UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 12, 2015

Dr. Matthew Brooks
Director, Ag-Chem Consulting
LG Life Sciences
c/o Ag-Chem Consulting
12208 Quinque Ln.
Clifton, VA 20124

Subject: Notification per PRN 98-10 – Adding "Restricted Use Pesticide" below the Directions for Use as required under 40 CFR 156.10 (i)(2)(i)
Product Name: EsfenStar 8% EC
EPA Registration Number: 71532-21
Application Date: April 6, 2015
Decision Number: 503267

Dear Dr. Brooks:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, you may contact Jennifer Gaines at 703-305-5967 or via email at gaines.jennifer@epa.gov.

Sincerely,

Jennifer Urbanski, Ph.D.
Product Manager 04
Invertebrate & Vertebrate Branch 1
Registration Division (7505P)
Office of Pesticide Programs

RESTRICTED USE PESTICIDE
DUE TO TOXICITY TO FISH AND AQUATIC ORGANISMS.
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

EsfenStar 8% EC

Insecticide

For the control of insect pests on:

Field Crops
Vegetable Crops
Fruit Crops
Tree Nut Crops

NOTIFICATION
71532-21
The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:
05/12/2015

Contains the same active ingredient as Asana® XL insecticide.
Asana® XL insecticide is not manufactured or distributed by LG Life Sciences, Ltd.

Active Ingredient:	By Weight
Esfenvalerate (S)-cyano (3-phenoxyphenyl) methyl (S)-4-chloro-alpha-(1-methylethyl) benzeneacetate	8.4%
Inert Ingredients:	91.6%
TOTAL	100.0%

This product contains 0.66 lbs. active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

WARNING AVISO

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

EPA Reg. No. 71532-21

EPA Est. No. 5905-AR-01
5905-GA-01
5905-IA-01
44616-MO-01
71532-KOR-01

Net Contents:_____

Manufactured By:
LG Life Sciences, Ltd.
910 Sylvan Avenue
Englewood Cliffs, NJ 07632

FIRST AID	
IF SWALLOWED:	Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or a doctor. Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN If on skin, after drying apply vitamin E cream or oil if available. If not available, apply vegetable oil liberally over painful areas. The oil or cream may be used repeatedly until relief is achieved.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING. May be fatal if swallowed. Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. 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 E on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as Barrier Laminate or Neoprene Rubber or Nitrile Rubber or Viton.
- Shoes plus socks.
- Protective eyewear.

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

USER SAFETY RECOMMENDATIONS

USERS SHOULD:
- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENGINEERING CONTROL STATEMENTS

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 part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

ENVIRONMENTAL HAZARDS

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

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

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

It is a violation of Federal Law to use this product in a manner inconsistent with the 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 CER 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.

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.
- Chemical-resistant gloves, such as Barrier Laminate or Neoprene Rubber or Nitrile Rubber or Viton.
- Shoes plus socks.
- Protective eyewear.

GENERAL INFORMATION

EsfenStar 8% EC emulsifiable concentrate contains 0.66 pounds of active ingredient per gallon. For the applications given below, mix the required amount of EsfenStar 8% EC in sufficient diluent to provide uniform coverage (refer to Use Tables). EsfenStar 8% EC may be applied by ground or aerial application equipment. For aerial application use the following directions unless otherwise specified in this label: use a minimum of 2 gallons per acre (gpa) of water, except in tree and orchard crops use a minimum of 10 gpa.

Apply at the recommended 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

RESISTANCE

For resistance management, EsfenStar 8% EC is a group 3 insecticide. Repeated exclusive use of EsfenStar 8% EC, or other group 3 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. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state agricultural authorities for

details.

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

INTEGRATED PEST MANAGEMENT
It is recommended to use Integrated Pest Management (IPM} programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations roach 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.

SPRAY PREPARATION
Spray equipment must be clean and free of previous pesticide deposits before applying EsfenStar 8% EC.

TANK MIXING AND COMPATIBILITY
Unless directed otherwise in a specific crop section of this label, do not tank mix EsfenStar 8% EC with fungicides containing fentin hydroxide (triphenyltin hydroxide) such as "Super Tin" as crop injury may result.

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. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. 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. For best results, use of spray equipment having continuous agitation is recommended.

EsfenStar 8% EC may be tank mixed with herbicide products when insect populations require control concurrent with the need for weed control. Follow all herbicide and EsfenStar 8% EC label directions regarding proper usage.

EsfenStar 8% EC may be used in combination with 2,4-D herbicides providing that the following mixing directions are followed: 1) Do not apply the combination in a volume of water
less than 2 gallons per acre total spray. 2) Always mix EsfenStar 8% EC thoroughly in the total volume of spray water first, followed by the addition of the 2,4D herbicide. Because of the availability of a great variety of 2,4-D herbicide products, a test for physical compatibility should be conducted before field mixtures of a particular combination are made.

CHEMIGATION
Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) row, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. EsfenStar 8% EC may be premixed in a supply tank with water, oil, fertilizer, or other appropriate tank mixed agricultural chemicals. A pretest of physical compatibility for untried tank mixes is advised. Agitation may be necessary. Application should be in sufficient water and of sufficient duration to apply the recommended rate evenly to the entire treated area. No run-off can be permitted during chemigation. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result

from nonuniform distribution of treated water. Do not apply when wind speed favors drift beyond the area intended for treatment.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Do not connect an irrigation system (including greenhouse systems) used for EsfenStar 8% EC application to a public water system.

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. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut-off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

CROP ROTATION
ALL ROTATION CROPS MAY BE PLANTED IMMEDIATELY FOLLOWING LAST APPLICATION.

SPRAY RECOMMENDATIONS AND PRECAUTIONS
All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.

OBSERVE THE FOLLOWING PRECAUTIONS WHEN SPRAYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES, RESERVOIRS, RIVERS, PERMANENT STREAMS, MARSHES, OR NATURAL PONDS, ESTUARIES AND COMMERCIAL FISH FARM PONDS.

Do not apply by ground within 25 feet, or by air within 150 feet of lakes, reservoirs, rivers, permanent streams, marshes, or natural ponds, estuaries and commercial fish farm ponds, Increase the buffer zone to 450 feet when ultralow volume (ULV) application is made.

For aerial applications, the spray boom should be mounted on the aircraft so as to minimize drift caused by wing tip vortices. The minimum practical boom length should be used, and must not exceed 75% of wing span or rotor diameter.

Use the largest droplet size consistent with good pest control. Formation of very small droplets may be minimized by appropriate nozzle selection, by orientating nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.

Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided.

Make aerial or ground applications when the wind velocity favors on-target product deposition

(approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph.

Risk of exposure to aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.

Do not cultivate within 10 feet of the aquatic area so as to allow growth of a vegetative filter strip.

Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic areas. Avoid spraying during conditions of low humidity anchor high temperature.

Do not make aerial or ground applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

SPRAY TANK CLEANOUT

Immediately following application of EsfenStar 8% EC, thoroughly clean all mixing and spray equipment. Flush the tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens (clean these parts separately). Take all necessary precautions when cleaning equipment. Do not clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

SPECIFIC USES

FIELD CROPS

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Corn (field)*	Western Bean Cutworm	0.015-0.03	2.9-5.8	44-22	21
	Armyworm (True Armyworm) Black Cutworm (except CA) Chinch Bug Corn Earworm Corn Leaf Aphid Corn Rootworm (adult control) Cutworm Flea Beetle Grasshopper Japanese beetle (adult) (except CA) Oat Bird-Cherry Aphid Southwestern Corn Borer Stalk Borer	0.03-0.05	5.8-9.6	22-13	
	European Corn Borer	0.04-0.05	7.8-9.6	16-13	

Black Cutworm – EsfenStar 8% EC may be applied at 3.2 - 9.6 fl oz/acre (0.0165 - 0.05 lb ai/acre) for the control of black cutworm when applied at planting of corn (except CA).
Chinch Bug - Over the top sprays, as used for control of ear and stalk infesting corn pests, are not adequate for chinch bug control. It is very important that the spray be directed at the base of the plant through the use of drop nozzles or some other mechanism.
Corn Earworm - First application should be at or before silking. Repeat applications may be applied if economically damaging populations exist. Subsequent applications should be made at 3 - 5 day intervals until silking is completed.
Corn Leaf Aphid, Oat Bird-Cherry Aphid - For optimum results, direct the spray at the aphid population so as to achieve maximum coverage of the exposed insects. Aphids not contacted by the spray, such as in whorls and leaf axils, may not be adequately controlled.
Corn Rootworm (Adult) - Apply at the first sign of silk feeding
Cutworm - Applications for cutworm control may be applied before, during, or after planting as required to protect emerging or emerged corn seedlings.
European Corn Borer -
First brood: Spray while eggs are in the blackhead stage or before the larvae enter the whorl. Application by ground equipment is suggested. Good coverage of both upper and lower leaf surfaces is essential. This can be accomplished with drop nozzles over the row and on each side of the corn plant. Multiple applications may be required when egg laying is prolonged or where moderate to heavy populations are present. A higher rate is recommended for moderate to heavy populations. Proper coverage by ground equipment usually requires 20-30 gallons of carrier. Once larvae enter the whorl, foliar sprays will not provide adequate control.
Second brood: Make applications when sufficient egg masses are found. Spray when eggs are in the blackhead stage or starting to hatch. When egg laying is prolonged or a third generation is present, additional sprays may be required. A higher rate is recommended for moderate to heavy populations. Good coverage above, below, and in the ear zone is essential. This usually requires 2 - 3 gallons of carrier by air. If ground equipment is used, drop nozzles on each side of the plant will provide best coverage.
Grasshopper - For control of first and second instar grasshopper nymphal stages a rate range of 3.9 to 5.8 fluid ounces of product per acre (0.02 - 0.03 lb ai/A) can be used. Correct timing of spray applications to the first and second instar nymphal stages and thorough coverage is critical to achieve optimum control. For grasshopper nymph stages larger than second instar, use EsfenStar 8% EC at use rates of 5.8 to 9.6 fluid ounces of product per acre (0.03 - 0.05 lb ai/A).
Southwestern Corn Borer - For moderate to heavy infestations, higher rates (0.036-0.05 lb ai per acre) are recommended.
Stalk Borer, Flea Beetle - Application must be made early in migration from grassy areas to corn, before borers enter the plant.
Western Bean Cutworm - Apply before larvae enter the ear.

*Do not apply more than 0.25 lbs. a.i. per acre per season.

<table>
<tr><th rowspan="2">Crop</th><th rowspan="2">Insect</th><th colspan="2">Application Rate</th><th rowspan="2">Acres treated per gal of EsfenStar 8% EC</th><th rowspan="2">Last Application (days to harvest)</th></tr>
<tr><th>lb. ai/acre</th><th>fl. oz./acre</th></tr>
<tr><td rowspan="3">Corn (field)
At Plant</td><td>Cutworm</td><td>0.0023 lbs. a.i. per 1,000 feet of row</td><td>0.45 fl. oz. per 1,000 feet of row</td><td>-</td><td rowspan="3">21</td></tr>
<tr><td colspan="4">Apply as an in-furrow, T-band, or band treatment using a minimum 4” band. Use the table below to determine the pounds active ingredient and fluid ounces of EsfenStar 8% EC applied at 0.0023 lbs. ai per 1000 feet or row for various row spacings.
In furrow Applications: Apply into the seed furrow through spray nozzles behind the planter furrow openers and in front of the press wheel.
Banded Applications: Apply at planting as a 4-7 inch T-band sprayed across the open seed furrow between the furrow openers and the press wheels or as a band application behind the press wheel.
Apply a minimum spray volume of 3 gallons per acre.
Do not exceed 0.05 lbs. a.i. per acre per season as an at-plant application.
Do not apply more than 0.25 lbs. a.i. per acre per season including at-plant plus foliar applications of EsfenStar 8% EC.</td></tr>
<tr><td colspan="4"><table>
<tr><td>Row Spacings (inches)</td><td>40”</td><td>38”</td><td>36”</td><td>30”</td></tr>
<tr><td>Linear Ft/A</td><td>13.068</td><td>13.756</td><td>14.520</td><td>17.424</td></tr>
<tr><td>EsfenStar 8% EC Lbs. ai/A</td><td>0.03</td><td>0.032</td><td>0.033</td><td>0.04</td></tr>
<tr><td>EsfenStar 8% EC Fl. oz/A</td><td>5.8</td><td>6.2</td><td>6.4</td><td>7.8</td></tr>
</table></td></tr>
<tr><td rowspan="2">Corn (Pop)</td><td colspan="4">For specific insect control recommendations refer to Field Corn (above).
Follow directions carefully.</td><td rowspan="2">1</td></tr>
<tr><td colspan="4">Multiple applications and/or shortened intervals between sprays must be used to insure proper insect control. Do not apply more than 0.5 lbs. a.i. per acre per season.</td></tr>
<tr><td rowspan="2">Corn (Seed)</td><td colspan="4">For specific insect control recommendations refer to Field Corn (above).
Follow directions carefully.</td><td rowspan="2">1</td></tr>
<tr><td colspan="4">Multiple applications and/or shortened intervals between sprays must be used to insure proper insect control. Do not apply more than 0.25 lbs. a.i. per acre per season.</td></tr>
</table>

