Seraco™

CHLORANTRANILIPROLE	GROUP 28	INSECTICIDE

ACTIVE INGREDIENT:	**%By Wt.**
Chlorantraniliprole: 3-Bromo-N-[4-chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide	35.0%
OTHER INGREDIENTS	65.0%
Total	100.0%

Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York state.

EPA Reg. No. 66222-309
EPA Est. No. 37429-GA-001[BT]; 37429-GA-002[BO]
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

*(If you **DO NOT** understand the label, find someone to explain it to you in detail.)*

How can we help?
1-866-406-6262

Manufactured by:
Makhteshim Agan of North America,
Inc. (d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615

Net Contents
16 Ounces

INSECTICIDE

ADAMA
ESSENTIALS

FIRST AID
You may contact 1-877-250-9291 24 hours a day, 7 days a week for emergency medical treatment information.

In case of spills, fire, leaks or accidents call 1-800-535-5053.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

When used as directed this product does not present a hazard to humans or domestic animals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.

After the product has been diluted in accordance with label directions for use, shirt, pants, socks, and shoes are sufficient Personal Protective Equipment. Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

This pesticide is toxic to aquatic invertebrates, oysters, and shrimp. **DO NOT** apply directly to water. Drift and runoff may be hazardous to aquatic organisms in water adjacent to use sites.

Surface Water Advisory: This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of chlorantraniliprole from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory: This chemical has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

DIRECTIONS FOR USE

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

SERACO™ must be used only in accordance with the directions on this label, or as otherwise permitted by FIFRA. Always read the entire label, including the Limitation of Warranty and Liability.

SERACO may be used on crops on this label grown for seed production.

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 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 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 State or Tribal agency responsible for pesticide regulation.

DO NOT enter or allow worker entry into treated areas during the **restricted entry interval (REI) of 4 hours.** PPE required for early entry to the treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks.

SERACO is a water dispersible granule that can be applied as: an in-furrow spray at planting*, transplant water treatment*, hill drench at planting*, surface band at planting*, soil shank injection at planting*, drip chemigation*, or foliar spray (including overhead sprinkler chemigation on certain crops as specified on this label) to control listed insects. Not all application methods are allowed on all crops; see specific crop sections of this label for which application methods may be used. **SERACO** is mixed with water for application. **SERACO** may be used on crops on this label grown for seed production.

SERACO is a member of the anthranilic diamide class of insecticides with a mode of action acting on insect ryanodine receptors. Although **SERACO** has contact activity, it is most effective through ingestion of treated plant material. After exposure to **SERACO**, affected insects will rapidly stop feeding, become paralyzed, and typically die within 1 - 3 days. Time applications to the most susceptible insect pest stage, typically at egg lay, egg hatch and/or newly hatched larvae, before populations reach damaging levels. When pest populations are high, use the highest listed application rate for that pest.

*Not Registered for Use by California.

RESTRICTIONS

- **DO NOT** treat plants grown for transplanting. Not for use in nurseries, plant propagation houses, or greenhouses by commercial transplant producers on plants being grown for transplanting.
- This product is only for commercial use.
- Not for use on ornamental plants or plants being grown for ornamental purposes.
- Not for residential use.
- **DO NOT** apply **SERACO** through any irrigation system unless specified in the crop section of this label or in EPA approved supplemental labeling.

For New York State Only:

The following restrictions are required to permit use of **SERACO** in the State of New York:

- This product may not be applied within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).
- Aerial application of this product is prohibited.
- Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York state.

INTEGRATED PEST MANAGEMENT

SERACO is an excellent insect control agent when used according to label directions for control of a broad spectrum of insect pests. **SERACO** is recommended for use as part of an Integrated Pest Management (IPM) program, which may include the use of insect resistant crop varieties, cultural practices, biological control agents, pest scouting, and insect forecasting systems aimed at preventing economic pest damage. Practices known to reduce insect development need to be followed. Consult your state cooperative extension service or local agricultural authorities for additional IPM strategies established in your area. **SERACO** may be used in State Agricultural Extension advisory (insect forecasting) programs that advise application timing based on environmental factors which favor insect development.

INSECT RESISTANCE MANAGEMENT

SERACO contains the active ingredient chlorantraniliprole and is a Group 28 insecticide based on the mode of action classification system of the International Insecticide Resistance Action Committee (IRAC). Insecticides with the same Group Number affect the same biological site of action on the target pest and when used repeatedly in the same treatment area, naturally occurring resistant individuals may survive correctly applied insecticide treatments, reproduce, and become dominant.

