consecutive applications. Prior to subsequent applications, use an alternative chemistry with a different mode of action. Always consult your local crop advisor for the most appropriate control decision for your area. Resistance management strategies advise against applying rates lower than those recommended on the label.

**For greenhouses:** If another insect growth regulator with the same mode of action as a chitin biosynthesis inhibitor (i.e. cyromazine, diflubenzuron, and novaluron) has been used in the greenhouse within 28 days, do not apply TALUS 70DF insect growth regulator as the first whitefly application.

## APPLICATION DIRECTIONS

Applications should be made immediately after the spray solution is prepared. Thorough spray coverage is essential for effective control. Applications may be made with high or low volume spray equipment that provides thorough coverage of the plant. Apply with properly calibrated spray equipment. For best results, apply when pest populations are beginning to build, before reaching economic thresholds. Consult your local agricultural advisor, or state cooperative extension service for recommendations.

## MIXING DIRECTIONS

**APPLAUD 70DF INSECT GROWTH REGULATOR ALONE:** Fill spray tank with  $\frac{3}{4}$  of the amount of water needed for the intended application and then turn on agitation. Pour recommended amount of product on the surface of water in the spray tank. Add the balance of the water to the spray tank with agitation running. Keep agitation running during filling and spraying operations. If spraying must be stopped before emptying the sprayer, resume agitation before spraying the remainder of the load.

**APPLAUD 70DF INSECT GROWTH REGULATOR TANK MIXTURES:** Follow all use directions as listed above under **APPLAUD 70DF INSECT GROWTH REGULATOR ALONE** with the following

exception: after the APPLAUD 70DF insect growth regulator is thoroughly mixed and the tank is  $\frac{3}{4}$  full, add the recommended amount of wettable powder, soluble powder, flowable, emulsifiable concentrate, or soluble liquid product, **while maintaining agitation**. If a spray additive is needed, add a liquid fertilizer, surfactant, or crop oil concentrate to the spray tank at this time. Then continue adding water to the tank to achieve the desired level, while maintaining agitation.

**APPLAUD 70DF INSECT GROWTH REGULATOR TANK MIXTURES WITH PRODUCTS IN WATER-SOLUBLE PACKAGING:** Follow all use directions as listed above under **APPLAUD 70DF INSECT GROWTH REGULATOR ALONE** with the following exception: add the desired number of water-soluble bags to the tank (if allowed by their label instructions) at the same time the APPLAUD 70DF insect growth regulator is added. **Note:** If using products in water soluble packaging, do not tank mix with products that contain boron, chromium, or other micronutrients.

### **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. Small droplets (<150 - 200 microns) drift to a greater extent than large droplets. Within typical equipment specifications, applications should be made to deliver the largest droplet spectrum that provides sufficient control and coverage. Use only Medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

#### **Ground Applications:**

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application. For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy. For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two (2) rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

#### **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 the wing span or 80% rotor diameter. Flight speed and nozzle orientation must be considered in determining droplet size. Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Making applications at the lowest height that is safe reduces the exposure of the droplets to evaporation and wind.

#### **Wind Speed Restrictions:**

Drift potential increases at wind velocities 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. Only apply this product if the wind direction favors on-target deposition. Do not apply when wind velocity exceeds 15 mph and avoid gusty and windless conditions. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.

#### **Restrictions During Temperature Inversions:**

Do not make 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 stable air and increasing temperatures 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 mist or ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source. Smoke that layers and moves laterally near the ground surface in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical mixing.

**APPLICATION RATE CHART FOR  
APPLAUD 70DF INSECT GROWTH REGULATOR**

ACEROLA; ATEMOYA; AVOCADO; BIRIBA; CHERIMOYA; CUSTARD APPLE; FEIJOA; GUAVA; ILAMA; JABOTICABA; PASSION FRUIT; SOURSOP; STARFRUIT; SUGAR APPLE; WAX JAMBU		
Pest	Rate/Acre	Notes and Use Restrictions
Scales	34.5 oz/acre  (2.156 lbs/acre)  (1.5 lbs ai/acre)	<p><b>Limited to Florida, Hawaii, and Puerto Rico</b></p> <ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 20 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 21 days</li> </ul>
Leafhoppers Mealybugs Whiteflies	9.0 to 12.0 oz/acre  (0.56 to 0.75 lbs/acre)  (0.40 to 0.53 lbs ai/acre)	<p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li>• <b>Scales:</b> Apply at early crawler emergence.</li> <li>• Good spray coverage is essential.</li> </ul>