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Cotton	Cotton Leaf Perforator	0.03	5.8	22	21
	Beet Armyworm* Black cutworm (except CA) Boll Weevil Cabbage Looper Cotton Aphid* Cotton Bollworm Cotton Leafworm Cutworms Fleahoppers Grasshoppers Green Stink Bug (except CA) Leafhoppers Lygus Bugs Pink Bollworm Plant Bugs Saltmarsh Caterpillar Southern Green Stink Bug (except CA) Thrips (on seedling cotton) Tobacco Budworm Whitefly*	0.03-0.05	5.8-9.6	22-13	
	NOTE: For light infestations of the above insects	0.02	3.9	33	
	*Aids in control. May be applied in water or nonvolatile vegetable oils. When applying EsfenStar 8% EC in an oil carrier, apply a total spray volume of at least 1 qt. per acre. When applying EsfenStar 8% EC in a water carrier, apply at least 1 gal. per acre by air (at least 3 gal per acre in Arizona and 5 gal per acre in California) or 4 gal per acre by ground. Do not apply more than 0.5 lbs. a.i. per acre per season. Do not graze livestock on treated fields or feed treated trash. Black Cutworm - EsfenStar 8% EC may be applied at 3.2 – 9.6 fl oz/acre (0.0165 - 0.05 lb ai/acre) for the control of black cutworm when applied at planting of cotton (except CA). Boll Weevil - To control Boll Weevil infestations, a 3 to 5 day interval between applications may be necessary. Heliothis spp. - EsfenStar 8% EC can provide contact ovicidal effect on Heliothis spp. eggs when applied according to label directions for control of tobacco budworm; application should be timed to correspond with peak egg deposition to achieve maximum ovicidal effect. Use on this pest stage (egg) is not registered in California. Do not make more than a total of 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Peanuts	Corn Earworm Potato Leafhopper Red-necked Peanut Worm Velvetbean Caterpillar	0.015-0.03	2.9-5.8	44-22	21
	Beet Armyworm* Cutworms Granulate Cutworm Grasshoppers	0.03-0.05	5.8-9.6	22-13	
	Fall Armyworm* Lesser Cornstalk Borer*	0.05	9.6	13	
	*Aids in control. Do not feed or graze livestock on treated vines. Do not apply more than 0.15 lbs. a.i. per acre per season.				
Sorghum (Grain) Except CA	Sorghum Midge	0.015-0.03	2.9-5.8	44-22	21
	Black Cutworm Chinch Bugs Corn Earworm (headworm) Cutworms	0.03-0.05	5.8-9.6	22-13	
	Do not apply more than 0.15 lbs. a.i. per acre per season. When applying in nonvolatile vegetable oils use a total spray volume of 1 or more qts. per acre. Black Cutworm – EsfenStar 8% EC may be applied at 3.2-9.6 fl. oz/acre (0.0165-0.05 lb. ai/acre) for the control of black cutworm when applied at planting of sorghum. Chinch Bug Control - For optimum results, spray should be directed at base of plants.				
Soybean	Green Cloverworm Mexican Bean Beetle Potato Leafhopper Saltmarsh Caterpillar Velvetbean Caterpillar Woollybear Caterpillar	0.015-0.03	2.9-5.8	44-22	21
	Bean Leaf Beetle Beet Armyworm* Cabbage Looper Corn Earworm Cutworms Grasshoppers Green Stink Bug (except CA) Japanese Beetle (adult) Southern Green Stink Bug Soybean Aphid (except CA) Three-cornered Alfalfa Hopper	0.03-0.05	5.8-9.6	22-13	
	Grasshopper - For control of first and second instar grasshopper nymphal stages a rate range of 3.9 to 5.8 fluid ounces of product per acre (0.02-0.03 lb. ai/A) can be used. Correct timing of spray applications to the first and second instar nymphal stages and thorough coverage is critical to achieve optimum control. For grasshopper nymph stages larger than second instar, use EsfenStar 8% EC at use rates of 5.8 to 9.6 fluid ounces of product per acre (0.03-0.05 lb. ai/A). Soybean Aphid – EsfenStar 8% EC provides control of soybean aphid, however under certain conditions such as rapid aphid population growth, or extremely high populations, a tank mixture may be considered. EsfenStar 8% EC can be tank mixed with other insecticides such as chlorpyrifos (e.g. "Lorsban") or methomyl (e.g. DuPont™ Lannate®) to achieve rapid knockdown of soybean aphid. Because Lannate® is a fast acting contact insecticide, best results follow direct spraying of the target insect. When preparing a tank mixture, read and follow the label instructions for all products in the mixture regarding restrictions, requirements and proper usage. Use sufficient water to obtain thorough, uniform coverage. For aerial application use a minimum of 2 gallons per acre, and for ground application use a minimum of 10 gallons per acre. *Aids in control. When applying in nonvolatile vegetable oils, use a total spray volume of at least 1 qt. Do not feed or graze livestock on treated fields. Do not apply more than 0.2 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Sugar Beets	Beet Armyworm* Beet Webworm Cabbage Looper Cutworms Flea Beetle (except CA) Grasshoppers Leafhoppers Saltmarsh Caterpillar Sugar Beet Root Maggot (adult) (except CA)	0.03-0.05	5.8-9.6	22-13	21
	Grasshopper - For control of first and second instar grasshopper nymphal stages a rate of 3.9 to 5.8 fluid ounces of product per acre (0.02 - 0.03 lb. ai/A) can be used. Correct timing of spray applications to the first and second instar nymphal stages and thorough coverage is critical to achieve optimum control. For grasshopper nymph stages larger than second instar, use EsfenStar 8% EC at use rates of 5.8 to 9.6 fluid ounces of product per acre (0.03 - 0.05 lb ai/A). *Aids in control. Do not apply more than 0.15 lbs. a.i. per acre per season. Apply with ground or air equipment using sufficient water to provide uniform coverage (minimum of 2 gal of water per acre).				
Sugar Beets At Plant	Cutworm	0.0023 lbs. ai per 1,000 ft of row	0.45 fl. oz. per 1,000 ft. of row		21
	Apply as an in-furrow, T-band, or band treatment using a minimum 4" band. Use the table below to determine the pounds active ingredient and fluid ounces of EsfenStar 8% EC applied at 0.0023 lbs. a.i. per 1000 feet of row for various row spacings. In-Furrow Applications: Apply into the seed furrow through spray nozzles, behind the planter furrow openers and in front of the press wheel. Banded Applications: Apply at planting as a 4-7 inch T-band sprayed across the open seed furrow between the furrow openers and the press wheels or as a band application behind the press wheel. Apply a minimum spray volume of 3 gallons per acre. Do not exceed 0.05 lbs. a.i. per acre per season as an at-plant application. Do not apply more than 0.25 lbs. a.i. per acre per season including at-plant plus foliar applications of EsfenStar 8% EC.				

