

71512-10

12/22/2008

1/21


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

DEC 22 2008

 OFFICE OF
 PREVENTION, PESTICIDES AND
 TOXIC SUBSTANCES

Premjit Halankar
 ISK Biosciences
 7470 Auburn Road Suite A
 Concord, Ohio 44077

Dear Dr. Halankar:

Subject: Beleaf 50SG Insecticide
 EPA Reg. No. 71512-10
 Submission dated 6/20/08

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is conditionally acceptable provided you submit the data listed in attachment A and make the label changes listed below. One copy of the finished labeling must be submitted prior to releasing the product for shipment.

On pages 3 and 4, the listing of crop groups must conform to the headings on pages 9 through 18.

On pages 9, 11, 12, 14, 15 & 16, revise the application comments on greenhouse whitefly as follows:

For control, apply in combination with other effective products labeled for use on these listed crops.

On page 16, in the comments column, delete the reference to potatoes, as potato is not listed on this particular crop application rate table.

On page 8, in the Rate Conversion Chart, revise the calculations for 1.7 ounces Beleaf 50SG/A as follows and adjust the application rates on pages 10 & 13 accordingly:

Ounces Beleaf 50SG/A	Pounds Beleaf 50SG/A	Pounds ai/A	Treated Acres/Pound Beleaf 50SG
1.7	0.106	0.053	9.4

There is a discrepancy between the marked-up label and the unmarked-up label, which has created some confusion. Revise the heading on page 9 to delete the reference to crop

Group 5A (or 5) as follows: Brassica (cole) Leafy Vegetables (0 day PHI) including:

Revise the heading on page 11 to delete the reference to crop Group 9 as follows:
Cucurbit Vegetables (0 day PHI) including:

Revise the heading on page 12 to delete the reference to Crop Group 8 as follows:
Fruiting vegetables (except cucurbits) (0 day PHI) including:

Revise the heading on page 14 to delete the reference to Crop Group 4 as follows:
Leafy vegetables (except Brassica) (0 day PHI) including:

Revise the heading on page 15 to delete the reference to crop Subgroup 1C as follows:
Tuberous and Corm Vegetables (7 day PHI) including:

Revise the heading on page 16 to delete the reference to crop Subgroup 1B as follows:
Root Vegetables (except Sugar Beets) (3day PHI) including:

Revise the heading on page 17 to delete the reference to Crop Group 11 as follows:
Pome Fruit (21 day PHI) including:

Revise the heading on page 18 to delete the reference to Crop Group 12 as follows:
Stone Fruit (14 day PHI) including:

If you have questions, please call Ann Sibold at 703 305-6502.

Sincerely,

for Ann Sibold
Richard Gebken
Product Manager 10
Insecticide Branch
Registration Division (7505P)

3
21



GROUP	9C	INSECTICIDE
-------	----	-------------

Beleaf™ 50SG Insecticide

EPA Reg. No. 71512-10 EPA Est. No.

Active Ingredient:	By Wt.
*Flonicamid.....	50.0%
Other Ingredients.....	50.0%
Total.....	100.0%

*Contains 0.5 pounds active ingredient per pound of formulated product
U.S. Patent No. 5360806

KEEP OUT OF REACH OF CHILDREN

CAUTION

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

FIRST AID

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

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

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

If Inhaled: Remove person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Note to Physician: Treatment is otherwise controlled by removal of exposure followed by symptomatic and supportive care.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1- 888-484-7546 for emergency medical treatment information.

For Emergency Assistance Call: ISK (888) 484-7546.

See other panels for additional precautionary statements.

Net Contents: 5 lbs.

ISK Biosciences Corporation
7470 Auburn Road, Suite A
Concord, Ohio 44077

ACCEPTED
with COMMENTS
In EPA Letter Dated:
DEC 22 2008
Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.
71512-10

PRECAUTIONARY STATEMENTS

Hazards to Humans (& Domestic Animals)

CAUTION

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

Personal Protective Equipment (PPE)

Applicators and other handlers must wear: long-sleeved shirt and long pants, shoes plus socks, and waterproof gloves.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible wash thoroughly and change into clean clothing.

Environmental Hazards

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

DIRECTIONS FOR USE

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

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), restricted-entry interval (REI) and notification to workers (as applicable). 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, waterproof gloves, and shoes plus socks.

5
21

STORAGE AND DISPOSAL

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

Pesticide Storage Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call CHEMTREC (800) 424-9300.