To avoid or delay the development of insecticide resistance, a resistance management strategy should be established for the use area. This strategy may include incorporation of cultural and biological control practices, alternation to different mode of action insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local or state agricultural authorities and product manufacturer for more information about developing a resistance management strategy.

Unless directed otherwise in the specific crop/pest sections of this label, follow these guidelines to delay the development of insecticide resistance:

- Apply **SERACO** and other Group 28 insecticides within a single "treatment window" to minimize exposing multiple successive generations of a pest species to the same mode of action insecticides.
- A "treatment window" is defined as the period of insecticidal activity provided by one or more applications of products with the same mode of action.
- A "treatment window", including residual control, should not exceed 30 days (the length of a typical pest generation).
- Within the Group 28 "treatment window", make no more than 2 applications of **SERACO** or other Group 28 insecticides.
- Following a Group 28 "treatment window", rotate to a "treatment window" of effective insecticides with a different mode of action (Group Number).
- The period between Group 28 "treatment windows" should be at least 30 days.
- The total exposure of all Group 28 products applied throughout the crop cycle (from seedling to harvest) should not exceed approximately 50% of the crop cycle or 50% of the total number of insecticide applications targeted at the same pest species.
- For short cycle crops (< 50 days), the duration of the crop cycle may be considered as the Group 28 "treatment window" as long as no Group 28 insecticides are used during the next crop cycle at the same farm location.
- Follow labeled rates of **SERACO** when applied alone or in tank mixtures.
- Target the most susceptible insect life stages whenever possible.
- Monitor insect populations for product effectiveness. If poor performance occurs and it cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present.

If resistance to **SERACO** develops in your area, **SERACO** or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or agricultural advisor for the best alternate method of control for your area. For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) on the web at http://www.irac-online.org.

APPLICATION

Apply at the specified 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.

Apply follow-up treatments of **SERACO**, as specified, to keep pest populations within threshold limits. Refer to the Resistance Management section of this label for further guidance on follow-up treatments. See individual crop sections of this label for specific minimum spray interval.

Use sufficient water to obtain thorough, uniform coverage. Because **SERACO** is most effective through ingestion of treated plant material, thorough spray coverage is essential for optimum control of targeted pest insects. Using increased water volumes will typically result in better spray coverage, especially under adverse conditions such as dry, hot weather or dense plant foliage. Apply **SERACO** using ground or aerial application equipment. For ground application use the following directions unless otherwise specified in separate crop sections of this label or EPA-approved supplemental labeling: use a minimum of 30 gallons per acre (gpa) of water.

SERACO may be applied by overhead chemigation on certain crops; for overhead chemigation applications see, "APPLICATION BY CHEMIGATION" section of this label for guidance. For aerial application use the following directions unless otherwise specified in this label or in EPA-approved supplemental labeling: use a minimum of 10 gallons per acre (gpa) of water for all crops.

Use of Adjuvants - In some situations where coverage is difficult to achieve such as closed canopy, dense foliage, plants with waxy leaf surfaces, excessive rainfall or less than optimum application equipment, an adjuvant may improve performance. Use only adjuvant products that are labeled for agricultural use and follow the directions on the manufacturer's label. Always conduct a premix test for compatibility. Use a proven adjuvant that does not affect foliage and/or fruit finish. Refer to specific crop sections of this label for additional adjuvant guidance.

CHEMIGATION

SERACO may be applied via chemigation as listed in the specific crop/pest sections of this label. The following types of irrigation equipment may be used for chemigation applications in those crops: drip (trickle)*, or strip tubing irrigation systems*. **SERACO** can also be applied through overhead sprinkler irrigation systems, including the following; center pivot, end tow, hand move, lateral move, side roll, solid set and wheel line overhead sprinkler irrigation systems (see CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS (FORAGE, FODDER, AND HAY), OILSEED GROUP, PEANUT, SOYBEAN AND SUGARCANE section of this label).

Apply **SERACO** in sufficient water and of sufficient duration to ensure the specified rate is applied evenly to the entire treated area. **DO NOT** allow irrigation water to collect or runoff during chemigation; **DO NOT** allow pooling of irrigation water. Inject **SERACO** downstream from any water filtration system.

SERACO must not be applied at the same time that a drip/irrigation line clean out product is being used as performance may be reduced. Crop injury, lack of effectiveness, or illegal pesticide 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.

Wear personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when **SERACO** is in the irrigation water.