Row Spacing (inches)	40"	38"	36"	30"	22"
Linear Ft/A	13,068	13,756	14,520	17,424	23,760
EsfenStar 8% EC Lbs. ai/A	0.03	0.032	0.033	0.04	0.05
EsfenStar 8% EC Fl oz/A	5.8	6.2	6.4	7.8	9.6

Sugarcane	Sugarcane Borer	0.03-0.05	5.8-9.6	22-13	21
	Do not apply more than 0.2 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Sunflower	Sunflower Beetle (except CA)	0.0075-0.03	1.45-5.8	88-22	28
	Banded Sunflower Moth Beet Armyworm* Cutworms Grasshoppers Heliothis (complex) Leafhoppers Sunflower Maggot Sunflower Moth Sunflower Seed Weevil Sunflower Stem Weevil	0.03-0.05	5.8-9.6	22-13	
	Grasshopper - For control of first and second instar grasshopper nymphal stages a rate range of 3.9 to 5.8 fluid ounces of product per acre (0.02 - 0.03 lb ai/A) can be used. Correct timing of spray applications to the first and second instar nymphal stages and thorough coverage is critical to achieve optimum control. For grasshopper nymph stages larger than second instar, use EsfenStar 8% EC at use rates of 5.8 to 9.6 fluid ounces of product per acre (0.03 - 0.05 lb ai/A). *Aids in control. Do not apply more than 0.2 lbs. a.i. per acre per season.				

FRUITS

DILUTE SPRAY: Apply specified dosage per 100 gallons of water in a uniform spray applied to the point of drip with conventional ground equipment. Do not exceed maximum number of gallons per acre indicated.

NOTE: In order to apply the correct amount of EsfenStar 8% EC insecticide to your orchard you must know the number of gallons of water needed to spray one acre of your trees to the point of drip. If you do not already know this gallonage, you should conduct a test to determine it. If you do not know how to conduct such a test with your equipment, you should ask for assistance from your equipment dealer or State Extension specialist.

CONCENTRATE SPRAY: Apply specified dosage per acre in no less than 30 gals. of water per acre by ground equipment.

FOR AERIAL APPLICATION IN TREE AND ORCHARD CROPS: Use a minimum of 10 gallons of water per acre. When applying EsfenStar 8% EC by air, consult your Cooperative Extension Service for further application guidelines.

Crop	Insect	Application Rate			Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre	fl. oz /100 gal.		
Apples	Apple Aphid Apple Maggot Codling Moth Green Fruitworm Lesser Appleworm Mullein Plant Bug (except CA) Oblique Banded Leafroller Oriental Fruit Moth Periodical Cicada Plant Bugs (Tarnished Plant Bug, Stink Bugs) Plum Curculio Red - Banded Leafroller Rosy Apple Aphid San Jose Scale (fruit infestations only) Tentiform Leaf Miner Tufted Apple Bud Moth Variegated Leafroller White Apple Leafhopper	0.025-0.075	4.8-14.5	2.0-5.8	26-9	21
	Apple Ermine Moth (ID, OR & WA only)	-	-	3.0	-	
	Tufted Apple Bud Moth (overwintering) (MD, NC, NJ, PA, VA, WV only)	0.04-0.075	8.0-14.5	-	16-9	
	Do not feed or graze livestock on treated orchard floors. Do not apply more than 0.525 lbs. a.i. per acre per season. For dilute spray apply 200 - 600 gals per acre, but do not apply more than 14.5 fl. oz. of EsfenStar 8% EC per acre per treatment. Apple Ermine Moth-Apply with 2 to 4 gallons of superior spray oil in 100 gallons of water in a spray-to-wet application to insure thorough coverage of all stems and branches where Apple Ermine Moth hibernacula are found. When using on apple nursery stock, do not treat bundled plants since it is difficult to achieve a full coverage application which could result in less than complete control. Make first application in the fall after 90% of leaf fall has occurred-usually after October 15. Make a second application 7 to 14 days later. Note: Overwintering larvae do not die until approximately 30 days after application. Plant Bug, Rosy Apple Aphid Control-Time of application is critical in achieving control. Use prebloom and post bloom spray timings recommended by State Extension Services. Tufted Apple Bud Moth (overwintering)--For use on apple for the control of overwintering larvae of the tufted apple bud moth with directed ground application to the apple orchard floor. Make one application of EsfenStar 8% EC at either pink stage of apple or at petal fall stage of apple. Use the lower rate on small larvae (pink stage of apple) and/or on lower populations. Use the higher rate on larger larvae (petal fall stage of apple) and/or on moderate to high populations. Apply specified dosage per acre to the orchard floor in no less than 30 gals of water per acre by ground to obtain uniform coverage. Apply treatment in a band from trunk to drip line to allow coverage of areas where overwintering tufted apple bud moth are found. Beneficial Insects: Application of EsfenStar 8% EC to the groundcover at the pink stage of apple development may be toxic to overwintering *Stethorus punctum. S. punctum* is a coccinellid insect and the major predator of spider mites in the MD, NC, NJ, PA, VA and WV fruit growing areas. This predator overwinters in the same areas of the orchard groundcover as the tufted apple bud moth and moves into apple trees from mid-April through mid-May when maximum daily temperatures exceed 68° F. Emergence from the groundcover is 20-70% complete by the pink stage and 90- 100% complete by petal fall on the apple cultivar Yorking.					