To confine spill: Cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Completely empty container into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

GENERAL INFORMATION

Beleaf™ 50SG is a 50 percent soluble granular formulation of the insecticide flonicamid. **Beleaf 50SG** provides control of a variety of aphid and plant bug pests and suppression of some non-aphid pests in head and stem Brassica and mustard greens, cotton, cucurbit vegetables, fruiting vegetables and leafy vegetables (excluding Brassica), potato, pome fruit and stone fruit.

The rate of application is dependent upon the insect species present, the level of insect pressure, and the amount of foliage present. Begin applications before populations begin to build or at economic thresholds according to local economic guidelines. Refer to local Cooperative Extension Guideline and/or time applications for scouting results. Thorough plant coverage is essential for good performance.

Mode of Action. Beleaf 50SG is a member of the pyridinecarboxamide class of chemistry. Beleaf 50SG controls target pests by contact and ingestion provoking rapid and irreversible feeding cessation. Aphids and other insects could remain on the plant until they desiccate.

Resistance Management. Some insects are known to develop resistance to products used repeatedly for insect control. Beleaf 50SG is effective for strategic use in programs that attempt to minimize pest resistance. Beleaf 50SG is a Group 9C (selective feeding blocker) insecticide and may be tank mixed or rotated with insecticides from different groups. An insect management program that includes alternation and/or tank mixes between Beleaf 50SG and other labeled insecticides that have a different mode of action and/or control insects not controlled by Beleaf 50SG is essential to prevent insect resistant populations from developing. Consult with your Federal or State Cooperative Extension Service representatives for guidance on the proper use of Beleaf 50SG in programs that seek to minimize the occurrence of pest resistance.

Use Restrictions

Do not use this product in greenhouses.

Do not use this product in home gardens.

6
21

Crop Rotation Restrictions

Following application of Beleaf 50SG, any crop listed on this label may be planted as a rotational crop. All other crops may be planted 30 days after the last application of Beleaf 50SG.

Maximum Seasonal Use and Pre-Harvest Intervals

Crop	Maximum Seasonal Total (pounds active ingredient)	PHI Days
Listed Brassica Vegetables	0.267	0
Cotton	0.267	30
Listed Cucurbit Vegetables	0.267	0
Listed Fruiting Vegetables	0.267	0
Hop	0.267	10
Listed Leafy Vegetables	0.267	0
Listed Tuberous Vegetables	0.267	7
Listed Root Vegetables	0.267	3
Listed Pome Fruit	0.267	21
Listed Stone Fruit	0.267	14

Mixing and Loading Instructions

The spray system must be clean and free of residues from previous applications. Fill the spray tank 1/2 full with clean water. The agitation system must be operating and sufficient to provide uniform spray mixing during application and until the spray tank has been emptied. Complete filling the spray tank to the desired level.

Do not store Beleaf™ 50SG spray mixtures overnight.

Do not premix Beleaf™ 50SG solutions in nurse tanks. Do not prepare more spray mixture than is needed for the immediate application.

Do not use liquid fertilizer as a carrier for Beleaf 50SG.

Tank Mixtures

Beleaf 50SG can be mixed with products labeled for use on the crops/sites listed on this label in accordance with the more (most) restrictive of label limitations and precautions. No label dosage rates may be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Read and follow all manufacturer's label recommendations for the companion product. Beleaf 50SG is generally compatible with other insecticides, fungicides, fertilizers and micronutrient products provided sufficient free water is available for dispersion of all the tank mix products. However, the physical compatibility of Beleaf 50SG with tank mix partners should be evaluated using a jar test before use.

The crop safety of all potential tank mixtures on all crops may not have been tested. Before applying any tank mixture not specifically recommended on this label, the safety to the target crop must be confirmed.

In general, tank mix partners should be added in the following order: products in water-soluble packaging, wettable powders or wettable granules or dry flowables, liquid flowables, liquids, then emulsifiable concentrates. Allow each tank mix partner to become completely dispersed before adding the next product.

Spray Equipment Clean Out:

After spraying Beleaf 50SG, thoroughly clean the sprayer before using sprayer equipment for any other applications. In addition, users must take appropriate steps to ensure proper equipment clean out for any other products mixed with Beleaf 50SG as required on the other product labels. Refer to the Disposal and Environmental Hazards statements regarding disposal of equipment washwaters.

Application Information

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers. Use the largest droplet size consistent with good pest control.

Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage. Finished spray volumes should be increased under extreme pest populations or dense plant foliage.

Ground Application

Utilize a boom and nozzle sprayer equipped with the appropriate nozzles, spray tips and screens and adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Utilize nozzles that produce minimal amounts of fine spray droplets. Do not exceed 30 psi spray pressure unless otherwise required by the manufacturer of drift reducing nozzles. Sprayers should be adjusted to position spray tips a minimum of 18 inches above the crop. Be aware that overlaps and slower ground speeds while starting, stopping or turning while spraying may result in higher application rates.

Aerial Application

Utilize a boom and nozzle sprayer equipped with the appropriate nozzles, spray tips and screens and adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Utilize nozzles that produce minimal amounts of fine spray droplets. Do not exceed 30 psi spray pressure unless otherwise required by the manufacturer of drift reducing nozzles. Use nozzle types and arrangements that will provide optimum coverage while producing a minimal amount of fine droplets.

Chemigation Application

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect any irrigation system used for pesticide application to a public water system. Crop injury, lack of effectiveness or illegal residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must also contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment. Beleaf 50SG should be applied continuously for the duration of the water application. Beleaf 50SG should be diluted in sufficient volume to insure accurate application over the area to be treated. Use the appropriate amount of water to carry the product to the target pest. Agitation generally is not required when suitable diluents are used. A diluents test should be conducted to ensure that phase separation would not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable control.

Using Water from Public Water Systems: DO NOT APPLY Beleaf 50SG THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM. Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Beleaf 50SG may be applied through irrigation systems, which may be supplied by a public water system only if water from the water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Spray Drift Management

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they must be observed.

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.

1. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
2. Do not cultivate within 10 feet of the aquatic area so as to allow growth of a vegetative filter strip.
3. Do not apply by ground equipment 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 ultra low volume (ULV) applications are made.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory below.

Aerial Drift Reduction Advisory

(This section is advisory in nature and does not supersede the mandatory label requirements).

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Spray Droplet Size

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation - For aerial application, orient nozzles so that the spray is released parallel to the air stream as this produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets.

Boom Length - For some aerial use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height - Aerial applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment - When aerial applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.)

Wind - Drift potential is lowest between winds speeds of 3 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity - When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

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

Sensitive Areas - The pesticide should only be applied when the wind is blowing away from adjacent sensitive areas such as residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops.

Insect Spectra

The following tables list various insect species, which are either effectively controlled or suppressed¹ when appropriate application rates of Beleaf 50SG are made at appropriate timings. See specific crop sections for recommendations on specific pests.

¹Suppression may be erratic control ranging from good to poor, or a consistent level of control below that generally considered commercially acceptable.

Aphid Pests

Common Name	Scientific Name
Apple Aphid	<i>Aphis pomi</i>
Black Bean Aphid	<i>Aphis fabae</i>
Black Cherry Aphid	<i>Myzus cerasi</i>
Cabbage Aphid	<i>Brevicoryne brassicae</i>
Cotton / Melon Aphid	<i>Aphis gossypii</i>
Cowpea Aphid	<i>Aphis craccivora</i>
English Grain Aphid	<i>Sitobion avenae</i>
Green Peach Aphid	<i>Myzus persicae</i>
Greenbug	<i>Schizaphis graminum</i>
Hop Aphid	<i>Phorodon humuli</i>
Leaf Curl Plum Aphid	<i>Brachycaudus helichrysi</i>
Mealy Plum Aphid	<i>Hyalopterus pruni</i>
Foxglove Aphid	<i>Aulacorthum solani</i>
Pea Aphid	<i>Acyrtosiphon pisum</i>
Potato Aphid	<i>Macrosiphum euphorbiae</i>
Red Lettuce Aphid	<i>Uroleucon pseudambrosiae</i>
Rosy Apple Aphid	<i>Dysaphis plantaginea</i>
Spirea Aphid	<i>Aphis spiraeicola</i>
Turnip Aphid	<i>Lipaphis erysimi</i>
Woolly Apple Aphid	<i>Eriosoma lanigerum</i>
Red Lettuce Aphid	<i>Nasonovia ribis-nigri</i>

Non-Aphid Insect Pests

Common Name	Scientific Name
Cotton Fleahopper	<i>Pseudatomoscelis seriatus</i>
Greenhouse Whitefly	<i>Trialeurodes vaporariorum</i>
Tarnished Plant Bug	<i>Lygus lineolaris</i>
Western Plant Bug	<i>Lygus hesperus</i>

