

CONTROL OF POTATO PSYLLID - IDAHO, MINNESOTA ETC.

General Information

Product Information

Blackhawk is a Naturallyte insect control product for control of many foliage feeding pests infesting labeled crops. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. Mix Blackhawk with water and apply as a foliar spray with aerial or ground equipment equipped for conventional insecticide spraying.

Use Precautions

Integrated Pest Management (IPM) Programs

Blackhawk is recommended for IPM programs in labeled crops. Apply Blackhawk when field scouting indicates target pest densities have reached the economic threshold, i.e., the point at which the insect population must be reduced to avoid economic losses beyond the cost of control. Other than reducing the target pest species as a food source, Blackhawk does not have a significant impact on certain parasitic insects or the natural predaceous arthropod complex in treated crops, including big-eyed bugs, ladybird beetles, flower bugs, lacewings, minute pirate bugs, damsel bugs, assassin bugs, predatory mites or spiders.

The feeding activities of these beneficials will aid in natural control of other insects and reduce the likelihood of secondary pest outbreaks. If Blackhawk is tank mixed with any insecticide that reduces its selectivity in preserving beneficial predatory insects, the full benefit of Blackhawk in an IPM program may be reduced.

Insecticide Resistance Management (IRM)

Blackhawk contains spinosad, a Group 5 insecticide. Insect/mite biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect/mite population if Group 5 insecticides are used repeatedly in the same field or area, or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Blackhawk or other Group 5 insecticides.

Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. These two insecticide active ingredients share a common mode of action and must not be rotated with each other for control of pests listed on the label. Spinetoram and spinosad may be rotated with all other labeled insecticide active ingredients.

To delay development of insecticide resistance:

- Carefully follow the specific label guidelines within the use directions sections of the label, especially in regard to IRM recommendations.
- Avoid use of the same active ingredient or mode of action (same insecticide group) on consecutive generations of insects. However, multiple applications to reduce a single generation are acceptable. Treat the next generation with a different active ingredient that has a different mode of action or use no treatment for the next generation.
- Avoid using less than labeled rates of any insecticide when applied alone or in tank mixtures.
- Target applications against early insect developmental stages whenever possible.
- Base insecticide use on comprehensive IPM programs including crop rotations.
- Monitor treated insect populations in the field for loss of effectiveness.
- Contact your local extension specialist, certified crop advisor, and or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, contact your local Dow AgroSciences representative or by calling 800-258-3033.

Blackhawk - Alone: Fill the spray tank with water to about one-half of the required spray volume. Start agitation and add the required amount of Blackhawk. Continue agitation while mixing and filling the spray tank to the required spray volume. Maintain sufficient agitation during application to ensure uniformity of the spray mix. Do not allow water or spray mixture to back-siphon into the water source.

Blackhawk - Tank Mix: When tank mixing Blackhawk with other materials, conduct a compatibility test (jar test) using relative proportions of the tank mix ingredients prior to mixing ingredients in the spray tank. If foliar fertilizers are used, repeat the jar test with each batch of fertilizer utilizing the mixing water source. Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation

in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

Mixing Order for Tank Mixes: Fill the spray tank with water to 1/4 to 1/3 of the required spray volume. Start agitation. Add different formulation types in the order indicated below, allowing time for complete dispersion and mixing after addition of each product. Allow extra dispersion and mixing time for dry flowable products.

Add different formulation types in the following order:

1. Blackhawk and other water dispersible granules
- 2 . Wettable powders

Maintain agitation and fill spray tank to 3/4 of total spray volume. Then add:

3. Emulsifiable concentrates and water-based solutions
4. Spray adjuvants, surfactants and oils
- 5 . Foliar fertilizers

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose.

Premixing: Dry and flowable formulations may be premixed with water (slurried) and added to the spray tank through a 20 to 35 mesh screen. This procedure assures good initial dispersion of these formulation types.

Spray Tank pH: A spray tank pH between 6.0 and 9.0 is suggested to achieve maximum performance of Blackhawk. If the water source is outside of this pH range, or tank mixing other pesticides, adjuvants, or foliar nutrients will cause the pH to fall outside this range, consider adjusting the spray tank pH to be between 6.0 and 9.0 before adding Blackhawk. To do this, add all other tank mix components first, then check the spray tank pH, adjust if desired, and then add Blackhawk.