Crop	Insect	Application Rate			Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre	fl. oz /100 gal.		
Blueberry (except CA)	Aphids (NJ only) Blueberry Spanworm Cherry Fruitworm* Cranberry Fruitworm Cranberry Weevil* Grasshoppers Japanese Beetle Leafhoppers Red Striped Fireworm*	0.025-0.05	4.8-9.6	-	26-13	14
	Blueberry Maggot Black Vine Weevil (adult control) Strawberry Root Weevil (adult control) (OR, WA only)	0.05	9.6	-	13	
	*Aids in control. Do not apply more than 0.2 lbs. a.i. per acre per season (38.4 fluid ounces of product per acre per season). Use of ground application is recommended; for ground application use a minimum of 50 gals. water per acre. Do not apply this product through any type of irrigation system. Note: EsfenStar 8% EC can act as a bee repellent, do not apply within 7 days of pollination. Apply as a pre-bloom or post-bloom spray only. Black vine weevil & strawberry root weevil (adult control)(OR, WA only) - Look for leaf notching beginning in late May to early June as the first sign of weevil feeding. Also check for adults on or just below the soil surface around the base of plants. Apply EsfenStar 8% EC within two to three weeks of first sign of infestation. Do not apply by air; apply by ground using a minimum of 50 gallons of water per acre. Direct spray to provide full coverage of foliage and soil area around base of plants. Best results are from applications made after dark when temperatures are warm and weevils are actively feeding. Root weevils emerge over a several week period, make additional applications when signs of new feeding appear.					

Crop	Insect	Application Rate			Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre	fl. oz /100 gal.		
Caneberries (blackberries, boysen-berries, dewberries, loganberries, raspberries, youngberries, and varieties of these) (except CA)	Aphids Oblique Banded Leafroller Orange Tortrix	0.025-0.05	4.8-9.6	-	26-13	7
	Adult Root Weevils* (OR & WA only)	0.05	9.6	-	13	
	*Aids in control. Do not apply by air. Do not apply more than 0.15 lbs. a.i. per acre per season. Do not apply this product through any type of irrigation system. Note: EsfenStar 8% EC can act as a bee repellent, do not apply within 7 days of pollination. Apply as a pre-bloom or post-bloom spray only. Remove bees prior to application. For maximum safety to bees, apply EsfenStar 8% EC in the evening after sunset. Adult Root Weevils (OR, WA only) - Look for leaf notching beginning in late May to early June as the first sign of weevil feeding. Also check for adults on or just below the soil surface around the base of plants. Apply EsfenStar 8% EC within two to three weeks of infestation. Apply by ground using a minimum of 50 gallons of water per acre. Direct spray to provide full coverage of foliage and soil area around base of plants. Best results are from applications made after dark when temperatures are warm and weevils are actively feeding. Root weevils emerge over a several week period, make additional applications when signs of new feeding appear. Oblique Banded Leafroller, Orange Tortrix and Aphids - Apply as a full coverage spray in a minimum of 50 gallons of water with ground equipment only. Apply no earlier than 12 days before harvest and no later than 7 days before harvest.					
Kiwifruit	Boxelder Bug (suppression only)	0.05	9.6	-	13	14
	Spray in sufficient water for thorough coverage. A maximum of 7 applications is allowed per season (total of 0.35 lbs. a.i. per acre/season) with a minimum of 7 days between treatments.					
Pear	Codling Moth Green Fruitworm Leafrollers Pear Psylla Pear Slug Periodical Cicada Plum Curculio	0.025-0.075	4.8-14.5	2.0-5.8	26-9	28
	Do not apply more than 0.375 lbs. a.i. per acre per season. Do not apply more than 0.225 lbs. a.i. per acre between bloom and harvest. Do not feed or graze livestock on treated orchard floors. For dilute spray apply 200-600 gals. per acre, but do not apply more than 14.5 fl. oz. of EsfenStar 8% EC per acre per treatment.					
Pear (Dormant)	Pear Psylla	0.05-0.1	9.6-19.2	7.3-12.8	13.2-6.6	28
	Apply during dormant to prebloom (white bud) stage only. Do not apply more than 0.2 lbs. a.i. per acre per season. Do not graze orchard floor. For dilute spray apply 150-250 gals per acre but do not apply more than 19.2 fl. oz. of EsfenStar 8% EC per acre per treatment.					

Crop	Insect	Application Rate			Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre	fl. oz /100 gal.		
Stone Fruits (including apricots, cherries, nectarines, peaches, plums, prune plums)	American Plum Borer Black Cherry Aphid Cherry Fruit Fly Green Fruitworm Leafhoppers Leafrollers Lesser Peach Tree Borer Oriental Fruit Moth Peach Tree Borer Peach Twig Borer Periodical Cicada Plant Bugs (Tarnished Plant Bug, Stink Bugs) Plum Curculio Western Cherry Fruit Fly	0.025-0.075	4.8-14.5	2.0-5.8	26-9	14
	Peach Twig Borer (Dormant) (CA only)	0.04-0.075	8.0-14.5	3.1-5.8	16-9	
	Tufted Apple Bud Moth (overwintering) (Peach only) (MD, NC, NJ, PA, VA and WV only)	0.04-0.075	8.0-14.5	-	16-9	
	Do not apply more than 0.375 lbs. a.i. per acre per season with no more than 0.3 lbs. a.i. per acre per season between bloom and harvest. For dilute spray apply 200 - 400 gals per acre, but do not apply more than 14.5 fl. oz of EsfenStar 8% EC per acre per treatment. Do not graze livestock on treated orchard floors. Peach Tree Borer, American Plum Borer, Lesser Peach Tree Borer Control - Apply as directed trunk and scaffold limb spray. Thorough coverage of trunk and scaffold limbs is required. Peach Twig Borer (Dormant)-Make application with an EPA registered dormant oil; for specific recommendations on use of oil consult manufacturer's label. For best performance, ground application equipment is recommended. Peach Twig Borer, Plum Curculio, Oriental Fruit Moth, Cherry Fruit Fly, Western Cherry Fruit Fly, Leafrollers, Black Cherry Aphid, Periodical Cicada Control - Apply by ground sprayer to achieve thorough coverage of all aerial portions of the tree. Plant Bug Control - Time of application is critical in achieving control. Use prebloom and postbloom spray timings recommended by State Extension Services. Tufted Apple Bud Moth (overwintering)-For use on peach for the control of overwintering larvae of the tufted apple bud moth with directed ground application to the peach orchard floor. Make one application of EsfenStar 8% EC at either popcorn stage of peach or at shuck split stage of peach. Use the lower rate on small larvae (popcorn stage of peach) and/or on lower populations. Use the higher rate on larger larvae (shucksplit stage of peach) and/or on moderate to high populations. Apply specified dosage per acre to the orchard floor in no less than 30 gals of water per acre by ground to obtain uniform coverage. Apply treatment in a band from trunk to drip line to allow coverage of areas where overwintering tufted apple bud moth are found. Beneficial lnsects: Application of EsfenStar 8% EC to the groundcover at the popcorn stage of peach development may be toxic to overwintering Stethorus punctum. S. punctum is a coccinellid insect and the major predator of spider mites in the MD, NC, NJ, PA, VA and WV fruit growing areas. This predator overwinters in the same areas of the orchard groundcover as the tufted apple bud moth and moves into peach trees from mid-April through mid-May when maximum daily temperatures exceed 68° F. Emergence from the groundcover is 90-100% complete by shucksplit. Shucksplit is the preferred timing to minimize predator toxicity.					

