

Excluding California

EPA Reg. No. 55947-80

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 through any type of irrigation system.

JAVELIN is a biological insecticide specific for the control of lepidopterous larvae (see Recommended Application Rates section). JAVELIN attacks the larval gut and must be ingested by the insect to be effective

Since the active ingredient, Bacillus thuringiensis, is exempt from tolerance requirements, JAVELIN may be applied up to and on the day of harvest.

Mixing

Always shake or stir JAVELIN thoroughly before use. Add recommended amount of JAVELIN to 3/4 volume of required spray before filling tank. Maintain agitation. Do not allow dilute sprays to remain in the tank for more than 48 hours. JAVELIN is formulated to provide desirable coverage and adherence to leaf surfaces. Additional adjuvants, spreaders, or stickers may be added to improve product performance, especially under heavy dew or rainy conditions. Combinations with commonly used insecticides, fungicides, or other spray tank adjuvants are generally not deleterious to JAVELIN if the mix is used promptly. Before mixing in the spray tank, it is advisable to test physical compatibility by mixing all components in a small container in proportionate quantities.

ACCEPTED

OCT 20 1989

Under the Federal Insecticide, Fungicide, and
Rodenticide Act, as amended for the
pesticide registered under
EPA Reg. No. 55947-80

Ground Application

Unless otherwise stated, use recommended amount of JAVELIN in a minimum of 20 gallons of water per acre depending on type of crop and requirements of state regulations.

Aerial Application

Use recommended amount of JAVELIN in at least 5 gallons of water per acre. Applications at higher water volumes have demonstrated improved control of targeted pests. Apply early morning or evening when air is calm.

General Use Instructions

For most consistent control apply at first sign of newly hatched worms (1st and 2nd instar larvae).

Reapply as necessary under a pest management program that includes close scouting.

If rapid knockdown of heavy worm or non-lepidopteran populations is necessary, include an effective contact insecticide in combination with JAVELIN.

For heavy worm infestations use the higher JAVELIN rate. During situations of dense foliage and/or rapid growth, increasing water carrier volumes will provide better crop coverage and improve JAVELIN performance.

SANDOZ CROP PROTECTION

Brussels Sprouts	European Corn Borer	1-2
Cabbage	Green Cloverworm	1-2
Cardoon	Hornworms	1-2
Carrots	Loopers	1-2
Cauliflower	Cabbageworm	1-2
Celery	Loopers	1-2
Celery	Salt Marsh	1-2
Chick Peas	Caterpillar	1-2
Chinese Cabbage		
Collards		
Cucumbers		
Dry Bulb Onions		
Eggplants		
Garlic		
Green Onions		
Greens		
Dandelion		
Turnip Mustard		
Beet, China		
Herbs (Basil, Cilantro, Dill, Oregano, Thyme, etc.)		
Kale		
Kohlrabi		
Leeks		
Lettuce		
Endive		
Iceberg		
Head Lettuce		
Escarole		
Butter Lettuce		
Leaf etc.		
Melons		
Cantaloupe		
Crenshaw		
Honeydew		
Muskmelon		
Watermelon		
etc.		
Okra		
Parsley		
Parsnips		
Pear		
Pepper		
Potatoes		
Pumpkins		
Radishes		
Rotabaga		
Salsify		
Spinach		
Squash		
Summer and Winter		
Sweet Corn		
Sweet Potatoes		
Swiss Chard		
Table Beets		
Tomatoes		
Turnip Root		
Watercress		
Yams		

