

352-597

7/30/2009

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



OFFICE OF  
PREVENTION, PESTICIDES,  
AND TOXIC SUBSTANCES

July 30, 2009

Dr. Richard A. Carver  
E. I. du Pont de Nemours & Company  
Crop Protection  
P.O. Box 30  
Newark, DE 19714-0030

Dear Dr. Carver:

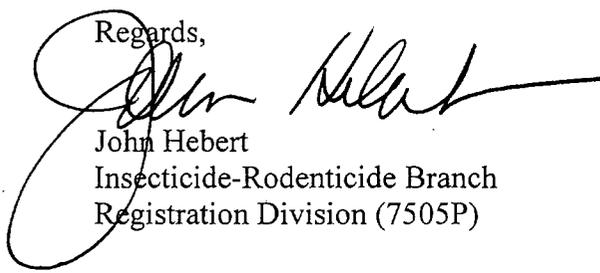
Subject: Amended labeling to add bushberries and garden beets  
Avaunt® Insecticide  
EPA Registration No. 352-597  
EPA Decision No. 390595  
Your Submission Dated November 15, 2007

The proposed labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, is acceptable with the following comments:

- On page 2, please delete the heading "General Information." This heading implies that the language under these categories is advisory, not mandatory. (This change was previously required in an Agency letter dated November 26, 2007).
- On page 2, please delete the "Beneficial Arthropods" section in its entirety.
- On page 3, under the Application section, please modify the last sentence so it reads, "Do not use adjuvant on bushberries **or garden beets.**" (Field trial data for garden beets do not support use of an adjuvant.)
- On page 7, under the directions for garden beet, please add the following restriction: "**Do not use adjuvants.**"

Please submit two copies 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, you may contact Julie Chao at (703) 308-8735 or [chao.julie@epa.gov](mailto:chao.julie@epa.gov).

Regards,

  
John Hebert  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

Enclosure

2013



# DuPont™ Avaunt®

## insecticide

ACCEPTED  
With COMMENTS  
In EPA Letter Dated:

JUL 30 2009

Under the Federal Insecticide, Fungicide  
and Rodenticide Act, As amended, for the  
pesticide Registered under EPA Reg. No:

352-597

GROUP	22	INSECTICIDE
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### Dispersible Granules

Active Ingredient	By Weight
Indoxacarb (S)-methyl 7-chloro-2,5-dihydro-2-[[methoxy-carbonyl][4(trifluoromethoxy)phenyl]amino]-carbonyl]indeno[1,2-c][1,3,4]oxadiazine-4a-(3H)-carboxylate	30%
Inert Ingredients	70%
TOTAL	100%

EPA Reg. No. 352-597

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

Establishment Nos.: 33972-FR-1, 67545AZ-1

### PRECAUTIONARY STATEMENTS

#### KEEP OUT OF REACH OF CHILDREN

## CAUTION

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

#### FIRST AID

**IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**IF ON SKIN OR CLOTHING:** Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

### PRECAUTIONARY STATEMENTS (cont'd)

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

#### PERSONAL PROTECTIVE EQUIPMENT

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

#### Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Chemical Resistant Gloves Category A (such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber), all ≥14 mils.

Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (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. Remove clothing and/or PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to mammals, birds, fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment rinsewater. Do not apply where/when conditions could favor runoff. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Cover, incorporate, or clean up granules that are spilled.

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

## 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**

DuPont™AVAUNT® must be used only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on 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 12 hours for all crops.

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, wear:

- Coveralls over long sleeved shirt and long pants,
- Socks plus chemical resistant footwear,
- Chemical Resistant Gloves Category A (such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber), all ≥14 mils.

AVAUNT® must be used only in accordance with the directions on this label or in separate DuPont supplemental labeling available through local dealers.

DuPont will not be responsible for losses or damages resulting from use of this product in any manner not specifically stated on this label or other labels or bulletins published by DuPont. User assumes all risks associated with such non-specified use.

## GENERAL INFORMATION

AVAUNT® is a water dispersible granule that can be applied as a foliar spray to control many important insects.

AVAUNT® is mixed with water for application.

Use only in commercial and farm plantings. Not for use in home plantings.

Do not formulate this product into any other End-use products without written permission of DuPont.

**CHEMIGATION:** Do not apply this product through any type of irrigation system except for application to cranberries, mint, potatoes and sweet corn and as allowed by Federal Supplemental and Special Local Need (SLN) labeling. (See "Application By Chemigation" section of the label.)