When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system. A pesticide supply tank is recommended for the application of **SERACO** in chemigation systems.

DO NOT connect any irrigation system used for pesticide applications to a public water system unless the pesticide label prescribed safety devices are in place. **See "Required System Safety Devices for All Chemigation Systems" at the end of the Chemigation section.** 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 at least 60 days out of the year.

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APPLICATION INSTRUCTIONS

*DRIP (TRICKLE) CHEMIGATION**

SERACO may be applied via drip (trickle) chemigation as listed in the specific crop/pest sections of this label and must be applied in a manner that ensures the product is in the root zone. **SERACO** must be in the root zone to provide effective control of target pests. **SERACO** is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of **SERACO** remain in the root zone where it is most effective. Unless directed otherwise in the specific crop sections of this label, a total of two applications can be made per crop season. Any subsequent **SERACO** treatments must be foliar applications.

1. **DO NOT** begin applications until after crop emergence in direct seeded crops.
2. **DO NOT** make applications if soil moisture is below the level required for active plant growth.
3. This product must be applied uniformly in the root zone or poor performance will result. Drip tape or emitters must be located within or directly adjacent to the root zone.
4. The drip system must be properly designed, free of leaks, and operated in manner that provides uniform application of water throughout the field.
5. In most situations, this product should be applied during the first 1/3 of the irrigation cycle, starting just after the system has come up to pressure.
6. The minimum injection period is the time that it takes water to move from the injection point to the furthest emitter in the irrigation zone (propagation time). If this time is not known, it can be calculated by measuring the time for a soluble dye to move from the injection point to the farthest emitter. A longer injection improves uniformity throughout the zone but needs to allow for at least an equal period of water to flush the system and move the product through the soil.

Rate Conversion Chart for SERACO for Drip (Trickle) Chemigation* and At-Plant Soil Application*

	Rate in Ounces Product / 1000 Row-Feet Based on Planted Row Spacing (in inches) of:															
Target Rate in oz/acre	15 in.	20 in.	25 in.	30 in.	34 in.	36 in.	38 in.	40 in.	44 in.	48 in.	60 in.	66 in.	72 in.	78 in.	80 in.	84 in.
1	0.029	0.038	0.048	0.057	0.065	0.069	0.073	0.077	0.084	0.092	0.115	0.126	0.138	0.149	0.153	0.161
1.5	0.043	0.057	0.072	0.086	0.098	0.103	0.109	0.115	0.126	0.138	0.172	0.189	0.207	0.224	0.230	0.241
2	0.057	0.077	0.096	0.115	0.130	0.138	0.145	0.153	0.168	0.184	0.230	0.253	0.275	0.298	0.306	0.321
2.5	0.072	0.096	0.120	0.143	0.163	0.172	0.182	0.191	0.210	0.230	0.287	0.316	0.344	0.373	0.383	0.402
3	0.086	0.115	0.143	0.172	0.195	0.207	0.218	0.230	0.253	0.275	0.344	0.379	0.413	0.448	0.459	0.482
4	0.115	0.153	0.191	0.230	0.260	0.275	0.291	0.306	0.337	0.367	0.459	0.505	0.551	0.597	0.612	0.643
4.5	0.129	0.172	0.215	0.258	0.293	0.310	0.327	0.344	0.379	0.413	0.517	0.568	0.620	0.671	0.689	0.723

Level and length of control is affected by rate applied.

Higher labeled rates may be required in heavy texture and/or high organic soils if application is made later in the crop development, or when pest pressure is high.

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APPLICATION BY OVERHEAD CHEMIGATION – ONLY FOR USE ON CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS (FORAGE, FODDER, AND HAY), OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE

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

Types of Chemigation Systems: **SERACO** may be applied only through overhead sprinkler irrigation systems. Overhead irrigation systems include the following: center pivot, end tow, hand move, lateral move, side roll, solid set and wheel line. The irrigation system used must provide uniform water distribution.

Directions for Chemigation:

Preparation

A pesticide tank is recommended for the application of **SERACO** in chemigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. With the mix tank ¼ to 1/2 full with water and the agitator running, measure the required amount of **SERACO** and add it to the tank. Then add additional water to bring your total pesticide mixture up to the desired volume for your application.

NOTE: Always add the **SERACO** to water, never put **SERACO** into a dry tank or other mixing equipment without first adding water.

See "Tank Mixing Sequence" section of the container label for tank mixing sequence. Continue to agitate the mixture throughout the application process. Use mechanical or hydraulic agitation, **DO NOT** use air agitation.