<b>BLACK SAPOTE; CANISTEL; MAMEY SAPOTE; MANGO; PAPAYA; SAPODILLA; STAR APPLE</b>		
<b>Pest</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Leafhoppers Mealybugs Scales Whiteflies	9.0 to 12.0 oz/acre  (0.56 to 0.75 lb/acre)  (0.40 to 0.53 lbs ai/acre)	<p><b>Limited to Florida, Hawaii, and Puerto Rico</b></p> <ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 20 gallons of water per acre.</li> <li>• Do not make more than 5 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 45.0 oz (2.8 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 3 days</li> </ul> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li>• <b>Scales:</b> Apply at early crawler emergence.</li> <li>• Good spray coverage is essential.</li> </ul>

<b>BANANAS</b>		
<b>Pest</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Leafhoppers Mealybugs Scales Whiteflies	7.0 oz/acre  (0.438 lbs/acre)  (0.31 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 15 gallons of water per acre.</li> <li>• Do not make more than 4 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 27.0 oz (1.71 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 1 day</li> </ul> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• Treatment should be applied when population level reaches economic threshold. Consult local or State agricultural authorities for details.</li> <li>• Good spray coverage is essential. Use of a higher volume of water will assure better coverage, especially under adverse conditions, such as hot, dry weather and/or a dense canopy.</li> </ul>



<b>CITRUS FRUITS (CROP GROUP 10)</b>		
Calamondin; Citrus, citron; Citrus hybrids (including chironja, tangelo, tangor); Clementine; Grapefruit; Kumquat; Lemon; Lime; Mandarin; Orange, sour; Orange, sweet; Pummelo; Satsuma mandarin; Tangerine		
<b>Pest</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Black scale	34.5 to 46.0 oz/acre	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 750 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 60 days between applications.</li> <li>• Do not apply more than 92.0 oz (5.75 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 3 days</li> </ul> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• <b>Red scale</b> – Applications should begin at early crawler emergence.</li> <li>• <b>Citricola scale</b> – Applications should be after complete crawler hatch. Spring applications can provide suppression and minimize honeydew accumulation.</li> <li>• <b>Cottony cushion scale</b> – Apply after July 1<sup>st</sup> for consistent control.</li> <li>• <b>All other pests</b> - Application should be made when early crawler emergence occurs.</li> <li>• Good spray coverage is essential.</li> </ul>
California red scale	(2.156 to 2.875 lbs/acre)	
Citricola scale		
Cottony cushion scale	(1.5 to 2.0 lbs ai/acre)	
Glassy-winged sharpshooter		
Mealybugs		

<b>CITRUS FRUITS (CROP GROUP 10) - For Florida and Texas Only</b>		
Calamondin; Citrus, citron; Citrus hybrids (including chironja, tangelo, tangor); Clementine; Grapefruit; Kumquat; Lemon; Lime; Mandarin; Orange, sour; Orange, sweet; Pummelo; Satsuma mandarin; Tangerine		
<b>Pests</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Soft scales Armored scales	34.5 to 46.0 oz/acre  (2.156 to 2.875 lbs/acre)  (1.5 to 2.0 lbs ai/acre)	<p><b>Limited to Florida and Texas Only</b></p> <ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 250 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 60 days between applications.</li> <li>• Do not apply more than 92.0 oz (5.75 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 3 days</li> </ul> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• Thorough coverage is essential for optimum control.</li> <li>• Choice of water volume should be based on tree canopy size and location of the scale insect within the tree canopy.</li> <li>• Applications should be made at the beginning of crawler hatch and emergence.</li> </ul>

COFFEE		
Pests	Rate/Acre	Notes and Use Restrictions
Mealybugs Scales	23.0 oz/acre  (1.43 lbs/acre)  (1.0 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 50 gallons of water per acre.</li> <li>• Do not make more than 4 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 91.0 oz (5.72 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 0 day</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• Treatment should be applied when population level reaches economic threshold.</li> <li>• Good spray coverage is essential.</li> </ul>