## INTEGRATED PEST MANAGEMENT

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

### **BENEFICIAL ARTHROPODS**

AVAUNT® helps conserve certain beneficials (parasites and predators). While these beneficials cannot be relied upon to control pests, they are of potential value and can be monitored along with pests in pest management programs on these crops.

### **SCOUTING**

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

### **RESISTANCE MANAGEMENT**

For resistance management, AVAUNT® is a group 22 insecticide. Repeated and exclusive use of AVAUNT® or other group 22 insecticides may lead to the buildup of resistant strains of insects in some crops.

Some insects are known to develop resistance to products used repeatedly for control. When this occurs, the recommended dosages fail to suppress the pest population below the economic threshold. Because the development of resistance cannot be predicted, the use of this product should conform to resistant management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of mode-of-action classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local or state agricultural authorities for details.

Unless directed otherwise in the specific crop/pest sections of this label, the following best practices are recommended to delay the development of insecticides resistance: make no more than 2 successive applications per generation or within a 30 day period to the same insect species on a crop. The following application to the target pest(s) must be with an effective product with a different mode of action (for example DuPont™ ASANA® XL or DuPont™ LANNATE® insecticides). If resistance to AVAUNT® develops in your area, AVAUNT®, 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 alternate method of control for your area. For additional information on insect

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

**APPLICATION**

Apply at the listed rates when insect populations reach locally determined economic thresholds. Consult the cooperative extension service, professional consultants or other qualified authorities to determine appropriate threshold levels for treatment in your area.

Follow-up treatments of DuPont™ AVAUNT® should be applied, as needed, to keep pest populations within threshold limits. On most crops, apply AVAUNT® every 3 to 5 days to maintain control. For bushberry, cranberry, pome and stone fruit the minimum interval between treatments is 7 days.

Use sufficient water to obtain thorough, uniform coverage.

Because AVAUNT® is most effective through ingestion of treated plant material, thorough spray coverage is essential for optimum control of targeted pest insects. Using increased water volumes will typically result in better spray coverage, especially under adverse conditions such as dry, hot weather or dense plant foliage. AVAUNT® may be applied by ground, aerial or overhead sprinkler chemigation application equipment. For aerial application use the following directions unless otherwise specified in this label: use a minimum of 5 gallons per acre (gpa) of water, except in tree and vine crops use a minimum of 10 gpa. For ground applications, use the following directions unless otherwise specified in this label: use a minimum of 10 gallons per acre (gpa) of water, except in tree and vine crops use a minimum of 50 gpa and a maximum of 200 gpa of water.

Use of Adjuvants: In some situations where coverage is difficult to achieve such as closed canopy, dense foliage, plants with waxy leaf surfaces, or less than optimum application equipment, an adjuvant may improve performance. Use only adjuvant products that are labeled for agricultural use and follow the directions on the manufacturer's label. For uses in fruit crops, use a proven and recommended adjuvant that does not affect fruit finish.

Do not use adjuvant on bushberries.

**SPRAY PREPARATION**

Spray equipment must be clean and free of previous pesticide deposits before applying AVAUNT®. Fill spray tank 1/4 to 1/2 full of water. Add AVAUNT® directly to spray tank. Mix thoroughly to fully disperse the insecticide; once dispersed continued agitation is required. Use mechanical or hydraulic means; do not use air agitation. Spray mix must not be stored overnight in spray tank.

**Compatibility** - Since formulations may be changed and new ones introduced, it is recommended that users premix a small quantity of a desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.). Avoid mixtures of several materials and very concentrated spray mixtures.

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

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

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

Follow local practice and manufacturer's recommendations.

**SPRAY TANK CLEANOUT**

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

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

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

**CROP ROTATION RESTRICTIONS**

Crops that are on this label and alfalfa, cotton, peanuts and soybeans may be planted immediately following harvest. Do not plant for food or feed any other crops not registered for use with indoxacarb for 30 days after last use.