			egg laying applications may provide variable control. Under these conditions the addition of a contact insecticide in combination with JAVELIN is recommended.
			The addition of a spreader sticker to JAVELIN may provide improved performance.
Corn	Armyworm Diamondback Moth	1-2 1	Apply as necessary to maintain control.
Field Corn Pop. Corn Seed Corn	Armyworm European Corn Borer Southwestern Corn Borer	1-2 2 2	Make initial application when economic damage is beginning population level. Repeat as necessary to maintain control. Applications must be made to early instars prior to entering the ear or plant. Aids in control.
Maple	Loopers Omnivorous Leafhopper Spotted Cutworm Obliviousbander Leafroller	1-2 1-2 1-2 1-2	Apply as necessary to maintain control. Begin treatment as soon as possible after hatching and before larvae are protected by cast skins.
Jajoba	Loopers (Anacamptodes spp)	1-2	Apply in a minimum of 5 gallons of water per acre by ground equipment or a minimum of 10 gallons of water by aerial equipment. Thorough coverage of foliage is essential and dictated by minimum spray volume necessary.
Dry Beans and Peas Lentils Mint Peanuts Rice Safflower Soybeans Sugar Beets Sunflower	Armyworms Green Cloverworm Loopers Saltmarsh Caterpillar Velvetbean Caterpillar Heliothis spp	1-2 1-2 1-2 1-2 1-2 1-2 1-2	Apply as necessary to maintain control. Suppressants only.
Tobacco	Looper Tobacco Hornworm Tobacco Budworm	1-2 1-2 2	Apply as necessary to maintain control. Suppressants only.

Fruit, Nut, & Vine Crops

Crop	Insect	Rate Qts./Acre	Additional Instructions	
Apples and Pears	Fruitree Leafroller	1-2	Apply when newly hatched larvae appear and before leaves are rolled. Continue applying as a part of the normal cover spray program until pest is adequately controlled.	
	Gypsy Moth	1-2		
	Redbanded Leafroller	1-2		
	Tufted Apple Budmoth	1-2		
	Variogated Leafroller	1-2		
	Tent Caterpillar	1-2		Apply when caterpillars are actively feeding (2nd-4th instars)
Avocados	Loopers	2	Apply as necessary to maintain control.	
	Orange Tortrix	1-2		
	Omnivorous Leafroller	1-2		Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.
	Amorbia	2	Suppression only.	
Bananas	Banana Skipper	1-2	Hawaii only. Use calibrated ground equipment with adequate water to apply to point of runoff.	
Citrus	Citrus Cutworm	2	Use 50-60 gal. of water per acre when using ground equipment and 10 gal. of water minimum per acre by air.	
	Fruitree Leafroller	1-2		
	Orange Tortrix	1-2		
	Amorbia	2		Suppression only.
Blueberries, Caneberries, Currant, Kiwi	Blueberry Leafroller	1-2	Begin treatment as soon as possible after hatching. For leafrollers apply before larvae are protected by leaf folds.	
	Cherry Fruitworm	1-2		
	Fruitree Leafroller	1-2		
	Gypsy Moth	1-2		
	Green Fruitworm	1-2		
	Loopers	1-2		
	Orange Tortrix	1-2		
	Omnivorous Leafroller	1-2		
Grapes	Grape Leafroller	1-2	Apply by ground equipment at 20-25 gal. per acre total spray per acre to obtain thorough coverage of leaf surface. Start treating as soon as possible after hatching and before larvae are protected by leaf folds.	
	Grapeleaf Skeletonizers	1-2		
	Omnivorous Leafroller	1-2		
	Orange Tortrix	1-2		
	Saltmarsh Caterpillar	1-2		
Almonds, Apricots, Cherries, Filberts, Nectarines, Peaches, Pecans, Persimmons, Plum, Pomegranate, Prunes, Walnut	Fall Webworm	1-2	For leafrollers start treating as soon as possible after hatching and before larvae are protected by leaf folds.	
	Filbert Webworm	1-2		
	Omnivorous Leafroller	1-2		
	Citrus Cutworm	1-2		
	Restumped Caterpillar	1-2		
	Tent Caterpillar	1-2		
Strawberries	Armyworm	2	Apply by ground equipment at 20-25 gal. per acre total spray per acre to obtain thorough coverage of leaf surface. Start treating as soon as possible after hatching and before larvae are protected by leaf folds.	
	Gypsy Moth	1-2		
	Redbanded Leafroller	1-2		

Cotton - Except Arizona and California

Timing	Insect	Rate Qts./Acre	Additional Instructions
Early	Bollworm	1-2	For early season management of <i>Heliothis</i> species. Initiate applications when 50% of plants are at pinhead square cotton stage, independent of <i>Heliothis</i> egg and larval counts, or at 1st egg lay whichever occurs earlier. Continue applications on 5-day spray interval up to synthetic pyrethroid spray window.
	Tobacco Budworm	1-2	
			For added control of <i>Heliothis</i> , tankmixing of JAVELIN with a labeled ovicide, such as amitraz (0.125-0.25 lb a.i./acre), methomyl (0.125 lb a.i./acre), profenofos (0.25 lb a.i./acre), or thiodicarb (0.125-0.25 lb a.i./acre) is recommended. Read and follow all precautions and restrictions on tankmix product labels.