GRAPES		
Pests	Rate/Acre	Notes and Use Restrictions
European fruit lecanium scale	12.0 oz/acre  (0.75 lb/acre)  (0.53 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground using a minimum of 50 gallons of water per acre. Water volumes should be adjusted based on the size of the grape canopy. Higher water volumes should be used for dense canopies.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 24.0 oz (1.5 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 7 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Leafhoppers:</b> Apply when majority of the population is at the early nymphal stage.</li> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs. Good spray coverage is essential. Orient nozzles to assure good coverage. Use of a higher volume of water will assure better coverage, especially under adverse conditions, such as hot, dry weather and/or a dense canopy.</li> </ul>
Leafhoppers Mealybugs	9.0 to 12.0 oz/acre  (0.56 to 0.75 lb/acre)  (0.40 to 0.53 lbs ai/acre)	
Mealybugs	24.0 oz/acre  (1.50 lb/acre)  (1.05 lbs ai/acre)	<p><b>THIS APPLICATION RATE ALLOWED IN CALIFORNIA AND ARIZONA ONLY</b></p> <ul style="list-style-type: none"> <li>• Apply by ground using a minimum of 50 gallons of water per acre. Water volumes should be adjusted based on the size of the grape canopy. Higher water volumes should be used for dense canopies.</li> <li>• Do not apply more than 24.0 oz (1.5 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 30 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li>• Good spray coverage is essential. Orient nozzles to assure good coverage. Use of a higher volume of water will assure better coverage, especially under adverse conditions, such as hot, dry weather and/or a dense canopy.</li> </ul>

LONGAN; LYCHEE; PULASAN; RAMBUTAN; SPANISH LIME		
Pests	Rate/Acre	Notes and Use Restrictions
Scales	34.5 oz/acre  (2.156 lbs/acre)  (1.5 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 75 gallons per acre spray volume.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 21 days</li> </ul>

OLIVES		
Pests	Rate/Acre	Notes and Use Restrictions
Scales	34.5 to 46.0 oz/acre  (2.156 to 2.875 lbs/acre)  (1.5 to 2.0 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using 110 to 500 gallons per acre spray volume. Apply in sufficient water volume to provide adequate coverage for tree size. Thorough coverage is critical for adequate control.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 50 days between applications.</li> <li>• Do not apply more than 92.0 oz (5.75 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 21 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Black scale</b> – Applications should be made after complete crawler emergence from the mature female scale has occurred.</li> <li>• <b>All other scales</b> – Apply at early crawler emergence.</li> <li>• Good spray coverage is essential. Orient nozzles to assure good coverage. Use of a higher volume of water will assure better coverage, especially under adverse conditions, such as hot, dry weather and/or a dense canopy.</li> </ul>

PEARS and PEARS, ASIAN		
Pests	Rate/Acre	Notes and Use Restrictions
Mealybugs Pear psylla Scales	34.5 to 46.0 oz/acre  (2.156 to 2.875 lbs/acre)  (1.5 to 2.0 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 80 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 7 days between applications.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Pear Psylla:</b> For best results of controlling 1<sup>st</sup> and 2<sup>nd</sup> instars, apply pre-bloom or at petal fall. In-season, apply early when smaller pear psylla nymphs are present. For best results, tankmix with an adjuvant.</li> <li>• <b>Mealybugs or San Jose scale:</b> Apply pre-bloom or at first crawler emergence.</li> <li>• <b>Other scales:</b> Apply at first crawler emergence.</li> <li>• Good spray coverage is essential.</li> <li>• Phytotoxicity may occur in Asian Pear varieties, normally limited to applications made prior to petal fall.</li> </ul>

PERSIMMONS		
Pest	Rate/Acre	Notes and Use Restrictions
Mealybugs Soft Scales European Fruit Lecanium Scale Frosted Scale	34.5 oz/acre (2.156 lbs/acre) 1.5 lbs ai/acre	<p>USE RESTRICTIONS</p> <ul style="list-style-type: none"> <li>• Apply by ground using a minimum of 100 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season.</li> <li>• Do not apply more than 3.0 lbs active ingredient per acre per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made at the beginning of crawler emergence. APPLAUD is most effective on early developmental stages of mealybugs.</li> <li>• <b>Scales:</b> Application should be made at the beginning of crawler emergence of the scale generation being targeted.</li> </ul>