Injection Into Chemigation Systems

Inject the specified amount of **SERACO** into the irrigation water flow using a positive displacement injection pump.

Injection should occur at a point in the main irrigation water flow to ensure thorough mixing with the irrigation water. For continuously moving systems, inject the solution containing **SERACO** into the irrigation water line continually and uniformly throughout the irrigation cycle. Apply in no more than 0.2 inches of water per acre. For overhead sprinkler systems that are stationary, add the solution containing **SERACO** to the irrigation water line and apply no more than 0.2 inches of water per acre.

Uniform Water Distribution

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

Equipment Calibration

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

Monitoring of Chemigation Applications

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

Operation

Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector.

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

- End guns must be turned off during the application if they irrigate nontarget areas or if they **DO NOT** provide uniform application and coverage.
- It is recommended that nozzles in the immediate area of wells, control panels, chemical supply tanks and system safety devices be plugged to prevent contamination of these areas.
- **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.
- **DO NOT** apply when system connections or fittings leak, or when nozzles **DO NOT** provide uniform distribution.
- **DO NOT** allow irrigation water to collect or run-off during chemigation.

Cleaning the System

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

Required System Safety Devices

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

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

SOIL APPLICATIONS*

SERACO may be applied as a soil application as listed in the specific crop/pest sections of this label, and must be applied in a manner that ensures the product is in the root zone. **SERACO** must be in the root zone to provide effective control of target pests. **SERACO** is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of **SERACO** remain in the root zone where it is most effective. Maintaining soil moisture to field capacity or to meet crop needs and environmental conditions aids in product availability to the roots and can improve efficacy. Applications of **SERACO** to the root zone allow the active ingredient to be transported from the roots through the xylem providing upward systemicity. **SERACO** is translocated to the canopy beginning immediately after the application, reaching an effective concentration in 1 to 3 days for seedlings and up to 7 days for larger plants. As the plant grows, the roots continue to absorb the available **SERACO** from the reservoir in the soil providing extended protection of the plant canopy including new growth.

The length of control provided following soil applications will depend on the rate used, the pest being controlled and the environmental conditions; such as soil type, soil moisture, soil pH, etc. Use the higher specified rate within the rate range when pests are expected to occur later in the crop growth cycle or when pests are expected to be present continuously. **SERACO** will primarily have activity in the foliage of treated plants and will not provide protection within the blooms and fruit. Foliar applications of other products may be needed to protect these parts of the plant. Unless directed otherwise in the specific crop sections of this label, only one soil application of **SERACO** can be made per crop season, except for drip chemigation where a total of two applications can be made per season. If two drip applications are made then the application rate must not exceed 1.5 oz product (0.066 lb ai/acre) per application.

If **SERACO** is applied as an at plant soil application, only one subsequent drip chemigation application can be made.

*In-Furrow Spray at Planting

Apply as a narrow band spray into the furrow at the seeding depth.

*Transplant water treatment or Hill Drench

Transplants should be adequately watered before transplanting in the field where **SERACO** will be applied. Apply **SERACO** in the field at transplanting in a minimum of 2 fluid ounces of treatment solution per transplant. Ensure water volume is sufficient to thoroughly wet the root zone.

*Surface Band at Planting

Apply as a narrow (2 inches or less) surface band spray above the seed line at planting. Incorporate surface band application within 24 hours of application using sufficient irrigation (usually 0.5 – 1.0 inches of water) to reach the seeding depth.

*Soil Shank Injection

Use soil shank injection at planting. Applications must be incorporated using sufficient irrigation (usually 0.5 – 1.0 inches of water) to reach the root zone. Shank injection should be placed in the seed row or just below the seed line, within 1 – 2 inches of the seed line.

For insecticide resistance management, it is important to avoid consecutive applications of insecticides with the same mode of action on successive generations of the same pest. See crops on label for recommended treatment rates and additional use information.

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MIXING AND SPRAYING

Apply **SERACO** in sufficient water to obtain adequate coverage of the foliage. Fill spray tank ¼ to ½ full of water. Add **SERACO** directly to spray tank. Mix thoroughly to fully disperse the insecticide, once dispersed continued agitation is required.

NOTE: Slowly invert container several times to assure uniform mixture.

Add the required amount of **SERACO** slowly into the spray tank during filling. With concentrate sprays, premix the required amount of **SERACO** in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations.

DO NOT allow spray mixture to stand overnight or for prolonged periods. Prepare only the amount of spray required for immediate use. Spraying equipment needs to be thoroughly cleaned immediately after the application.