Cotton

Timing	Insect	Rate Qts./Acre	Additional Instructions
Early and Mid-Season	Armyworm	2	Repeat as necessary throughout season to maintain control.
	Cotton Leaf Perforator	1-2	
	Cotton Leafworm	1-2	
	Loopers	1-2	
	Saltmarsh Caterpillar	1-2	
	Bollworm, Tobacco Budworm	1-2	If egg laying frequency indicates future moderate to heavy worm populations, time application spray to coincide with the presence of 1st and 2nd instar larvae. During periods of high temperatures, worms will progress through 1st-3rd instars very rapidly and early application timing is necessary for control.
			To be effective JAVELIN spray must be deposited at the larval feeding site. When plant cover is dense and worms are feeding in the lower 2/3 portion of the plant, aerial application of JAVELIN may not provide adequate control.
			For the suppression of light to moderate infestations apply at first sign of egg laying or newly hatched worms, 1st instar larvae.

Shade Trees & Ornamentals

Pests	Qts./Acre	Additional Instructions
Spring and Fall Cankerworm Elm Spanworm Tent Caterpillar Gypsy Moth	1-1 1-1 1-1 1-2	Apply when leaf expansion reaches 40% to 50% as infestation warrants. If eggs hatch over a long period of time or if reinfestation occurs, spray about 14 days after first applications.
Spruce Budworm	1-2	Apply when most larvae are 3rd-4th instar. Also consider the opening of the bud cap to ensure foliage exposure.
Douglas Fir Tussock Moth Jack Pine Budworm Bagworm California Oak Moth Western Tussock Moth Fruit Tree Leafroller Mimosa Webworm Redhumped Caterpillar Fall Webworm	1-1 1-1 1-1 1-1 1-1 1-1 1-1 1-1 1-1	Apply after eggs have hatched and early instar larvae are feeding on exposed foliage.

Turf

Pest	Qts./Acre	Additional Instructions
Tropical Sodwebworm Armyworm	2 2	Repeat as necessary throughout season to maintain control.

Stored Soybeans, Grains

Indian Meal Moth, Almond Moth

To control and prevent Indian Meal Moth and Almond Moth infestations of stored soybeans and grains prepare a spray mixture which includes 1 gallon of water for every 6 ounces of JAVELIN. The spray mixture may be applied either by treating the top 4 inches of grain as it is being augered into storage (applying 0.6 pint of mixture per bushel in the grain stream), or by treating the surface of grain after it is in the bin. The table below can be used as a guide in determining the total amount of JAVELIN needed according to the bin diameter or the number of bushels to be treated.

Bin Diameter (ft.)	Surface Area (sq. ft.)	Bushels (to 4 in. depth)	JAVELIN Rate
8	50	13	3 oz
12	113	30	7 oz
16	201	53	12 oz
20	314	84	17 oz
24	452	121	26 oz
28	615	163	36 oz
32	804	214	48 oz

To insure thorough coverage when making applications to the grain surface after it is in the bin, apply spray mixture in three applications. Mix the grain with a scoop or rake to a depth of 4 inches after each application.

Stored grain may be treated anytime, but for best results, treat grain at the time it is placed into storage or shortly thereafter, or in the early spring prior to egg laying. Full season control is normally experienced. Re-treat only if reinfestation occurs.

For the protection of bagged grain, apply spray mixture to entire grain mass, and mix thoroughly prior to bagging. JAVELIN at 3/4 quart per 10 gallons of water will treat approximately 100 bushels.

Treated grain may be used at any time after treatment.

Greenhouse Application

JAVELIN may also be used in the greenhouse and on flowers at a rate of 1-2 quarts per 100 gallons of water for control of listed insects on this label.