**APPLICATION BY CHEMIGATION – CRANBERRY, MINT, POTATOES AND SWEET CORN**

**Instructions for the Use of AVAUNT® in Overhead Sprinkler Chemigation Systems.**

Overhead chemigation applications offer the advantage of greater penetration and coverage of the target plant. However, typical chemigation applications are more dilute than ground or aerial applications. For best results, it is recommended to keep the concentration of AVAUNT® as high as possible in the application. Apply AVAUNT® in 0.1 to 0.2 inches of water per acre. AVAUNT® is most active as an ingestion insecticide, although it does have activity as a direct contact insecticide. For best results, applications of AVAUNT® should ensure thorough coverage of the target plant to maximize the opportunity for target insects to ingest AVAUNT®.

**Types of Chemigation Systems:**

AVAUNT® may be applied only through overhead sprinkler irrigation systems. Overhead irrigation systems include the following; center pivot, end tow, hand move, lateral move, side roll, solid set and wheel line. Center pivot and lateral move irrigation systems are preferred. Other overhead sprinkler systems may be used if they provide uniform water distribution. Do not apply AVAUNT® through any other type of irrigation system. Do not use filter

screens smaller than 50 mesh throughout the system, due to possible build up of material on 100 mesh or smaller screens.

**General Directions for Chemigation:**

**Preparation**

A pesticide tank is recommended for the application of AVAUNT® in chemigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. With the mix tank 1/4 to 1/2 full with water and the agitator running, measure the required amount of AVAUNT® and add it to the tank. Then add additional water to bring your total pesticide mixture up to the desired volume for your application. Note: Always add the AVAUNT® to water, never put AVAUNT® into a dry tank or other mixing equipment without first adding water. See "Tank Mixing Sequence" section of the container label for tank mixing sequence. Continue to agitate the mixture throughout the application process. Use mechanical or hydraulic agitation, do not use air agitation. Highly alkaline water should be buffered so that the pH of the spray solution is in the range of neutral to slightly acidic.

**Injection Into Chemigation Systems**

Inject the proper amount of DuPont™ AVAUNT® into the irrigation water flow using a positive displacement injection pump. Injection should occur at a point in the main irrigation water flow to ensure thorough mixing with the irrigation water. For continuously moving systems, inject the solution containing AVAUNT® into the irrigation water line continually and uniformly throughout the irrigation cycle. Apply in no more than 0.2 inches of water per acre. For overhead sprinkler systems that are stationary, add the solution containing AVAUNT® to the irrigation water line and apply no more than 0.2 inches of water per acre just before the end of the irrigation cycle.

**Uniform Water Distribution**

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

**Equipment Calibration**

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

**Monitoring of Chemigation Applications**

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

adjustments or repairs on the chemigation system when AVAUNT® is in the irrigation water.

**Required System Safety Devices**

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

1. The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering 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.
7. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

**Operation**

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

- End guns must be turned off during the application, if they irrigate nontarget areas or if they do not provide uniform application and coverage.
- It is recommended that nozzles in the immediate area of wells, control panels, chemical supply tanks and system safety devices be plugged to prevent contamination of these areas.

- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Do not apply when system connections or fittings leak or when nozzles do not provide uniform distribution.
- Do not allow irrigation water to collect or run-off during chemigation.