TANK MIX COMPATIBILITY

Compatibility - Since formulations may be changed and new ones introduced, premix a small quantity of a desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.). This product can be mixed with pesticide products labeled for use on crops on this label in accordance with the most restrictive of label limitations and precautions. **DO NOT** exceed labeled dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

Tank Mixtures and Crop Safety - Crop varieties can differ in their responsiveness to tank mixtures, and environmental conditions can have an influence on product performance and crop response. It is not possible to test **SERACO** alone or with all possible tank mix combinations on all varieties under all environmental conditions. When considering the use of a tank mixture on a labeled crop without prior experience, or which is not specifically described on **SERACO** product labeling or in other ADAMA product use instruction, it is important to check crop safety first. To test for crop safety, prepare a small volume of the intended tank mixture, apply it to an area of the target crop as directed by both this and the tank mix partner product labels, and observe the treated crop to ensure that a phytotoxic response does not occur. Use of **SERACO** in any tank mixture applications that is not specifically described on **SERACO** product labeling or in other ADAMA product use instructions, could potentially result in crop injury. Follow the precautions on this label and on the label for any other product to be used in tank mixtures before making such applications to your crops. Follow the most restrictive labeling. ADAMA will not be responsible for any crop injury arising from the use of a tank mixture that is not specifically described on **SERACO** product labeling or in other ADAMA product use instruction.

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

1. Water soluble bag (WSB)
2. Water soluble granules (SG)
3. **SERACO** and other water dispersible granules (WG, XP, DF)
4. Wettable powders (WP)
5. Water based suspension concentrates (SC)
6. Water soluble concentrates (SL)
7. Suspoemulsions (SE)
8. Oil based suspension concentrates (OD)
9. Emulsifiable concentrates (EC)
10. Surfactants, oils adjuvants
11. Soluble fertilizers
12. Drift retardants

** Unless otherwise specified by manufacturer directions for use or by local experience.

SPRAY DRIFT

Mandatory Spray Drift Management

Airblast Applications:

- Spray must be directed into the canopy.
- **DO NOT** apply when wind Speeds exceed 15 miles per hr at the application site.
- User must turn off outward pointing nozzles at row ends and when spraying outer row.
- **DO NOT** apply during temperature inversions.

Aerial applications:

- **DO NOT** release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators must select nozzle and pressure that deliver medium or courser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 641 (ASABE S641).
- **DO NOT** apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for the fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- If the windspeed is 10 miles per hour or less, applicators must use 1/2 swath displacement upwind at the downwind edge of the field. When the windspeed is between 11-15 miles per hour, applicators must use 3/4 swath displacement upwind at the downwind edge of the field.
- **DO NOT** apply during temperature inversions.

Ground Boom Applications:

- **DO NOT** release spray at a height greater than 4 feet above the ground or crop canopy.
- Applicators must select nozzle and pressure that deliver medium or courser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572 (ASABE S572).
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Boomless Ground Applications:

- Applicators must select nozzle and pressure that deliver medium or courser droplets in accordance with American Society of Agricultural & Biological Engineers Standard 572 (ASABE S572).
- **DO NOT** apply when wind speeds exceed 15 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size - Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size - Aircraft

- Adjust Nozzles - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT - Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Boom-less Ground Applications:

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications:

Take precautions to minimize spray drift.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Ultra Low Volume (ULV) application is not permitted.

ROTATIONAL CROP (PLANTBACK) RESTRICTIONS

Areas treated with **SERACO** may be replanted with crops on this label immediately after the last treatment. All other crops can be planted 12 months after the last application of **SERACO**.

CROPS

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Cereal Grains (EPA Crop Group 15)* except Corn and Rice. Including: Barley; Buckwheat; Pearl Millet; Proso Millet; Oats; Rye; Sorghum (milo); Sorghum spp. [grain sorghum, Sudangrass (seed crop), and hybrids of these grown for its seed]; Teosinte, Triticale; Wheat; Wild Rice	FOLIAR	Corn earworm Beet armyworm European corn borer Fall armyworm Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm Wheat head armyworm	0.047 - 0.098	2.15 - 4.5	1
		Grasshoppers	0.022 - 0.066	1 - 3	

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 7 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

Grasshopper – With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched, and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

*Not Registered for Use By California.