Limited Warranty And Liability

Notice: Read this Limited Warranty and Liability before buying or using this product. If terms are not acceptable, return it at once, unopened.

It is critical that this product be used and mixed only as specified on the label. The laws of a State may make some or all of this paragraph inapplicable or may give you rights in addition to your rights hereunder. Except to the extent prohibited by applicable law, the exclusive remedy of the user or buyer and the limit of liability of this Company or any other Seller for any and all losses, personal injuries or damages resulting from the use of this product, shall be the purchase price paid by the user or buyer for the quantity of product involved. Except to the extent prohibited by State Law, there is no warranty and this Company and other Sellers disclaim all liability for losses, personal injury or damages; (i) arising from any use of this product in a manner or for a purpose not recommended in its label directions, or from mixing this product before use with any substance except as recommended by the product's label, (ii) arising from handling or storage in violation of label instructions; (iii) for all indirect, special or consequential damages, (iv) when not reported to this Company within one year of discovery.

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

Shaded areas indicate new information

JAVELIN
BIOLOGICAL INSECTICIDE

For Control Of Insect Pests Of Vegetables, Fruit and Field Crops

ACTIVE INGREDIENT:

Bacillus thuringiensis Variety Kurstaki
Potency of 16,000 Spodoptera Units (at least
12 million viable spores) per milligram* 1.6%

INERT INGREDIENTS: 98.4%

TOTAL 100.00%

*Equivalent to 16.0 Billion Spodoptera units per quart (8.0 billion
International Units per quart).

HAZARDS TO HUMANS

KEEP OUT OF REACH OF CHILDREN

CAUTION

ENVIRONMENTAL HAZARDS

Do not apply directly to water or wetlands
(swamps, bogs, marshes and potholes). Aerial
application is permissible where tree canopy
exists. Do not contaminate water when
disposing of equipment washwaters.

Lot No. _____
NET CONTENTS _____

EPA REG. NO. 55947-80
EPA EST NO. 55947-CA-2

SANDOZ CROP PROTECTION CORPORATION
DES PLAINES, IL 60018

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DIRECTIONS FOR USE

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Since the active ingredient, Bacillus thuringiensis, is exempt from tolerance requirements, **JAVELIN** may be applied up to and on the day of harvest.

Mixing: Always shake or stir **JAVELIN** thoroughly before use. Add recommended amount of **JAVELIN** to 3/4 volume of required spray before filling tank. Maintain agitation. Do not allow dilute sprays to remain in the tank for more than 48 hours. **JAVELIN** is formulated to provide desirable coverage and adherence to leaf surfaces. Additional adjuvants, spreaders or stickers may be added to improve product performance, especially under heavy dew or rainy conditions. Combinations with commonly used insecticides, fungicides or other spray tank adjuvants are generally not deleterious to **JAVELIN** if the mix is used promptly. Before mixing in the spray tank, it is advisable to test physical compatibility by mixing all components in a small container in proportionate quantities.

GROUND APPLICATION

Unless otherwise stated, use recommended amount of **JAVELIN** in a minimum of 20 gallons of water per acre depending on type of crop and requirements of state regulations.

AERIAL APPLICATION

Use recommended amount of **JAVELIN** in at least 5 gallons of water per acre. Applications at higher water volumes have demonstrated improved control of targeted pests. Apply early morning or evening when air is calm.

GENERAL USE INSTRUCTIONS

For most consistent control apply at first sign of newly hatched worms (1st and 2nd instar larvae).

Reapply as necessary under a pest management program that includes close scouting.

If rapid knockdown of heavy worm or non-lepidopterous populations is necessary, include an effective contact insecticide in combination with JAVELIN.

For heavy worm infestations use the higher JAVELIN rate. During situations of dense foliage and/or rapid growth, increasing water carrier volumes will provide better crop coverage and improve JAVELIN performance.