<b>POME FRUITS (CROP GROUP 11-10) – EXCEPT PEARS and PEARS, ASIAN (see Application Rate Chart for PEARS and PEARS, ASIAN)</b>		
Apple, Azarole, Crabapple, Loquat, Mayhaw, Medlar, Quince, Quince (Chinese), Quince (Japanese), Tejocote, Cultivars, varieties and/or hybrids of these.		
<b>Pests</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Leafhoppers	9.0 to 12.0 oz/acre  (0.56 to 0.75 lb/acre)  (0.40 to 0.53 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 80 gallons of water per acre. For low-volume sprayers, use a minimum of 20 gallons of water per acre.</li> <li>• Do not make more than 1 application per growing season.</li> <li>• Do not apply more than 34.5 oz (2.156 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul>
Mealybugs Scales	34.5 oz/acre  (2.156 lb/acres)  (1.5 lbs ai/acre)	<p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>San Jose scale:</b> Application can be made at dormant, delayed dormant, pre-bloom or in-season at early crawler emergence.</li> <li>• <b>Other scales:</b> Apply at early crawler emergence.</li> <li>• <b>Mealybugs:</b> Application should be made from dormant, delayed dormant to petal fall when nymphs are present. Apply in-season at early crawler emergence.</li> <li>• Good spray coverage is essential.</li> </ul>

<b>POMEGRANATES</b>		
<b>Pests</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Whiteflies	12.0 to 34.5 oz/acre  (0.75 to 2.156 lbs/acre)  (0.53 to 1.5 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 50 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul>
Mealybugs Scales	34.5 to 46.0 oz/acre  (2.156 to 2.875 lbs/acre)  (1.5 to 2.0 lbs ai/acre)	<p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Brown soft scale:</b> Application can be made at dormant timing targeting the overwintering population or at crawler emergence during the summer.</li> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li>• <b>San Jose scale:</b> Application can be made at dormant, delayed dormant, pre-bloom or in season at early crawler emergence.</li> <li>• <b>Whiteflies:</b> Apply at early nymph threshold.</li> <li>• <b>Other scales:</b> Apply at early crawler emergence.</li> <li>• Good spray coverage is essential.</li> </ul>

<b>STONE FRUITS (CROP GROUP 12)</b>		
Apricot; Cherry, sweet; Cherry, tart; Nectarine; Peach; Plum; Plum, chickasaw; Plum, damson; Plum, Japanese plumcot; Prune (fresh)		
<b>Pests</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Mealybugs Scales	34.5 oz/acre (2.156 lbs/acre) 1.5 lbs ai/acre	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 50 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs.) per acre per growing season.</li> <li>• Do not apply more than 3.0 lbs active ingredient per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li>• <b>San Jose scale:</b> Application can be made at dormant, delayed dormant, or pre-bloom when scale is in the black cap stage, or in-season at early crawler emergence.</li> <li>• <b>Other scales:</b> Apply at early crawler emergence.</li> <li>• Good spray coverage is essential.</li> </ul>

<b>TREE NUTS (CROP GROUP 14) AND PISTACHIOS</b>		
Almond; Beechnut; Brazil nut; Butternut; Cashew; Chestnut; Chinquapin; Filbert; Hickory nut; Macadamia nut; Pecan; Walnut (black and English) and Pistachio		
<b>Pests</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Mealybugs Scales	34.5 to 46.0 oz/acre  (2.156 to 2.875 lbs/acre)  (1.5 to 2.0 lbs ai/acre)	<ul style="list-style-type: none"> <li>• Apply by ground application using a minimum of 100 gallons of water per acre.</li> <li>• Do not make more than 1 application per growing season.</li> <li>• Do not apply more than 46.0 oz (2.875 lbs) per acre per growing season.</li> <li>• Pre-Harvest Interval (PHI): 60 days</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li>• <b>San Jose scale:</b> Application can be made at dormant or delayed dormant when scale is in the black cap stage, or in-season at early crawler emergence.</li> <li>• <b>Other scales:</b> Apply at early crawler emergence or when scales are at a susceptible early nymphal stage.</li> <li>• Good spray coverage is essential.</li> </ul>