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Corn (field)*; Corn (pop)*	SOIL AT PLANTING† IN-FURROW SPRAY	Army cutworm Black cutworm Clay-backed cutworm Common stalkborer Dingy cutworm European corn borer Fall armyworm Sandhills cutworm Southern armyworm True armyworm	0.066- 0.098	3 – 4.5	14 Days
	FOLIAR OVERHEAD CHEMIGATION	Army cutworm Beet armyworm Black cutworm Clay-backed cutworm Corn earworm Dingy cutworm European corn borer Fall armyworm Sandhills cutworm Southern armyworm Southwestern corn borer True armyworm Western bean cutworm	0.047 – 0.098	2.15 – 4.5	
		Grasshoppers	0.022 – 0.066	1 – 3	
*Not Registered for Use By California.					

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS – CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

†SOIL APPLICATIONS (an in-furrow spray at planting, transplant water treatment, hill drench at planting, surface band at planting, soil shank injection at planting, or drip chemigation): **SERACO** must be applied uniformly in the root zone or poor performance will result. Surface band application requires sufficient overhead watering following application in to ensure the treatment is moved into the root zone. **DO NOT** apply more than 4.5 oz (0.098 lb ai per acre) of **SERACO** to the soil at planting.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 7 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground when applied as a foliar application.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Cotton*	FOLIAR OVERHEAD CHEMIGATION	Beet armyworm Cotton bollworm[2] Cutworms Fall armyworm Saltmarsh caterpillar Southern armyworm Tobacco budworm[2] Western yellowstriped armyworm	0.047 - 0.098	2.15 - 4.5	21
		Cabbage looper Soybean looper[1]	0.066 - 0.098	3 - 4.5	
		Grasshoppers	0.022 - 0.066	1 - 3	

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- The minimum interval between treatments is 5 days.

[1]Suppression only.

[2]For Heliothine control (cotton bollworm and/or tobacco budworm) in conventional non-transgenic/non-Bt cotton make the first application at rates of 0.066 - 0.097 lb. ai per acre (3.0 - 4.5 oz product). Subsequent applications can be at rates of 0.054 - 0.097 lb. ai acre (2.5 - 4.5 oz product) depending on pest pressure.

For control of cotton bollworm (*Helicoverpa zea*) in Bt transgenic cotton varieties, the initial application, and subsequent applications, of **SERACO** can be applied at 2.5 to 3 ounces per acre as a foliar spray. Apply when cotton bollworm populations reach local established treatment thresholds to prevent crop damage.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched, and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

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Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Forage, fodder, and Straw of Cereal Grains, (EPA Crop Group 16)* except Corn and Rice. Including Forage, fodder, and straw of all commodities included in the cereal grains group, except corn and rice. Includes Sorghum spp. [sorghum, forage; sorghum, stover; sudangrass, and hybrids of these grown for forage and/or stover].	FOLIAR OVERHEAD CHEMIGATION	Beet armyworm Corn earworm European corn borer Fall armyworm Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm Wheat head armyworm	0.047 - 0.098	2.15 - 4.5	1
		Grasshoppers	0.022 - 0.066	1 - 3	

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 7 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground when applied as a foliar application.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched, and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

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Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Forage*, Fodder*, and Straw of Teff*	FOLIAR	Corn earworm Beet armyworm European corn borer Fall armyworm Grasshoppers Sorghum webworm Southwestern corn borer Sugarcane borer True armyworm	0.047 - 0.066	2.15 - 3	14

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 7 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground.

*Not Registered for Use By California.

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Grass Forage, Fodder and Hay: (EPA Crop Group 17)* Any grass, Gramineae family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock, all pasture and range grasses and grasses grown for hay or silage	FOLIAR OVERHEAD CHEMIGATION	Beet armyworm Corn earworm Fall armyworm Sod webworm Southern armyworm True armyworm	0.047 - 0.098	2.15 - 4.5	0
		Grasshoppers	0.022 - 0.066	1 - 3	
		Billbug (grubs)[1] Cutworms European crane fly (larvae)[1]	0.066 - 0.098	3 - 4.5	

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, and HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 7 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.

[1]Suppression only. Grass grown for seed only.