RECOMMENDED APPLICATION RATES

VEGETABLE CROPS

CROP	INSECT	RATE QTS. /ACRE	ADDITIONAL INSTRUCTIONS
Artichokes	Artichoke Plume Moth	2	Apply in a minimum of 100 gal. of water per acre with a spray interval of 10 days or less
	Armyworm	2	
	Loopers	2	
Asparagus	Armyworm	1-2	Repeat as necessary to maintain control
Beans (Green, Lima, Mung)			
Broccoli	Diamondback Moth	1	
Brussel Sprouts	Green Cloverworm	1/2-1	
Cabbage	Hornworms	1/2-1	
Cardoon			
Carrots	Imported		
Cauliflower	Cabbageworm	1/2-1	
Celeriac	Loopers	3/4-1 1/2	
Celery			
Chick Peas			
Chinese Broccoli			
Chinese Cabbage	Salt Marsh	1-2	
Collards	Caterpillar		
Cucumbers			
Dry Bulb Onions			
Eggplants	European Corn	1-2	Also see Biogation
Garlic	Borer		
Green Onions			
Greens (Dandelion, Turnip, Mustard, Beet, China)			
Herbs (Basil, Cilantro, Dill, Oregano, Thyme, etc.)			
Horseradish			
Kale			
Kohl Rabi			
Leeks			
Lettuce (Endive, Romaine, Head Lettuce, Escarole Butter Crunch, Leaf, etc.)			
Melons (Cantaloupe, Crenshaw, Honeydew, Muskmelon, Watermelon, etc.)			
Okra			
Onions			

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RECOMMENDED APPLICATION RATES

VEGETABLE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Parsley			
Parsnips			
Peas			
Peppers			
Potatoes			
Pumpkins			
Radishes			
Rutabaga			
Salsify			
Spinach			
Squash (Summer and Winter)			
Sweet Corn			
Sweet Potatoes			
Swiss Chard			
Table Beets			
Tomatoes			
Turnip Root			
Watercress			
Yams			

RECOMMENDED APPLICATION RATES

FRUIT, NUT, & VINE CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Apples and Pears	Fruittree	1-2	Apply when newly hatched larvae appear and before leaves are rolled. Continue applying as a part of the normal cover spray program until pest is adequately controlled.
	Leafroller		
	Gypsy Moth	1-2	
	Redbanded		
	Leafroller	1-2	
	Tufted Apple		
	Budmoth	1-2	
	Variegated		
	Leafroller	1-2	
	Omnivorous		
Leafroller	1-2	Apply when caterpillars are actively feeding (2nd-4th instars).	
Tent Caterpillar	1-2		
Avocados	Loopers	2	Apply as necessary to maintain control.
	Orange Tortrix	1-2	
	Omnivorous		Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.
	Leafroller	1-2	
	Amorbia	2	Suppression only.
Bananas	Banana		Hawaii only. Use calibrated ground equipment with adequate water to apply to point of runoff.
	Skipper	1-2	
Citrus	Citrus Cutworm	1-2	Use 50-600 gallons of water per acre when using ground equipment and 10 gallons of water minimum per acre by air.
	Fruittree		
	Leafroller	1-2	
	Orangedog	1/2-1	
	Amorbia	2	Suppression only.

Blueberries	Blueberry	1-2	Apply by ground equipment only. Begin treatment as soon as possible after hatching. For leaf-rollers, apply before larvae are protected by leaf folds.
Caneberries	Leafroller		
Currants	Cherry Fruitworm	1/2-1	
Kiwi	Fruittree		
	Leafroller		
	Gypsy Moth	1-2	
	Green Fruitworm	1/2-1	
	Loopers	3/4-1 1/2	
	Orange Tortrix	1-2	
	Omnivorous Leafroller	1-2	
Grapes	Grape Leaf folder	1-2	Apply by ground equipment in up to 200 gallons total spray per acre to obtain thorough coverage of leaf surfaces. Start treating as soon as possible after hatching and before larvae are protected by leaf folds.
	Grapeleaf Skeletonizers	1-2	
	Omnivorous Leafroller	1-2	
	Orange Tortrix	1-2	
	Saltmarsh Caterpillar	1-2	
Almonds	Fall Webworm	1-2	For leafrollers, start treating as soon as possible after hatching and before larvae are protected by leaf folds.
Apricots	Filbert Webworm	1-2	
Cherries	Omnivorous		
Filberts	Leafroller	1-2	
Nectarines	Citrus Cutworm	1-2	
Peaches	Redhumped		
Pecans	Caterpillar	1-2	
Persimmons	Tent Caterpillar	1-2	
Plums			
Pomegranate			
Prunes			Apply when caterpillars are actively feeding (2nd to 4th instar).
Walnuts			
Melons (Also see Vegetables)	Rindworm Complex	1-2	Apply at first sign of hatch before larvae enter fruit. Repeat as necessary to maintain control.
Strawberries	Armyworm	2	Apply as necessary to maintain control. Use 20 gallons water minimum per acre when using ground equipment and 5 gallons water minimum per acre by aircraft.
	Gypsy Moth	1-2	
	Looper	3/4-1 1/2	
	Roughskinned Cutworm	1-2	
			In a tankmix with contact insecticides, rates as low as 1 qt. of Javelin may be used for the control of armyworm.