GREENHOUSE TOMATOES		
Pests	Rate/Acre	Notes and Use Restrictions
Leafhoppers Mealybugs Planthoppers	9.0 oz/acre  (0.56 lbs/acre)  (0.40 lbs ai/acre)	<ul style="list-style-type: none"> <li>For greenhouse tomatoes, apply by ground on 2 acre minimum with 20 gallons of water per acre.</li> <li>Apply no more than 2 applications per growing cycle.</li> <li>Allow at least 5 days between applications.</li> <li>Do not apply more than 18.0 oz (1.12 lbs) per acre per growing cycle.</li> <li>Pre-Harvest Interval (PHI): 1 day</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>Treatment should be applied when population level reaches economic threshold. Consult local and state agricultural authorities for details.</li> <li>Apply in sufficient water to obtain complete coverage of all plant parts. Good coverage is essential.</li> <li>Applications may be made with high volume, low volume or ultra-low volume (thermal and non-thermal foggers, misters, etc.) ground equipment only. Follow the spray equipment manufacturer's directions to determine the amount of spray solution required to obtain thorough coverage. Consult the spray equipment manufacturer's operator's manual, spray nozzle catalogs and/or your crop advisor for more information.</li> </ul>
Whiteflies	6.0 to 9.0 oz/acre  (0.38 to 0.56 lbs/acre)  (0.26 to 0.40 lbs ai/acre)	

ORNAMENTAL PLANTS		
in greenhouses; lath and shadehouses; nurseries; landscape ornamentals; ground covers; field-and container-grown ornamentals; non-bearing fruit and nut trees and vines in nurseries; Christmas trees		
Pests	Rate/Acre	Notes and Use Restrictions
Leafhoppers Mealybugs Planthoppers	12.0 oz/acre  (0.75 lb/acre)  (0.53 lbs ai/acre)	<ul style="list-style-type: none"> <li>Make no more than 2 applications per crop per growing season.</li> <li>Do not apply more than 28.0 oz (1.76 lbs) per acre per growing cycle.</li> </ul> <p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>Applications may be made with high volume, low volume or ultra-low volume (thermal and non-thermal foggers, misters, etc.) ground equipment only. Follow the spray equipment manufacturer's directions to determine the amount of spray solution required to obtain thorough coverage. Consult the spray equipment manufacturer's operator's manual, spray nozzle catalogs and/or your crop advisor for more information.</li> <li>Apply the specified dosage as a foliar spray in sufficient water for complete, uniform coverage, including stems and underside of leaves. Spray to the point of runoff.</li> <li><b>Whiteflies, Leafhoppers or Planthoppers:</b> Make first application as soon as adult insects begin to appear.</li> <li><b>Mealybugs:</b> Make first application as soon as insect activity is observed.</li> <li><b>Scales:</b> Make first application when crawlers are emerging.</li> <li>If additional insecticide applications are required for control, use another class of chemistry or a different Insect Growth Regulator (IGR) with a different mode of action before making subsequent applications of buprofezin.</li> <li>Consult local or state agricultural authorities for details concerning economic thresholds for each target pest.</li> </ul>
Scales	14.0 oz/acre  (0.88 lb/acre)  (0.61 lbs ai/acre)	
Whiteflies	6.0 oz/acre  (0.38 lb/acre)  (0.26 lbs ai/acre)	

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store in original container, unopened, in a cool, dry place.

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

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Triple rinse (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 ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then, offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Bulk Container – Plastic Drum:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll 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 the procedure two more times.

Alternatively, for pressure rinsing, pressure rinse as follows: Empty the remaining contents into application equipment or mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**IMPORTANT: READ BEFORE USE**

By using this product, user or buyer accepts the following conditions, warranty, disclaimer of warranties, and limitations of liability.

**CONDITIONS:** The directions for use of this product are believed to be accurate and must be followed carefully. However, because of extreme weather and soil conditions, use methods and other factors beyond the control of Nichino America, Inc. (NAI), it is impossible for NAI to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible. To the extent consistent with applicable law, all such risks are assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of NAI is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, NAI disclaims any liability whatsoever for incidental or consequential damages, including, but not limited to, liability arising out of breach of contract, express or implied warranty (including warranties of merchantability and fitness for a particular purpose), tort, negligence, strict liability, or otherwise.