TREE NUT CROPS

DILUTE SPRAY: Apply specified dosage per 100 gallons of water in a uniform spray applied to the point of drip with conventional ground equipment. Do not exceed maximum number of gallons per acre indicated.

NOTE: In order to apply the correct amount of EsfenStar 8% EC insecticide to your orchard you must know the number of gallons of water needed to spray one acre of your trees to the point of drip. If you do not already know this gallonage, you should conduct a test to determine it. If you do not know how to conduct such a test with your equipment, you should ask for assistance from your equipment dealer or State Extension specialist.

CONCENTRATE SPRAY: Apply specified dosage per acre in no less than 30 gals. of water per acre, by ground equipment.

FOR AERIAL APPLICATION IN TREE AND ORCHARD CROPS: Use a minimum of 10 gallons of water per acre. When applying EsfenStar 8% EC by air, consult your Cooperative Extension Service for further application guidelines.

Crop	Insect	Application Rate			Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre	fl. oz /100 gal.		
Almonds	Navel Orangeworm Peach Twig Borer Peach Twig Borer (Dormant) (CA only)	0.05-0.1	9.6-19.2	7.3-12.8	13.2-6.6	21
	Do not apply more than 0.2 lbs. a.i. per acre per season. Do not graze livestock on treated orchard floors. Peach Twig Borer (Dormant)-Make application with an EPA registered dormant oil; for specific recommendations on use of oil consult manufacturer's label. For best performance, ground application equipment is recommended.					
Filberts	Filbertworm Oblique Banded Leafroller	0.05-0.1	9.6-19.2	7.3-12.8	13.2-6.6	21
	Make first application after emergence of filbert worm moths in early summer. Do not apply a second treatment earlier than three weeks after the first. Do not apply more than 0.2 lbs. a.i. per acre per season. For dilute spray, apply 200 - 400 gals. per acre, but do not apply more than 19.2 fl. oz. of EsfenStar 8% EC per acre per treatment. Do not graze livestock on treated orchard floors.					
Pecans	Hickory Shuckworm Pecan Aphids Pecan Nut Casebearer Pecan Leaf Phylloxera Pecan Spittlebug Pecan Stem Phylloxera Pecan Weevil	0.025-0.075	4.8-14.5	2.0-5.8	26-9	21
	Do not feed or graze livestock on treated orchard floors. Do not apply more than 0.3 lbs. a.i. per acre per season. For dilute spray apply 200-600 gals per acre, but do not apply more than 14.5 fl. oz. of EsfenStar 8% EC per acre per treatment. EsfenStar 8% EC may be tank-mixed with fungicides containing fentin hydroxide (triphenyltin hydroxide) such as "Super Tin". Refer to the EsfenStar 8% EC and fentin hydroxide (triphenyltin hydroxide) labels for appropriate rates of the individual products for controlling the respective pests. Phylloxera - Correct timing of spray applications is critical in achieving optimum control of leaf and stem phylloxera. Consult local spray recommendations for correct times of application.					
Walnuts	Codling Moth Navel Orangeworm Walnut Aphid Walnut Husk Ply	0.05-0.1	9.6-19.2	4.0	13-6	21
	Do not apply more than 0.2 lbs. a.i. per acre per season. For dilute sprays, apply 200 - 400 gals per acre. Do not feed or graze livestock on treated crop floors. NOTE: Use of baits in Walnut Husk fly sprays is recommended where endorsed by local Agricultural Extension Service.					