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RECOMMENDED APPLICATION RATES

FIELD CROPS

CROP	INSECT	RATE QTS. /ACRE	ADDITIONAL INSTRUCTIONS
Alfalfa (Hay and Seed)	Alfalfa Caterpillar	1/2-1	Under conditions of rapid plant growth and rapidly increasing armyworm populations (10 worms or greater per 180° sweep) use the highest rate. Against heterogenous worm populations, where 4th and 5th instars are present, and continuous egg laying, applications may provide variable control. Under these conditions, the addition of a contact insecticide in combination with Javelin is recommended. The addition of a spreader sticker to Javelin may provide improved performance
Sudan Grass	Armyworm	1 1/2-2	
Hay Crops & Other Forage Crops	Loopers	1-1 1/2	
Small Grains	Armyworm	1 1/2-2	
Hops	Loopers	3/4-1 1/2	Apply as necessary to maintain control
	Omnivorous Leaftier	1-2	
	Spotted Cutworm	1-2	Begin treatment as soon as possible after hatching and before larvae are protected by leaf folds.
	Oblique Banded Leafroller	1-2	
	Canola	Armyworm	
	Diamondback Moth	1	

RECOMMENDED APPLICATION RATES

FIELD CROPS

CROP	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Field Corn Pop Corn Seed Corn	Armyworm	1 1/2-2	Make initial application when economically damaging populations exist. Repeat as necessary to maintain control. Applications must be made to early instars prior to entering the ear or plant.
	Southwestern Corn Borer	2	Aids in control.
	European Corn Borer	2	Also see Biogation
Jojoba	Looper (Anacamptodes spp.)	1-2	Apply in a minimum of 50 gal. of water per acre by ground equipment or a minimum of 10 gal. of water by aerial equipment. Thorough coverage foliage is essential and dictates the minimum spray volumes necessary.
Dry Beans and Peas	Armyworms Green	1-2	Apply as necessary to maintain control.
Lentils	Cloverworm	1/2-1	
Mint			
Peanuts	Loopers	3/4-1 1/2	
Rice	Salt Marsh	1-2	
Safflower	Caterpillar		
Soybeans	Velvetbean	1/2-1	
Sugar Beets	Caterpillar		
Sunflower	Heliothis spp. Cutworm	2 1-2	Suppression only
Tobacco	Looper Tobacco Hornworm Tobacco Budworm	3/4-1 1/2 1/2-1 2	Apply as necessary to maintain control. Suppression Only

RECOMMENDED APPLICATION RATES

COTTON - Except Arizona and California

TIMING	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Early	Bollworm Tobacco Budworm	1-2	<p>For early season management of <u>Heliothis</u> species. Initiate applications when 50% of plants are at pinhead square cotton stage, independent of <u>Heliothis</u> egg and larval counts, or at 1st egg lay, whichever occurs earlier. Continue applications on 5-day spray interval up to synthetic pyrethroid spray window.</p> <p>For added control of <u>Heliothis</u>, tankmixing of Javelin with a labeled ovicide, such as, amitraz (0.125-0.25 lb. a.i./acre), methomyl (0.125 lb. a.i./acre), profenofos (0.25 lb. a.i./acre), or thiodicarb (0.125-0.25 lb. acre) is recommended. Read and follow all precautions and restrictions on tankmix product labels.</p>