10
21

Rate Conversion Chart for Beleaf 50SG

Ounces Beleaf 50SG/A	Pounds Beleaf 50SG / A	Pounds AI / A	Treated Acres / Pound Beleaf 50SG
1.4	0.088	0.044	11.4
1.7	0.11	0.054	9.4
2.0	0.125	0.062	8.0
2.4	0.15	0.075	6.7
2.8	0.175	0.089	5.7

BRASSICA (COLE) LEAFY VEGETABLES(0 DAY PHI)

Includes all members of Crop Group 5:

Broccoli, Chinese broccoli, Broccoli raab (rapini), Brussels sprouts, Cabbage, Chinese cabbage (bok choy), Chinese cabbage (napa), Chinese mustard cabbage, Cauliflower, Cavalo broccoli, Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens and Turnip greens.

PESTS	Rate of Application		COMMENTS ^{1,2}
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient /Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Rapidly growing plants may need retreatment. Scout fields often and retreat as necessary to maintain populations below damaging levels.
Greenhouse Whitefly	2.8	0.089	Apply when adult whiteflies first appear. Do not allow population to increase unchecked before making first application. Application provides SUPPRESSION only. Apply in combination with other effective products for control. Scout fields often and retreat as necessary to maintain populations below damaging levels.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 10 gallons per acre when applied by ground; use a minimum of 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/ acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE. ² Beleaf 50SG reduces the numbers of aphids which may carry viruses, plant diseases or plant pathogens.			

12
21

COTTON (30 DAY PHI)

PESTS	Rate of Application		COMMENTS ¹
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient /Acre	
Plant Bugs and Fleahoppers	1.7 to 2.8	0.054 to 0.089	Begin applications before populations begin to build or at economic thresholds according to local economic guidelines. The low rate can be used early season for low pest densities or when tank mixing with other products labeled for target insect control on cotton. Use the high rate for large pest populations, dense foliage, and longer residual. Rapidly growing cotton may need retreatment. Scout fields often and retreat as necessary to maintain pest populations below damaging levels.
Aphids	1.4 to 2.8	0.044 to 0.089	

¹Thorough spray coverage of plant foliage is essential for optimum control. Use a minimum of 5 gallons per acre by ground and 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/acre Beleaf 50SG (0.089 lbs. ai/acre) per application. Do not apply more than 8.4 oz/acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications.

13
21

CUCURBIT VEGETABLES (0 DAY PHI)

Includes all members of Crop Group 9:

Balsam apple, balsam pear, bitter melon, Chayote, Chinese cucumber, Chinese waxgourd (Chinese preserving melon), Citron melon ; Cucumber, Gherkin, Gourd, edible (includes: hyotan, cucuzza, hechima and Chinese okra), Muskmelon (includes: true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon), Pumpkin, Squash, summer (includes: crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Watermelon, Winter Squash, (includes butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash)

PESTS	Rate of Application		COMMENTS ^{1,2}
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Rapidly growing plants may need retreatment. Scout fields often and retreat as necessary to maintain populations below damaging levels.
Greenhouse Whitefly	2.8	0.089	Apply when adult whiteflies first appear. Do not allow population to increase unchecked before making first application. Application provides SUPPRESSION only. Apply in combination with other effective products for control. Scout fields often and retreat as necessary to maintain populations below damaging levels.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 10 gallons per acre when applied by ground; use a minimum of 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/ acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE. ² Beleaf 50SG reduces the numbers of aphids which may carry viruses, plant diseases or plant pathogens.			

14
21

FRUITING VEGETABLES (EXCEPT CUCURBITS) (0 DAY PHI)

Includes all members of Crop Group 8:

Eggplant, Groundcherry, Okra, Pepino, Pepper (includes: bell pepper, chili pepper, cooking pepper, pimento, sweet pepper), Tomatillo, Tomato

PESTS	Rate of Application		COMMENTS ^{1, 2}
	Ounces of Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Scout fields often and retreat as necessary to maintain populations below damaging levels. Rapidly growing plants may need retreatment.
Greenhouse Whitefly.	2.8	0.089	Apply when adult whiteflies first appear. Do not allow population to increase unchecked before making first application. Application provides SUPPRESSION only. Apply in combination with other effective products for control. Scout fields often and retreat as necessary to maintain populations below damaging levels.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 10 gallons per acre when applied by ground; use a minimum of 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/ acre Beleaf 50SG (0.089 lbs. ai/ acre) per application; do not apply more than 8.4 oz/acre Beleaf 50SG (0.267 lbs. ai/ acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE. ² Beleaf 50SG reduces the numbers of aphids which may carry viruses, plant diseases or plant pathogens.			