**Cleaning the System**

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

Crops	Insects	DuPont™ AVAUNT® Rate Per Acre		Last Application Days to Harvest	REI
		Lbs. A.I.	Ounces		
Brassica (Cole) Leafy Vegetables, including Broccoli, Chinese broccoli, Broccoli raab, Brussels sprouts, Cabbage, Chinese cabbage (napa and bok choy), Chinese mustard cabbage, Cauliflower, Cavalo broccolo, Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens and Turnip tops**	Beet Armyworm Diamondback moth	0.065*	3.5*	3	12 hrs.
	Cabbage looper Cabbage webworm (except California) Cross striped cabbageworm (except California) Imported cabbageworm	0.045 - 0.065*	2.5 - 3.5*		
<p>Do not apply more than 14 ounces AVAUNT® (0.26 lbs a.i.) per acre per crop.                      The minimum interval between sprays is 3 days.                      Do not apply to greenhouse or field grown brassica crops grown for transplant.                      Resistance Management for Diamondback Moth: Do not apply AVAUNT® more than twice to any generation of diamondback moth larvae. After the second application, rotate to another insecticide with a different mode of action (ie. a product with a different IRAC group number).                      Do not apply less than 3.5 ounces of AVAUNT® per acre. If applications of AVAUNT® do not result in reduction in diamondback moth larvae populations, immediately stop use of AVAUNT® and apply a registered insecticide with a different mode of action. Do not make more than 6 total applications of AVAUNT® per calendar year for control of diamondback moth per farm location.                      In the State of Georgia: Do not apply more than 4 applications of AVAUNT® per calendar year for the control of diamondback moth per farm location.                      *Add a wetting agent to improve spray coverage.                      **For use on turnips grown for tops or greens, not for the production of turnip roots.</p>					
Bushberries (and hybrids and cultivars of these), including Aronia berry, Blueberries (Highbush blueberry and Lowbush blueberry), Chilean guava, Currants (Black currant, Buffalo currant, Native currant and Red currant), European barberry, Elderberry, Gooseberry, Highbush cranberry, Honeysuckle, Huckleberry, Jostaberry, Juneberry, Salal, Sca buckthorn	Cranberry fruitworm, Cherry fruitworm Winter moth	0.065 - 0.11	3.5 - 6.0	7	12 hrs.
	Bruce spanworm	0.11	6.0		
<p>Make no more than 4 applications per season.                      Do not apply more than 24 oz. AVAUNT® (0.44 lb a.i.) per acre per crop.                      Do not apply dilute applications of more than 200 gallons of water per acre.                      Do not use adjuvants.                      For best results apply in 20 - 50 gallons of water per acre by ground or 10 gallons of water per acre by air.                      Minimum interval between treatments is 7 days.</p>					
Corn (sweet) For application through tassel push only.	European corn borer (except California) Fall armyworm Corn earworm	0.045 - 0.065	2.5 - 3.5	3 35 - fodder & stover	12 hrs.
	<p>Make no more than 4 applications per season.                      Whorl stage through tassel push (prior to silking) application only. Do not apply more than 14 ounces AVAUNT® (0.26 lbs a.i.) per acre per crop.                      The minimum interval between sprays is 3 days.                      Chemigation - Begin application when sweet corn is in the V1 (1st collar) stage of growth up to tassel push (V15) when damage from larvae populations exceed recommended thresholds.                      For best results, a slurry of AVAUNT®, vegetable oil and an emulsifier must be kept continuously agitated in the injection tank to keep the mixture in suspension and to ensure application of the proper rate per acre.</p>				
Cranberry	Cranberry weevil* Blackheaded fireworm Spanworm	0.11	6.0	30	12 hrs.
	<p>Do not apply to flow through bogs or allow release of irrigation water from bogs for at least 1 day following application.                      Do not apply more than 24 oz. AVAUNT® (0.44 lb a.i.) per acre per season.                      The minimum interval between sprays is 7 days.                      *Apply up to two applications to the spring (overwintering) generation of adult cranberry weevil prior to bloom. Do not apply more than 12 oz. AVAUNT® (0.22 lb ai) per acre per season for control of cranberry weevils.</p>				

Crops	Insects	DuPont™ AVAUNT® Rate Per Acre		Last Application Days to Harvest	REI
		Lbs. A.I.	Ounces		
Cucurbit vegetables - including Chayote (fruit), Chinese waxgourd (Chinese) preserving melon) Citron melon, Cucumber, Gherkin, Edible gourd (including hyotan, cucuzza, hechima and Chinese okra), Momordica species (including balsam apple, balsam pear, bitter melon and Chinese cucumber), Muskmelon (including true canteloupe, canteloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon), Pumpkin, Summer squash (including crookneck squash, scallop squash, straightneck squash, vegetable marrow and zucchini), Winter squash (including butter-nut squash, calabaza, hubbard squash, acorn squash and spaghetti squash) and Watermelon	Cabbage Looper Melonworm Pickleworm	0.045 - 0.11	2.5 - 6.0	3	12 hrs
	Beet Armyworm	0.065 - 0.11	3.5 - 6.0		
Do not apply more than 24 ounces AVAUNT® (0.44 lbs a.i.) per acre per crop. The minimum interval between sprays is 5 days. For ground applications, apply using a minimum of 10 gallons per acre of water.					
Fruiting Vegetables and Okra, including eggplant, groundcherry, pepino, peppers (bell, chili, cooking, pimento and sweet), tomatillo and tomato	Beet armyworm European Corn Borer* (except California) - bell pepper only Leafminer (Use on Florida tomatoes only - suppression only)** Southern armyworm Tomato fruitworm Tomato pinworm Western yellowstriped armyworm	0.065	3.5	3	12 hrs.
	Hornworms Loopers	0.045 - 0.065	2.5 - 3.5		
	Do not apply more than 14 ounces AVAUNT® (0.26 lbs a.i.) per acre per crop. The minimum interval between sprays is 5 days. *- European corn borer applications for use only on bell peppers - For best results, begin applications of AVAUNT® following two applications of an organo-phosphate insecticide labeled for European corn borer control in bell pepper. ** Suppression of leafminer on Florida tomatoes- Use of an adjuvant may improve performance.				
Garden beet	Beet armyworm	0.065 - 0.11*	3.5 - 6.0	7	12 hrs.
	Do not apply more than 24 ounces AVAUNT® (0.44 lb a.i.) per acre per crop. The minimum interval between sprays is 3 days. *- For best results, add a wetting agent to improve spray coverage.				