RECOMMENDED APPLICATION RATES

COTTON

TIMING	INSECT	RATE QTS./ACRE	ADDITIONAL INSTRUCTIONS
Early and Mid-Season	Armyworm	2	Repeat as necessary throughout season to maintain control. If egg laying frequency indicates future moderate to heavy worm populations, time application spray to coincide with the 2nd instar larvae. During periods of high temperatures, worms will progress through 1st and 3rd instars very rapidly and early application timing is necessary for control. To be effective, Javelin spray must be deposited at the larval feeding site. When plant cover is dense and worms are feeding in the lower 2/3 portion of the plant, aerial application of Javelin may not provide adequate control.
	Cotton Leaf Perforator	1-2	
	Cotton Leafworm	1-2	
	Loopers	1-2	
	Saltmarsh Caterpillar	1-2	
	Bollworm	1-2	
Tobacco Budworm	1-2	For the suppression of light to moderate infestations, apply at first sign of egg laying or newly hatched worms (1st instar larvae).	

RECOMMENDED APPLICATION RATES

SHADE TREES, ORNAMENTALS (Including Roses)

PESTS	RATE QTS. /ACRE	ADDITIONAL INSTRUCTIONS
Spring and Fall Cankerworm	1/2-1	Apply when leaf expansion reaches 40% to 50% as infestation warrants.
Elm Spanworm	1/2-1	If eggs hatch over a long period of time, or if reinfestation occurs, spray about 14 days after first applications.
Test Caterpillar	1/2-1	Apply when most larvae are 3rd-4th instar. Also consider the opening of the bud cap to ensure foliage exposure.
Gypsy Moth	1-2	Apply after eggs have hatched and early instar larvae are feeding on exposed foliage.
Spruce Budworm	1-2	2
Jackpine Budworm	1/2-1	<u>TURF AND GRASS SEED PRODUCTION</u>
Douglas Fir Tussock Moth	1/2-1	Tropical Sodwebworm
Bagworm	1/2-1	Armyworm
California Oak Moth	1/2-1	Sodwebworm
Western Tussock Moth	1/2-1	2
Fruit Tree Leafroller	1/2-1	2
Mimosa Webworm	1/2-1	2
Redhumped Caterpillar	1/4-3/4	Repeat as necessary throughout season to maintain control.
Fall Webworm	1/4-1/2	
Armyworm	2	

GENERAL USE INSTRUCTIONS

For most consistent control apply at first sign of newly hatched worms (1st and 2nd instar larvae).

Reapply as necessary under a pest management program that includes close scouting.

If rapid knockdown of heavy worm or non-lepidopterous populations is necessary, include an effective contact insecticide in combination with Javelin.

For heavy worm infestations use the higher Javelin rate. During situations of dense foliage and/or rapid growth, increasing water carrier volumes will provide better crop coverage and improve Javelin performance.

BIOGATION - Center Pivot Irrigation Application for European and Southwestern Corn Borer in Field Corn (Not For Use in California)

APPLICATION INSTRUCTIONS

Rate - For control of European Corn Borer and suppression of Southwestern Corn Borer using center-pivot irrigation equipment, apply a mixture of 2 qts. of JAVELIN per acre and 1 quart of insectigation oil per acre.

Insectigation Oil and JAVELIN Mixture - JAVELIN should be added to the tank first, then the recommended amount of oil. (See Instructions For Diluted Application With Insectigation Oil).

For best performance, make application in 0.5 inch/acre or less.

Filter size should allow for smooth flow of JAVELIN from the tank to injector pump (18-20 mesh).

ATTENTION

INSTRUCTIONS FOR DILUTED APPLICATION WITH INSECTIGATION OIL¹

1. Pre-clean and flush nurse tank, lines, screen canister and pump with insectigation oil until they are water-free.
2. Use a 20 mesh screen or larger. A finer mesh screen may prevent the smooth flow of JAVELIN from the nurse tank into the pump.
3. Calibrate with insectigation oil.
4. Begin agitation.
5. Pour JAVELIN into tank and then the oil.