VEGETABLE CROPS

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Artichoke	Artichoke Plume Moth	0.03-0.05	5.8-9.6	22-13	1
	Do not apply more often than each 14 days. Apply no more than 0.15 lbs. a.i. per acre between bud formation and harvest of an individual fruit. Apply in a minimum of 10 gallons per acre by air and 50 - 200 gallons per acre by ground (use sufficient water to obtain coverage without excessive runoff).				
Beans, Dry (Including adzuki bean, blackeyed pea, broad bean (dry), chickpea, cow pea, crowder pea, field bean, kidney bean, lima bean (dry), mung bean, navy bean, pinto bean, southern pea, tepary bean) Peas, Dry Lentils	Leafhoppers (except CA) Mexican Bean Beetle Saltmarsh Caterpillar	0.015-0.03	2.9-5.8	44-22	21
	Beet Armyworm* Cabbage Looper Corn Earworm Corn Rootworm (Adults) Cowpea Curculio Cucumber Beetle Cutworms Grasshoppers Green Cloverworm Leafhoppers Painted Lady Butterfly (larvae) Pea Aphid Potato Leafhopper Soybean Aphid (except CA) Velvetbean Caterpillar Western Bean Cutworm	0.03-0.05	5.8-9.6	22-13	
	Pea Leaf Weevil (ID, OR & WA only) Pea Weevil (ID, OR & WA only)	0.025-0.05	4.8-9.6	26-13	
	*Aids in control. Do not apply more than 0.2 lbs. a.i.. per acre per season. Do not feed or graze livestock on treated vines. Pea Weevil & Pea Leaf Weevil (ID, OR & WA) – Time of application is critical in achieving control of pea weevil. For optimum results, apply at bloom prior to detecting adult pea weevils. Once adult pea weevil populations reach a level of 2 or more adults per 25 sweeps, control may be reduced. Grasshopper - For control of first and second instar grasshopper nymphal stages a rate of 3.9 to 5.8 fluid ounces of product per acre (0.02 - 0.03 lb. ai/A) can be used. Correct timing of spray applications to the first and second instar nymphal stages and thorough coverage is critical to achieve optimum control. For grasshopper nymph stages larger than second instar, use EsfenStar 8% EC at use rates of 5.8 to 9.6 fluid ounces of product per acre (0.03 - 0.05 lb ai/A).				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Beans, Snap Also known as: (blue lake, bush, common, edible-podded, filet, flageolet, French, French horti-ultural, frijoles comunes, garden, green, haricot, haricot commun, Italian, judia comum, Kentucky wonder, magic, pole, romano, string, succulent, vainica, wax)	Leafhoppers (except CA) Mexican Bean Beetle Saltmarsh Caterpillar	0.015-0.03	2.9-5.8	44-22	3
	Beet Armyworm* Cabbage Looper Corn Earworm Corn Rootworm (adults) Cucumber Beetle Cucumber Beetle (adults) Cutworm (seedling spray) European Corn Borer Flea Beetle Grasshoppers Green Cloverworm Leafhopper Leafminer (Guam only) Pea Aphid Potato Leafhopper Soybean Aphid (except CA) Velvet Bean Caterpillar Western Bean Cutworm	0.03-0.05	5.8-9.6	22-13	
	*Aids in control. Do not apply more than 0.2 lbs. a.i. per acre per season. Do not allow livestock to graze treated bean fields. Do not harvest treated bean vines for livestock forage, fodder, or hay.				
Broccoli (including chinese broccoli), Cabbage, Cauliflower, Chinese Cabbage (tight headed varieties only, e.g. Napa cabbage)	Imported Cabbageworm	0.015-0.03	2.9-5.8	44-22	3
	Alfalfa Looper Beet Armyworm* Cabbage Looper Cutworm Flea Beetle Grasshoppers	0.03-0.05	5.8-9.6	22-13	
	*Aids in control. Do not apply more than 0.4 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Carrots	Aster Leafhopper Cutworms Leafhoppers	0.03-0.05	5.8-9.6	22-13	7
	Carrot Weevil	0.05	9.6	13	
	Do not apply more than 0.5 lbs. a.i. per acre per season. For aerial application apply in a minimum of 5 gals. water per acre. Thorough spray coverage of crown area is essential. Use of ground application is recommended. Carrot Weevil - Begin treatment when weevils become active.				
Collards	Alfalfa Looper Beet Armyworm* Cabbage Looper Cutworm Flea Beetle Grasshopper Imported Cabbageworm	0.03-0.05	5.8-9.6	22-13	7
	*Aids in control. Do not feed livestock on treated plant parts. Do not apply more than 0.2 lbs. a.i. per acre per season. For aerial application apply in a minimum of 5 gal water per acre.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Cucumber, Melons (cantaloupe, honeydew melons, muskmelon, watermelon), Pumpkin, Squash (summer, winter)	Cabbage Looper Corn Earworm Cucumber Beetle (adults) Cutworms (seedling spray) Grasshoppers Leafhoppers Pickleworm Plant Bugs (Lygus Bugs, Stink Bugs) Rindworms Squash Bug Squash Vine Borer	0.03-0.05	5.8-9.6	22-13	3
	Do not apply more than 0.25 lbs. a.i. per acre per season.				
Eggplant	Colorado Potato Beetle Corn Earworm European Corn Borer Flea Beetles Loopers	0.03-0.05	5.8-9.6	22-13	7
	Apply when insects are observed or when insect damage is observed. Repeat applications At 7 to 10 day intervals to achieve control. Do not apply more than 0.35 lbs. a.i. per acre per season.				
Kohlrabi	Cabbage Looper	0.03-0.05	5.8-9.6	22-13	3
	Do not apply more than 0.4 lbs. a.i. per acre per season.				
Lentils	See “Beans, Dry”				
Lettuce, Head AZ CA, CO, FL, NM & TX ONLY	Alfalfa Looper Beet Armyworm* Cabbage Looper Heliothis spp.	0.025-0.05	4.8-9.6	26-13	7
	*Aids in control. Do not apply more than 0.35 lbs. a.i. per acre per season.				
Mustard Greens	Cabbage Looper Imported Cabbageworm	0.05	9.6	13	7
	Do not apply more than 0.2 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Okra (FL only)	Cabbage Looper Corn Earworm Southern Armyworm	0.03-0.05	5.8-9.6	22-13	1
Peas, Dry	See "Beans, Dry"				
Peas, Green	Green Cloverworm Pea Aphid	0.015-0.03	2.9-5.8	44-22	3
	Alfalfa Caterpillar Alfalfa Looper Armyworm Cabbage Looper Celery Looper Corn Earworm Cutworms Imported Cabbageworm	0.03-0.05	5.8-9.6	22-13	
	Pea Leaf Weevil (ID, OR & WA only) Pea Weevil (ID, OR & WA only)	0.025-0.05	4.8-9.6	26-13	
	Do not apply more than 0.1 lbs. a.i. per acre per season. Do not feed treated pea vines to livestock. Pea Weevil & Pea Leaf Weevil (ID, OR & WA only) – Time of application is critical in achieving control of pea weevil. For optimum results, apply at bloom prior to detecting adult pea weevils. Once adult pea weevil populations reach a level of 2 or more adults per 25 sweeps, control may be reduced.				
Pepper	Beet Armyworm* Colorado Potato Beetle Corn Earworm Cucumber Beetle (adults) European Corn Borer Flea Beetles Loopers Pepper Weevil* Southern Armyworm	0.03-0.05	5.8-9.6	22-13	7
	*Aids in control. Apply when insects are observed or when insect damage is observed. Repeat applications at 7 to 10 day intervals to achieve control. Do not apply more than 0.35 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Potato	Leafhoppers (except CA) Potato Psyllid	0.015-0.03	2.9-5.8	44-22	7
	Potato Tuberworm	0.015-0.05	2.9-9.6	44-13	
	Beet Armyworm* Buckthorn Aphid Cabbage Looper Colorado Potato Beetle Cucumber Beetle (adult control) Cutworms European Corn Borer Fleabeetles Grasshoppers Potato Aphid Potato Leafhopper Tarnished Plant Bug Western Yellow-Striped Armyworm	0.03-0.05	5.8-9.6	22-13	
	Colorado Potato Beetle (Long Island, NY only)	0.05	9.6	13	
	Grasshopper - For control of first and second instar grasshopper nymphal stages a rate range of 3.9 to 5.8 fluid ounces of product per acre (0.02-0.03 lb. ai/A) can be used. Correct timing of spray applications to the first and second instar nymphal stages and thorough coverage is critical to achieve optimum control. For grasshopper nymph stages larger than second instar, use EsfenStar 8% EC at use rates of 5.8 to 9.6 fluid ounces of product per acre (0.03 - 0.05 lb ai/A). Potato Tuberworm - For control of Potato Tuberworm apply EsfenStar 8% EC when tuberworm larvae and/or moth counts reach locally established treatment threshold populations. 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 vine kill increases the risk of tuber damage. *Aids in control. Do not apply more than 0.35 lbs. a.i. per acre per season.				
Radishes	Armyworms Beetles	0.03-0.05	5.8-9.6	22-13	7
	Do not apply more than 0.1 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Sweet Corn*	Western Bean Cutworm	0.015-0.03	2.9-5.8	44-22	1
	For additional information consult directions for use under “Corn (field)”.				
	Armyworm Banded Cucumber Beetle Beet Armyworm* Chinch Bugs Corn Earworm Corn Leaf Aphid Corn Rootworms (adults) Cutworms European Corn Borer Fall Armyworm (except CA) 1st and 2nd instar Flea Beetles Grasshoppers Oat Bird-Cherry Aphid Sap Beetles (adults) Southwestern Corn Borer Stalk Borer Tarnished Plant Bug	0.03-0.05	5.8-9.6	22-13	
	Corn Silkfly (except CA)**	0.05	9.6	13	
	*Aids in control. **Suppression only. For Ear Protection - Begin applications either just before or at time of silking. For additional information consult directions for use under “Corn (field)”. Corn Leaf Aphid & Oat Bird-Cherry Aphid - For optimum results, direct the spray at the aphid population so as to achieve maximum coverage of the exposed insects. Aphids not contacted by the spray, such as in whorls and leaf axils, may not be adequately controlled. Corn Silkfly (except CA) - Direct application to the ear zone to obtain thorough coverage of the corn silk. Fall Armyworm (except CA) - 1st and 2nd instar fall armyworm only. Direct the application to the ear zone to obtain thorough coverage of the corn silk.				
	*Do not apply more than 0.5 lbs. a.i. per acre per season.				