Crops	Insects	DuPont™ AVAUNT® Rate Per Acre		Last Application Days to Harvest	REI
		Lbs. A.I.	Ounces		
Grape	Grape leafhopper Japanese beetle (except California) Western grapeleaf skeletonizer	0.065 - 0.11	3.5 - 6.0	7	12 hrs
	Grape berry moth (except California) Leafhoppers (suppression only)	0.09 - 0.11	5.0 - 6.0		
	Omnivorous leafroller	0.11	6.0		
	<p>Make the first application at initiation of egg hatch or at the first signs of infestation for each generation. Use the higher application rate for moderate to heavy insect pressure. Make application before pests reach damaging levels. Monitor fields and make an additional application if populations rebuild to potentially damaging levels. Apply in sufficient water to obtain thorough coverage of foliage. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action threshold levels for these pests.            Make no more than 2 applications per season.            Do not apply more than 12 oz. AVAUNT® (0.22 lbs. a.i.) per acre per crop.            The minimum interval between sprays is 21 days.            For best results, use an adjuvant to help increase coverage, penetration and thus performance.</p>				
Leafy Green Vegetables, (except spinach and spinach varieties), including: Arugula (Rocket), Chervil, Edible-leaved chrysanthemum, Garland chrysanthemum, Corn salad, Garden cress, Upland cress (yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Head and Leaf Lettuce, Orach, Parsley, Garden Purslane, Winter purslane and Radicchio (red chicory)	Beet armyworm Corn earworm	0.065 - 0.11	3.5 - 6.0	3	12 hrs.
	Cabbage looper	0.045 - 0.065	2.5 - 3.5		
	<p>Do not apply more than 24 ounces AVAUNT® (0.44 lbs a.i.) per acre per crop.            The minimum interval between sprays is 3 days.</p>				
Leafy petioles, including: Cardoon, Celery, Chinese celery, Celtuce, Florence fennel (finocchio), Rhubarb and Swiss chard	Beet Armyworm Cabbage looper	0.065	3.5	3	12 hrs
	<p>Do not apply more than 14 ounces AVAUNT® (0.26 lbs a.i.) per acre per crop.            The minimum interval between sprays is 3 days.</p>				
Mint (Peppermint and Spearmint)	Cabbage looper Spotted cutworm	0.065	3.5	7	12 hrs
	<p>Do not apply more than 14 ounces AVAUNT® (0.26 lbs a.i.) per acre per crop.            The minimum interval between sprays is 3 days.            For ground applications, apply using a minimum of 20 gallons per acre of water.</p>				
Pear	Codling moth - East of the Rocky Mountains	0.09 - 0.11	5.0 - 6.0	28	12 hrs.
	Codling moth - West of the Rocky Mountains*	0.09 - 0.11	5.0 - 6.0		
	Oriental fruit moth Pandemis leafroller (except California) Redbanded leafroller White apple leafhopper (except California)	0.09 - 0.11	5.0 - 6.0		
	<p>Make no more than 3 applications prior to hand-thinning. No hand-thinning after the 4th application. Make no more than 4 applications per season. Do not apply more than 24 oz AVAUNT® (0.44 lbs a.i.) per acre per crop. Do not apply dilute applications of more than 200 gal water per acre. For best results apply 50 - 150 gal water per acre. The minimum interval between treatments is 7 days.            *West of the Rockies. For use against low to moderate infestations in conjunction with alternate control measures such as established Mating Disruption blocks.</p>				