HOP (10 DAY PHI)

15
21

PESTS	Rate of Application		COMMENTS ¹
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient /Acre	
Hop Aphid	1.7 to 2.8	0.054 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Scout fields often and retreat as necessary to maintain populations below damaging levels. Rapidly growing plants may need retreatment.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 50 gallons per acre when applied by ground, preferably air-blast; use a minimum of 10 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications.			

16
21

LEAFY VEGETABLES (EXCEPT *BRASSICA*) (0 DAY PHI)

Includes all members of Crop Group 4:

Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (rouquette), Cardoon, Celery, Chinese Celery, Celtuce, Chervil, Chrysanthemum (edible leaved and garland), Corn salad, Cress (garden and upland), Dandelion, Dock (sorrel), Endive (escarole), Florence fennel, Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Radicchio (red chicory), Rhubarb, Spinach, Spinach (New Zealand), Swiss chard, Vine spinach (Malabar and Indian)

PESTS	Rate of Application		COMMENTS ^{1,2}
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Scout fields often and retreat as necessary to maintain populations below damaging levels. Rapidly growing plants may need retreatment.
Greenhouse Whitefly	2.8	0.089	Apply when adult whiteflies first appear. Do not allow population to increase unchecked before making first application. Application provides SUPPRESSION only. Apply in combination with other effective products for control. Scout fields often and retreat as necessary to maintain populations below damaging levels.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 10 gallons per acre when applied by ground; use a minimum of 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/ acre Beleaf 50SG (0.089 lbs. ai per acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE. ² Beleaf 50SG reduces the numbers of aphids which may carry viruses, plant diseases or plant pathogens.			

17
21

TUBEROUS AND CORM VEGETABLES (7 DAY PHI)

Includes all members of Crop Subgroup 1C:

Arracacha; Arrowroot; Chinese artichoke; Jerusalem artichoke; Edible canna; Casava (bitter and sweet); Chayote (root); Chufa; Dasheen; Ginger; Leren; Potato; Sweet potato; Tanier; Turmeric; Yam Bean; Yam (true).

PESTS	Rate of Application		COMMENTS ^{1,2,3}
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations; use HIGHER RATE for greater populations and/or dense foliage. Rapidly growing plants may need retreatment. Scout fields often and retreat as necessary to maintain populations below damaging levels.
Greenhouse Whitefly	2.8	0.089	Apply when adult whiteflies first appear. Do not allow population to increase unchecked before making first application. Application provides SUPPRESSION only. Apply in combination with other products labeled for insect control on potatoes. Scout fields often and retreat as necessary to maintain populations below damaging levels.

¹Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 10 gallons per acre when applied by ground; use a minimum of 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/ acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE.

² Beleaf SG is recommended as a supplemental foliar control of Green Peach Aphid in long season potatoes following an at-plant program using systemic insecticides and for primary foliar control of Green Peach Aphid in short season potatoes. Scout fields, before aphid flights begin, at intervals and in locations sufficient to provide representative information on population development. Consult local pest management guidelines for correct procedures. Foliar application of Beleaf 50SG should begin when Green Peach aphid numbers reach 5 per 100 leaves, 1 winged aphid per plant or the observation of wingless aphids; consult local pest management guidelines for specific recommendations.

³ Beleaf 50SG reduces the numbers of aphids which may carry viruses, plant diseases or plant pathogens.

ROOT VEGETABLES (EXCEPT SUGAR BEETS) (3 DAY PHI)

Includes all members of Crop Subroup 1B

Beet, garden; Burdock, edible; Carrot; Celeriac; Chervil, turnip-rooted; Chicory; Ginseng; Horseradish; Parsley, turnip-rooted; Parsnip; Radish; Radish, oriental; Rutabaga; Salsify: Salsify, black; Salsify, Spanish; Skirret; Turnip.