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ATTENTION

INSTRUCTIONS FOR DILUTED APPLICATION WITH INSECTIGATION OIL (continued)

6. Maintain agitation during application.
 - If you stop injecting the JAVELIN-oil mix due to rain, mechanical failure or etc., be sure to mix well and re-agitate uniformly before continuing application.
7. When you rinse the JAVELIN container, do so with insectigation oil. Avoid water contamination for oil-diluted applications.
8. Fine-tune calibration.
9. When application is complete, thoroughly flush the injection system and sprinkler system with insectigation oil.

Check label for Federal Chemigation requirements. Follow State and Local requirements for chemigation.

APPLICATION EQUIPMENT CAUTIONS

The active ingredient in JAVELIN will settle in the tank and injections lines; adequate agitation must be provided before and during the injection period. Use only in systems that apply uniformly and have appropriate check valves. Do not apply when windspeed favors drift. When application is complete, thoroughly flush the injection system and sprinkler lines.

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.

The pesticide injection pipeline should contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline should contain either a functional, normally closed solenoid-operated valve connected to the system interlock or a functional vacuum relief valve to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system should contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point when pesticide distribution is adversely affected.

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STORED SOYBEANS, GRAINS

(Indian Meal Moth, Almond Moth)

To control and prevent Indian Meal Moth and Almond Moth infestations of stored soybeans and grains, prepare a spray mixture which includes 1 gallon of water for every 6 oz. of JAVELIN. The spray mixture may be applied either by treating the top 4 inches of grain as it is being augered into storage (applying 0.6 pint of mixture per bushel in the grain stream), or by treating the surface of grain after it is in the bin. The Table below can be used as a guide in determining the total amount of JAVELIN needed according to the bin diameter or the number of bushels to be treated.

<u>Bin Diameter</u> <u>(ft.)</u>	<u>Surface Area</u> <u>(sq. ft.)</u>	<u>Bushels</u> <u>(to 4 in. depth)</u>	<u>JAVELIN</u> <u>Rate</u>
			<u>oz.</u>
8	50	13	2
12	113	30	7
16	201	53	12
20	314	84	17
24	452	120	26
28	615	163	36
32	804	214	46

To insure thorough coverage when making applications to the grain surface after it is in the bin, apply spray mixture in three (3) applications. Mix the grain with a scoop or rake to a depth of four (4) inches after each application.

Stored grain may be treated anytime, but for best results, treat grain at the time it is placed into storage or shortly thereafter, or in the early spring prior to egg-laying. Full season control is normally experienced. Re-treat only if reinfestation occurs.

For the protection of bagged grain, apply spray mixture to entire grain mass, and mix thoroughly prior to bagging. JAVELIN at 3/4 qt. per 10 gallons of water will treat approximately 100 bushels.

Treated grain may be used at any time after treatment.

GREENHOUSE APPLICATION

JAVELIN may also be used in the greenhouse and on flowers at a rate of 1-2 quarts per 100 gallons of water for control of listed insects on crops on this label.

STORAGE AND DISPOSAL

STORAGE

Store in a cool place. Activity may be impaired by storage at prolonged temperatures above 90° F. Protect from freezing.

PESTICIDE DISPOSAL

Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of according to Federal, State or Local procedures.

CONTAINER DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

LIMITED WARRANTY AND LIABILITY

Notice: Read this Limited Warranty and Liability before buying or using this product. If terms are not acceptable, return it at once, unopened.

It is critical that this product be used and mixed only as specified on the label. The laws of a State may make some or all of this paragraph inapplicable or may give you rights in addition to your rights hereunder. Except to the extent prohibited by applicable law, the exclusive remedy of the user or buyer and the limit of liability of this Company or any other Seller for any and all losses, personal injuries or damages resulting from the use of this product, shall be the purchase price paid by the user or buyer for the quantity of product involved. Except to the extent prohibited by State Law, there is no warranty, and this Company and other Sellers disclaim all liability for losses, personal injury or damages: (i) arising from any use of this product in a manner or for a purpose not recommended in its label directions, or from mixing this product before use with any substance except as recommended by the product's label; (ii) arising from handling or storage in violation of label instructions; (iii) for all indirect, special or consequential damages; and (iv) when not reported to this Company within one year of discovery. There are no implied warranties and no warranties of merchantability or fitness.