Application Instructions

For control of Armyworms, Cutworms, and Sod Webworms, apply at first sign of economic crop damage. Apply **SERACO** as a thorough coverage foliar spray using properly calibrated ground equipment in a minimum of 10 gallons per acre, or via overhead chemigation in 0.10 to 0.20 acre inch of water. For foliar sprays, increase the spray volume to compensate for the amount of foliage present. For maximum spray penetration in to the root crown area, the use of a silicone surfactant may be useful. For best results with foliar spray applications, delay the next irrigation for at least 24 hours. For suppression of European Crane Fly larvae apply between September and early November. For suppression of Billbug grubs, apply when overwintered adult Billbugs are first observed. This will usually occur in late April or early May. It is important to move the **SERACO** into the grass root zone. This is best achieved by applying via overhead chemigation in 0.25 to 0.50 acre inch of water, or by immediately following a foliar spray application with 0.25 to 0.50 acre inch of water.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

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Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Oilseed Group: (EPA Crop Group 20)* except milkweed including: Borage; calendula; canola; castor oil plant; Chinese tallowtree; cottonseed; crambe; cuphea; echium; euphorbia; evening primrose; flax seed; gold of pleasure; hare's ear mustard; jojoba; lesquerella; lunaria; meadowfoam; mustard seed; niger seed; oil radish; poppy seed; rapeseed; rose hip; safflower; sesame; stokes aster; sunflower; sweet rocket; tallowwood; tea oil plant; vernonia; cultivars, varieties, and/or hybrids of these	FOLIAR OVERHEAD CHEMIGATION	Diamondback moth Banded sunflower moth Sunflower moth	0.047 - 0.066	2.15 - 3	1
		Grasshoppers	0.022 - 0.066	1 - 3	

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, AND HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 5 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground when applied as a foliar application.

Banded sunflower moth and sunflower moth- For best results apply when moth populations reach local established treatment thresholds and as blooms begin to open (sunflower growth stage R-5.0 to R-5.1) to prevent crop damage. Applications may be required at 5-7 day intervals when moth pressure is heavy.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

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Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Peanut*	FOLIAR OVERHEAD CHEMIGATION	Beet armyworm Corn earworm Fall armyworm Green cloverworm Lesser cornstalk borer Southern armyworm Tobacco budworm Velvetbean caterpillar	0.047 - 0.098	2.15 - 4.5	1
		Cabbage looper Granulate cutworm Soybean looper	0.066 - 0.098	3 - 4.5	
		Grasshoppers	0.022 - 0.066	1 - 3	

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, AND HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 5 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground when applied as a foliar application.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

*Not Registered for Use By California.

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Rice*	SOIL APPLICATION† BROADCAST SPRAY	Rice water weevil larvae	0.08 - 0.1	4 - 4.8	N/A

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

USE RESTRICTIONS

† Only for application as a broadcast spray to soil: For water-seeded rice, apply **SERACO** to soil surface prior to seeding and flooding.

- **REI IS 4 HOURS.**
- For dry-seed rice, **SERACO** may be applied to the surface of the soil before, during or after planting, but application must be made before rice emergence.
- **DO NOT** apply more than 5 days prior to flooding. Once flood is established, hold the water for a minimum of 14 days before discharging the water. Broadcast application may be made using aerial or ground application equipment.
- **DO NOT** apply more than 4.8 oz of **SERACO** or 0.1 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** use **SERACO** treated rice fields for the aquaculture of edible fish or crustacea (including crawfish) during the rice production cycle (planting through harvest).
- **DO NOT** apply less than 10 gallons water per acre by ground.

*Not Registered for Use By California.

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Soybean* Including edamame* (immature soybean)	FOLIAR OVERHEAD CHEMIGATION	Beet armyworm Cabbage looper Corn earworm Cutworms Fall armyworm Garden webworm Green cloverworm Lesser cornstalk borer Southern armyworm Soybean looper Thistle caterpillar Tobacco budworm Velvetbean caterpillar Woolybear caterpillar	0.047 - 0.098	2.15 - 4.5	1
		Grasshoppers	0.022 - 0.066	1 - 3	
		Dectes stem borer	0.066 - 0.098	3 - 4.5	

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, GRASS FORAGE, FODDER, AND HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 3 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground when applied as a foliar application.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

Dectes stem borer - To minimize crop damage by the pest, apply at the onset of adult beetle flight. Ensure thorough spray coverage and make application to soybeans prior to egg laying. For best results, regular scouting using a sweep net is necessary to identify the emergence and infestation of adult beetles. If regular scouting is not used, apply at 1500 Growing Degree Days (GDD) in Nebraska and northern Kansas or consult with your local agricultural advisor for advice on application timing. Continued scouting should be used to track the duration of the emergence period. A second application may be necessary at 3 to 4 weeks after the initial application if adults continue to emerge over an extended period.

*Not Registered for Use By California.