PESTS	Rate of Application		COMMENTS ^{1,2,3}
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations; use HIGHER RATE for greater populations and/or dense foliage. Rapidly growing plants may need retreatment. Scout fields often and retreat as necessary to maintain populations below damaging levels.
Greenhouse Whitefly	2.8	0.089	Apply when adult whiteflies first appear. Do not allow population to increase unchecked before making first application. Application provides SUPPRESSION only. Apply in combination with other products labeled for insect control on potatoes. Scout fields often and retreat as necessary to maintain populations below damaging levels.
<p>¹Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 10 gallons per acre when applied by ground; use a minimum of 3 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/ acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE.</p> <p>² Scout fields, before aphid flights begin, at intervals and in locations sufficient to provide representative information on population development. Consult local pest management guidelines for correct procedures. Foliar application of Beleaf 50SG should begin when Green Peach aphid numbers reach 5 per 100 leaves, 1 winged aphid per plant or the observation of wingless aphids; consult local pest management guidelines for specific recommendations.</p> <p>³ Beleaf 50SG reduces the numbers of aphids which may carry viruses, plant diseases or plant pathogens.</p>			

POME FRUIT (21 DAY PHI)

Includes all members of Crop Group 11:

Apple, Crabapple, Loquat, Mayhaw, Pear, Oriental Pear, Quince

PESTS	Rate of Application		COMMENTS ¹
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Scout trees often during green tip through pink growth stages and post-bloom and retreat as necessary to maintain populations below damaging levels.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 50 gallons per acre when applied by ground, preferably air-blast; use a minimum of 10 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz/acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE.			

20
21

STONE FRUIT (14 DAY PHI)

Includes all members of Crop Group 12:

Apricot, Cherry (sweet and tart), Nectarine, Peach, Plum (includes Chickasaw plum, Damson plum, and Japanese plum), Plumcot, Prune (fresh)

PESTS	Rate of Application		COMMENTS ¹
	Ounces Beleaf 50SG/Acre	Lbs. Active Ingredient/Acre	
Aphids and Plant Bugs	2.0 to 2.8	0.062 to 0.089	Begin applications before populations begin to build and before damage is evident, according to local pest management guidelines. Use LOWER RATE for building populations and use HIGHER RATE for greater populations and/or dense foliage. Scout trees often and retreat as necessary to maintain populations below damaging levels.
¹ Thorough spray coverage of plant foliage is essential for optimum control. Apply in sufficient water to ensure good coverage; use a minimum of 50 gallons per acre when applied by ground, preferably air-blast; use a minimum of 10 gallons per acre by air. Finished spray volumes should be increased under extreme pest populations or dense plant foliage. Do not apply more than 2.8 oz/acre Beleaf 50SG (0.089 lbs. ai/acre) per application; do not apply more than 8.4 oz/ acre Beleaf 50SG (0.267 lbs. ai/acre) per season. Do not apply more than 3 applications at the 2.8 oz./acre Beleaf 50SG rate per season. Allow a minimum of 7 days between applications. If identification of aphid species has not been confirmed, use HIGHER RATE.			

21
21

WARRANTY AND LIMITATION OF DAMAGES

ISK Biosciences warrants to those persons lawfully acquiring title to this product that at the time of the first sale of this product by ISK Biosciences this product conformed to its chemical description and that it was reasonably fit for the purposes stated on the product label when used both in accordance with the Directions for Use appearing on the product label and under normal conditions of use. To the extent not inconsistent with applicable law, buyers and users of this product assume the risk of all loss or damage from use or handling of this product that results from their failure to read and comply with the Directions for Use of this product which appear on the product label. To the extent not inconsistent with applicable law, and except as provided elsewhere in a writing containing an express reference to this WARRANTY AND LIMITATION OF DAMAGES, ISK BIOSCIENCES MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY, AND NO AGENT OF ISK BIOSCIENCES IS AUTHORIZED TO DO SO. Unless expressly prohibited by state law, the liability of ISK Biosciences for any breach of warranty shall not exceed the purchase price of the product as to which a claim is made. To the extent not inconsistent with applicable law, buyers and users of this product are responsible for all loss or damage from use or handling of this product which results from conditions beyond the control of ISK Biosciences including, but not limited to, incompatibility with other products unless otherwise expressly provided in the Directions for Use of this product, weather conditions, cultural practices, moisture conditions or other environmental conditions outside of the ranges that are generally recognized as being conducive to good agricultural and/or horticultural practices.

Beleaf™ is a trademark of Ishihara Sangyo Kaisha, Ltd.