If you require additional information on how to adjust spray tank pH, contact your Dow AgroSciences representative.

Use of Adjuvants: Adjuvants may be used to improve the control of leafminers and thrips in situations where achieving uniform plant coverage is difficult (such as closed crop canopy or dense foliage), or penetration into waxy leaf surfaces is

necessary for pest control.

- Use only adjuvant products labeled for agricultural use and follow the manufacturer's label directions. A nominal concentration of 1 to 2 quarts per 100 gallons (0.25 to 0.5% v/v) is generally sufficient.
- For leafminers and thrips, emulsified crop oils or methylated crop oil plus organosilicone combination products are recommended.
- When using adjuvants, always conduct a jar test to determine the compatibility of the various components in the mixture. Determine crop safety in a small area of the crop whenever there is a significant change in spray mixture ingredients or source of water for the spray mixture.
- Do not use diesel fuel or pure mineral oil.
- When an adjuvant is to be used with this product, Dow AgroSciences recommends the use of an appropriate Chemical Producers and Distributors Association certified adjuvant.

Application Directions

Applications to greenhouses or other enclosed structures are limited to ornamental uses. Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. The following directions are provided for ground and aerial application of Blackhawk. Attention should be given to sprayer speed and calibration, wind speed, and foliar canopy to ensure adequate spray coverage.

Row Crop Application

Use calibrated power-operated ground spray equipment capable of providing uniform coverage of the target crop. Orient the boom and nozzles to obtain uniform crop coverage. Utilize a minimum of 5 to 10 gallons per acre, increasing volume with crop size and/or pest pressure. Use hollow cone, twin jet flat fan nozzles or other insecticide atomizer suitable for insecticide spraying to provide a fine to coarse spray quality (per ASABE S-572, see nozzle catalogs). Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Follow manufacturer's specifications for ideal nozzle spacing and spray pressure. Minimize boom height to optimize uniformity of coverage and maximize deposition (optimize on-target deposition) to reduce drift.

Aerial Application

Apply in a spray volume of 5 gallons or more per acre (10 gallons or more per acre for trees, vines or orchard crops). Nozzle configuration should provide a medium to fine droplet size per ASABE S-572 standard (see USDA-ARS or NAAA handbook).

Guidance for ASABE S-572 nozzle configuration can be found at the following web site: www.cproductsinc.com. Boom length must be less than 75% of wing or 85% of rotor span and swath adjustment (offset) to compensate for crosswinds. Do not make applications more than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Use GPS equipment, swath markers or flagging to ensure proper application to the target area. Configure the boom nozzle used (e.g., at NAAA Fly-In) for both crosswind and near parallel winds. If application is made parallel to the wind direction, adjust swath width downward. Use swath adjustment (offset) to compensate for crosswinds. Do not apply under completely calm wind conditions. It is best to apply when wind speed is between 2 to 10 mph. Under conditions of low humidity and high temperatures, adjust spray volume and droplet size upward to compensate for evaporation of spray droplets. Insect control by aerial application may be less than control by ground application because of reduced coverage.

Chemigation Application

Blackhawk may be applied through properly equipped chemigation systems for insect control in corn, cranberry and potato. Follow use directions for these crops in the Uses section of the label. Do not apply Blackhawk by chemigation to other labeled crops except as specified in Dow AgroSciences supplemental labeling or product bulletins. Do not apply to the above listed crop(s) through any other type of irrigation system.

Limitations, Restrictions, and Exceptions

CONTROL OF POTATO PSYLLID

(For Distribution and Use Only in the states of Idaho, Minnesota, North Dakota, Oregon, and Washington)

Blackhawk should be used as part of an integrated program to manage potato psyllid.

Apply 3.5 oz ounces of Blackhawk per acre to potatoes for control of potato psyllid. Begin at first signs of infestations. Due to the occurrence of multiple generations in a growing season, repeated applications may be required. Under moderate to high pest pressure, do not extend application interval beyond 7 to 10 days. Follow resistance management recommendations on the product label.

Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area. Refer to specific crop sections of the product label for additional information and restrictions.

Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

Rates

[field_rates 0](#)

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Restricted Entry Interval

48 hours

Timings

[Begin at first signs of infestations.](#)