**LIMITATIONS OF LIABILITY:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT THE ELECTION OF NICHINO AMERICA, THE REPLACEMENT OF PRODUCT.

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**SUPPLEMENTAL LABEL**

**GROUP 16 INSECTICIDE**

**Centaur® WDG Insect Growth Regulator**  
EPA Reg. No. 71711-21

DEC 07 2012  
Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for the  
pesticide registered under:

**For Use in Tree Nuts and Pistachios**

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **EPA Reg. No. 71711-21**  
This labeling and the EPA approved container label must be in the possession of the user at the time of application.

New use directions appear on this supplemental labeling that supersede the Section 3 container label.

NOTICE: Before using this product, read the First Aid, Precautionary Statements, Conditions of Sale and Warranty, and complete Directions for Use found on the container labeling. All applicable directions, restrictions, and precautions on the EPA registered label are to be followed.

**APPLICATION RATE CHART**

<b>TREE NUTS (CROP GROUP 14) AND PISTACHIOS</b>		
Almond; Beechnut; Brazil nut; Butternut; Cashew; Chestnut; Chinquapin; Filbert; Hickory nut; Macadamia nut; Pecan; Walnut (black and English) and Pistachio		
<b>Pests</b>	<b>Rate/Acre</b>	<b>Notes and Use Restrictions</b>
Mealybugs Scales	34.5 to 46.0 oz/acre  (2.156 to 2.875 lbs/acre)  (1.5 to 2.0 lbs ai/acre)	<ul style="list-style-type: none"> <li>Apply by ground application using a minimum of 100 gallons of water per acre.</li> <li>Do not make more than 1 application per growing season.</li> <li>Do not apply more than 46.0 oz (2.875 lbs) per acre per growing season.</li> <li>Pre-Harvest Interval (PHI): 60 days</li> </ul> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li><b>Mealybugs:</b> Application should be made when early crawler emergence occurs.</li> <li><b>San Jose scale:</b> Application can be made at dormant or delayed dormant when scale is in the black cap stage, or in-season at early crawler emergence.</li> <li><b>Other scales:</b> Apply at early crawler emergence or when scales are at a susceptible early nymphal stage.</li> <li>Good spray coverage is essential.</li> </ul>

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**NICHINO AMERICA**  
4550 New Linden Hill Road  
Suite 501  
Wilmington, DE 19808  
888-740-7700

**SUPPLEMENTAL LABEL**

**GROUP 16 INSECTICIDE**

**Applaud® Insect Growth Regulator**  
EPA Reg. No. 71711-21

Alternate Brand Name: Centaur WDG

For Use on Persimmons

ACCEPTED  
DEC 07 2012  
Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for the  
pesticide registered under:

**DIRECTIONS FOR USE EPA Reg. No. 71711-21**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. This labeling and the EPA approved container label must be in the possession of the user at the time of application.

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NOTICE: Before using this product, read the First Aid, Precautionary Statements, Conditions of Sale and Warranty, and complete Directions for Use found on the container labeling. All applicable directions, restrictions, and precautions on the EPA registered label are to be followed.

**APPLICATION RATE CHART**

PERSIMMONS		
Pests	Rate/Acre	Notes and Use Restrictions
Mealybugs	34.5 oz/acre (2.156 lbs/acre) (1.5 lbs ai/acre)	<p>USE RESTRICTIONS</p> <ul style="list-style-type: none"> <li>• Apply by ground using a minimum of 100 gallons of water per acre.</li> <li>• Do not make more than 2 applications per growing season.</li> <li>• Do not apply more than 69.0 oz (4.3 lbs) per acre per growing season.</li> <li>• Do not apply more than 3.0 lbs active ingredient per acre per growing season.</li> <li>• Allow at least 14 days between applications.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul>
Soft Scales: European Fruit Lecanium Scale Frosted Scale	34.5 oz/acre (2.875 lbs/acre)  (1.5 lb ai/acre)	<p>RECOMMENDATIONS</p> <ul style="list-style-type: none"> <li>• <b>Mealybugs:</b> Application should be made at the beginning of crawler emergence. APPLAUD is most effective on early developmental stages of mealybugs.</li> <li>• <b>Scales:</b> Application should be made at the beginning of crawler emergence of the scale generation being targeted.</li> </ul>

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