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC	Last Application (days to harvest)
		lb. ai/acre	fl. oz./acre		
Tomato	Tobacco Hornworm Tomato Hornworm	0.015-0.03	2.9-5.8	44-22	1
	Beet Armyworm* Cabbage Looper Colorado Potato Beetle Cutworms Flea Beetle Grasshoppers Potato Aphid Southern Armyworm Tomato Fruitworm Tomato Pinworm Western Yellow-Striped Armyworm Whitefly	0.03-0.05	5.8-9.6	22-13	
	Vegetable Leafminer**	0.05	9.6	13	
	*Aids in control. **EsfenStar 8% EC is not recommended for use on the Vegetable Leafminer in Florida. Do not apply more than 0.5 lbs. a.i. per acre per season.				
Turnips	Armyworm Fleabeetle Imported Cabbageworm	0.03-0.05	5.8-9.6	22-13	7
	Do not apply more than 0.4 lbs. a.i. per acre per season.				

SPECIALTY USES

Crop	Insect	Application Rate		
		High Volume Sprays		Low Volume Sprays lb ai/acre
		lb. ai/100 gal	fl. oz./100 gal	
Christmas tree plantings, Conifer plantations, Conifer seed orchards, Forest tree nurseries	Balsam Twig Aphid Balsam Woolly Adelgid Cranberry Girdler (adult control) European Pine Sawfly Nantucket Pine Tip Moth and other Pine Tip Moths (except CA) Northern Pine Weevil Pales Weevil Pine Chafer Pine Conelet Bug Pine Needle Midge Pineleaf Chermid Red Pine Sawfly Redheaded Pine Sawfly Spittlebugs Spruce budworm	0.03-0.05	5.8-9.6	0.03-0.05
	Spray in sufficient gallonage to obtain good coverage of entire tree.			
	Coneworm Seed Chalcid Seedbug	9.6 fl oz/100 gals water for high volume sprayers. 52 fl oz/l00 gals water for low volume sprayers. 0.19 lb. ai/acre application in not less than 10 gals of water for aerial applications.		
	Apply first application within 1 week of female flower closure or peak pollen flight for Webbing Coneworm control. For other Coneworms and Seedbugs, apply first application within 30 days following female flower closure. Repeat application at intervals of 4 weeks but do not apply more than 1.6 lbs. ai per acre per year. For Seed Chalcid control, apply when all cones are pendant, and repeat at 1 - 2 week intervals for 2 or more sprays. Apply approximately 5 - 10 gals of the 9.6 fl oz/100 gal dilution per tree with high volume sprayers. With low volume sprayers apply 100 gals of the 52 fl. oz/100 gal dilution per acre. Do not graze or harvest cover crop. Refer to Spray Recommendations and Precautions when applying to areas adjacent to water.			

Crop	Insect	Application Rate		Acres treated per gal of EsfenStar 8% EC
		lb. ai/acre	fl. oz./acre	
Non-Cropland (excluding public land such as forests, parks, or recreational)	Grasshoppers Saltmarsh Caterpillar	0.015-0.03	2.9-5.8	44-22
	Army Cutworms Armyworms Chinch Bugs	0.03-0.05	5.8-9.6	22-13
	Spray non-cropland adjacent to tilled areas to control migrating insects (Grasshoppers, Armyworms) which are a threat to crops. Do not apply more than 0.5 lbs. active ingredient per acre per year. Do not feed treated crop to livestock. Refer to Spray Recommendations and Precautions when applying to areas adjacent to water.			

STORAGE AND DISPOSAL

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

STORAGE: Store in a secure, dry and temperate area. Store in original container. Keep container closed when not in use. Do not store near food or feed. Do not use or store around the home. Avoid contact with water. In case of spill or leak, soak up with sand, earth or synthetic absorbent (do not use alkaline absorbents) and dispose of wastes in compliance with local, State and Federal regulations.

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

CONTAINER DISPOSAL:

Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying.

[for containers less than 5 gallons] 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 alter 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 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 containers greater than 5 gallons] Triple rinse [or pressure rinse] as follows:

Triple rinse: 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 it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container back 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 and disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Do not cut or weld metal containers.

Pressure rinse: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. 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 flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable Container. Refill this container with Esfenvalerate only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning **before refilling is the responsibility of the refiller.**

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more time. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by the state and local authorities, by burning. If burned, stay out of smoke.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying and using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of LG Life Sciences, Ltd. or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold LG Life Sciences, Ltd and Seller harmless for any claims relating to such factors.

LG Life Sciences, Ltd. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the **Directions for Use**, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of the Seller or LG Life Sciences, Ltd. and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, LG life Sciences, Ltd. **MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.**

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