Crop	Application Method	Target Pest	Rate Per Acre		Last Application (Days to Harvest)
			Lb A.I. per acre	Ounces product	
Sugarcane*	FOLIAR OVERHEAD CHEMIGATION	Mexican rice borer Sugarcane borer	0.047 - 0.098	2.15 - 4.5	14
		Grasshoppers	0.022 - 0.066	1 - 3	

SERACO can be applied by overhead sprinkler chemigation systems. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS - CEREAL GRAINS, CORN (FIELD, POP, SWEET, GROWN FOR SEED), COTTON, , GRASS FORAGE, FODDER, AND HAY, OILSEED GROUP, PEANUT, SOYBEAN, AND SUGARCANE" section for instructions on overhead sprinkler chemigation.

USE RESTRICTIONS

- **REI IS 4 HOURS.**
- Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.
- Make no more than 4 applications per acre per calendar year.
- Minimum interval between treatments is 7 days.
- **DO NOT** apply more than 9 oz of **SERACO** or 0.2 lb a.i. of chlorantraniliprole containing products per acre per calendar year.
- **DO NOT** apply less than 10 gallons water per acre by ground when applied as a foliar application.

Mexican rice borer - Make the application at initiation of egg hatch, small larvae or at first signs of infestation. The lower recommended rate range can be used when shorter residual control is needed. Use the higher recommended rate range for heavy insect pressure or when longer residual control is desired. Make the application before pests reach damaging levels. Apply in sufficient water to obtain thorough and uniform cover of foliage. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action threshold levels for these pests in sugarcane.

Grasshopper - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd - 3rd instar nymphs. Once grasshoppers contact and/or ingest **SERACO** there will be rapid feeding cessation; insect mortality may not occur until a week later or longer. **DO NOT** make more than two sequential applications of **SERACO** before rotating to another registered insecticide having a different mode-of-action.

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STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE:

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food and feed. Store in original container and out of reach of children, preferably in a locked storage area.

DO NOT store above 100°F for extended periods of time. Storage below 20°F can result in formation of crystals. If product crystallizes, store at 50°F to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

PESTICIDE DISPOSAL:

Open dumping is prohibited. Pesticide wastes are toxic. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. 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 HANDLING:

NONREFILLABLE CONTAINERS:

Rigid, Nonrefillable containers small enough to shake (i.e. with capacities equal to less than 5 gallons or 50 pounds).

Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning if available, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Pressure rinse as follows: 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 a mix tank or collect rinsate at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Once container is rinsed, offer for recycling if available, or puncture and dispose of in a sanitary landfill.

Rigid, Nonrefillable containers that are too large to shake (i.e. with capacities greater than 5 gallons or 50 pounds).

Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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 on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. 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.

Pressure rinse as follows: 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 a mix tank or collect rinsate at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Once container is rinsed, offer for recycling if available, or puncture and dispose of in a sanitary landfill.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY.**

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of ADAMA. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, ADAMA makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of ADAMA is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, ADAMA disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

LIMITATIONS OF LIABILITY: To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at ADAMA's election, the replacement of product.

Manufactured by:
Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615

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Seraco™

CHLORANTRANILIPROLE | GROUP 28 | INSECTICIDE

ACTIVE INGREDIENT: **%By Wt.**

Chlorantraniliprole: 3-Bromo-N-[4-chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide. 35.0%

OTHER INGREDIENTS: 65.0%

Total 100.0%

Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York state.

EPA Reg. No. 66222-309

EPA Est. No. 37429-GA-001[BT]; 37429-GA-002[BO]

Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

*(If you **DO NOT** understand the label, find someone to explain it to you in detail.)*

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

When used as directed this product does not present a hazard to humans or domestic animals.

How can we help?
1-866-406-6262

Manufactured by:
Makhteshim Agan of North America, Inc.
(d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615

INSECTICIDE

Net Contents
16 Ounces

ADAMA
ESSENTIALS

FIRST AID

You may contact 1-877-250-9291 24 hours a day, 7 days a week for emergency medical treatment information.

In case of spills, fire, leaks or accidents call 1-800-535-5053.

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food and feed. Store in original container and out of reach of children, preferably in a locked storage area. **DO NOT** store above 100°F for extended periods of time. Storage below 20°F can result in formation of crystals. If product crystallizes, store at 50°F to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

PESTICIDE DISPOSAL: Open dumping is prohibited. Pesticide wastes are toxic. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. 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.

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See inside label booklet for First Aid, additional Precautionary Statements and Directions for Use.

PEEL BACK BOOK HERE

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