Crops	Insects	DuPont™ AVAUNT® Rate Per Acre		Last Application Days to Harvest	REI
		Lbs. A.I.	Ounces		
Pome Fruit (except pear) including: Apple, Crabapple, Loquat, Mayhaw, and Quince	Codling moth - East of the Rocky Mountains	0.09 - 0.11	5.0 - 6.0	14	12 hrs.
	Codling moth - West of the Rocky Mountains*	0.09 - 0.11	5.0 - 6.0		
	European apple sawfly (except California)	0.09 - 0.11	5.0 - 6.0		
	Green fruitworm (except California)				
	Lesser apple worm				
	Oriental fruit moth				
Pandemis leafroller					
Plum curculio	0.056 - 0.11	3.0 - 6.0			
Potato leafhopper					
Redbanded leafroller					
Spotted tentiform leafminer - suppression only** (except California)					
Tarnished plant bug					
Tufted apple bud moth	0.11	6.0			
White apple leafhopper***					
<p>Make no more than 3 applications prior to hand-thinning. No hand-thinning after the 4th application.            Make no more than 4 applications per season. Do not apply more than 24 oz. AVAUNT® (0.44 lbs a.i.) per acre per crop. Do not apply dilute applications of more than 200 gal water per acre. For best results apply 50 - 150 gal water per acre. The minimum interval between treatments is 7 days.            *West of the Rockies. For use against low to moderate infestations in conjunction with alternate control measures such as established Mating Disruption blocks.            **Use of an adjuvant may improve performance.            For best results, especially when using the lower use rate, use an adjuvant.            ***White apple leafhopper (OR and WA only)-application rates of 2.5 - 4.9 ounces per acre (0.045 - 0.089 lbs. A.I./acre) may be used for suppression of light infestations.            ****Apple maggot - apple maggot entering the orchard from border areas may not be controlled if they do not feed on treated apples prior to oviposition.</p>					
Southern pea (Use on dried Southern pea varieties only)	Corn Earworm	0.065	3.5	7	12 hrs
	European Corn Borer				
<p>Do not apply more than 14 ounces AVAUNT® (0.26 lbs a.i.) per acre per crop.            The minimum interval between sprays is 3 days.            Make a uniform application in approximately 20 to 100 gallons of water per acre.</p>					
Spinach, New Zealand spinach, Vine spinach and Amaranth (leafy amaranth, Chinese spinach amaranth)	Beet armyworm	0.065	3.5	3	12 hrs
	Cabbage looper				
<p>Do not apply more than 14 ounces AVAUNT® (0.26 lb ai) per acre per crop.            The minimum interval between sprays is 3 days.</p>					
Stone Fruit including, Apricot, Sweet cherry, Tart cherry, Nectarine, Peach, Plum, Chicksaw plum, Damson plum, Japanese plum, Plumcot and Prune	Plum curculio	0.09 - 0.11	5.0 - 6.0	14	12 hrs.
	Peach twig borer*	0.11	6.0		
	Oriental fruit moth**				
<p>Make no more than 3 applications prior to hand-thinning. No hand-thinning after the 4th application.            Make no more than 4 applications per season. Do not apply more than 24 oz. AVAUNT® (0.44 lbs a.i.) per acre per crop. Do not apply dilute applications of more than 200 gal water per acre. For best results apply 50 - 150 gal water per acre. The minimum interval between treatments is 7 days.            * Peach twig borer - AVAUNT® may be used as an early bloom or in-season spray for peach twig borer. AVAUNT® provides control of fruit strikes by peach twig borer and suppression of shoot strikes.            Peach twig borer (dormant and delayed dormant, CA only) - Avaunt may be used as a dormant or delayed-dormant spray for the control of first generation peach twig borer. Make application with an EPA registered dormant oil; for specific recommendations on the use of oil consult the manufacturer's label. For best performance, ground application equipment is recommended.            ** Oriental fruit moth (OFM) - For applications East of the Rockies: AVAUNT® is effective for control of OFM when used as part of an effective IPM program. Rotate to a product with another mode of action after each AVAUNT® application. West of the Rockies: AVAUNT® provides suppression only of OFM.</p>					

Crops	Insects	DuPont™ AVAUNT® Rate Per Acre		Last Application Days to Harvest	REI
		Lbs. A.I.	Ounces		
Tuberous and Corn Vegetables, including: Arracacha.	Cabbage looper	0.045 - 0.11	2.5 - 6.0	7	12 hrs.
	Colorado potato beetle* European corn borer (except California)	0.065 - 0.11	3.5 - 6.0		
	Potato tuberworm** (except California)	0.056 - 0.11	3.0 - 6.0		
Arrowroot, Chinese Artichoke, Jerusalem Artichoke, Edible Canna (Queensland arrowroot), Bitter and Sweet Cassava, Chayote (root), Chufa, Dasheen (taro), Ginger, Leren, Potato, Sweet Potato, Tanier (cocoyam), Turmeric, Yam Bean (jicama, manioc pea), and True Yam	<p>Do not apply more than 24 ounces AVAUNT® (0.44 lbs a.i.) per acre per crop. The minimum interval between sprays is 5 days.</p> <p>*Colorado potato beetle - In situations where Colorado potato beetle populations are known or suspected to be difficult to control with current insect control products, the inclusion of piperonyl butoxide (PBO), a synergist, with AVAUNT® may be necessary to achieve optimum control. In these situations, a combination of AVAUNT® applied at a rate of 3.5 - 6.0 oz. per acre combined with 0.25 lb a.i. per acre of PBO may be necessary to achieve the most effective control of Colorado potato beetle larvae.</p> <p>Apply the low rates on small plants, small insects and light infestations of insects. Use intermediate rates on large insects and heavier infestations of insects. Use the highest specified rate for controlling severe infestations. Apply AVAUNT® insecticide as a thorough coverage spray using properly calibrated air or ground spray equipment. Use sufficient water to obtain thorough and uniform coverage. For aerial application, use a minimum of 5 gallons of water per acre.</p> <p>**Potato tuberworm foliar feeding larvae - AVAUNT® is most effective when applied by ground, air or overhead chemigation to vigorously growing plants through tuber bulking prior to the beginning of crop senescence. Repeat applications of effective insecticides may be needed to keep tuberworm larvae populations as low as possible prior to harvest in order to reduce the risk of tuber damage. Failure to adequately control tuberworm larvae prior to crop senescence or vinekill increases the risk of tuber damage.</p> <p>Potato tuberworm is a difficult pest to control due to several factors; eggs can be laid deep in the canopy and on the underside of the leaf, and larvae feed inside the leaves prior to moving to the soil to feed on the tubers. An integrated spray approach is essential. Foliar sprays alone (ground or air) may not provide adequate control of larvae in the mid to lower crop canopy. For best results, apply via chemigation or integrate chemigation applications into the foliar spray program. Ensure thorough coverage by using sufficient spray volumes. For ground applications use at least 10 gallons of water per acre. For aerial applications, use at least 5 gallons of water per acre. For best results with foliar sprays, add Methylated Seed Oil (MSO) as a spray adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). For chemigation applications, apply in 0.1 to 0.2 acre inch of water and add MSO at 12 to 16 fl oz/A.</p> <p>Do not make more than two sequential applications of AVAUNT® for control of potato tuberworm before rotating to another registered insecticide having a different mode of action.</p>				

## SPRAY DRIFT MANAGEMENT

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

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

### IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See **Wind, Temperature and Humidity**, and **Surface Temperature Inversions** sections of this label.

### Controlling Droplet Size - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

### Controlling Droplet Size - Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- Do not apply as a ULV application.

### BOOM LENGTH AND HEIGHT

- **Boom Length (aircraft)** - The boom length should not exceed 3/4 of the wing length, using shorter booms decreases drift potential. For helicopters use a boom length and position that prevents droplets from entering the rotor vortices.
- **Boom Height (aircraft)** - Application more than 10 ft above the canopy increases the potential for spray drift.
- **Boom Height (ground)** Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom

should remain level with the crop and have minimal bounce.

### WIND

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.**

**Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they effect spray drift.

### TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

### SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### SHIELDED SPRAYERS

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

### AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

**Note:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

### AIR ASSISTED (AIR BLAST) TREE AND VINE SPRAYERS

Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream.

In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift.:

- *Adjust deflectors and aiming devices so that spray is only directed into the canopy.*
- *Block off upward pointed nozzles when there is no overhanging canopy.*
- *Use only enough air volume to penetrate the canopy and provide good coverage.*
- *Movement of spray that goes beyond the edge of the cultivated area may be minimized by practices such as spraying the outside row only from outside the planting.*

**STORAGE AND DISPOSAL**

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

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

**PESTICIDE DISPOSAL:** Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes are acutely hazardous. 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: For Plastic Containers:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**For Fiber Drums With Liners:** Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner.

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