

Blackhawk®

INSECT CONTROL FOR POTATOES

NATURALYTE® INSECT CONTROL

Blackhawk Naturallyte insect control has been registered by the United States EPA for use on potatoes, sugar beets, sweet potatoes, and many other root and tuber crops. Blackhawk is very effective for control of many foliage-feeding pests, including Colorado potato beetle, tobacco budworm and several other lepidopteran pests (such as armyworm, cornborers, and loopers), dipteran leafminers, and thrips.



The active ingredient in Blackhawk is spinosad, which is derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring, soil-dwelling bacterium. Spinosad is the active ingredient in Success and Tracer insecticides, which are suspension concentrate (SC) formulations, and was the active ingredient of SpinTor insecticide. Blackhawk is a novel, lignin-based, water-dispersible granule formulation containing 36% active ingredient on a weight basis. This new formulation slows the degradation of spinosad on the leaf surface, providing more consistent and longer residual control than the SC formulations of spinosad under variable conditions.

Spinosad, the active ingredient in Blackhawk insecticide, affects the insect nervous system at the nicotinic acetylcholine receptors, causing rapid excitation that leads to involuntary muscle contractions, prostration with tremors, and final paralysis. To date, no other class of products is known to affect the insect nervous system with the same mode of action as spinosyns.

Features and Benefits for POTATOES

- Very effective against Colorado potato beetle, lepidopteran larvae (armyworms, corn borers, loopers), dipteran leafminers, and thrips
- Excellent rotation partner with other insecticides for insecticide resistance management (IRM)
 - Spinosad is a Group 5 insecticide
 - Spinosad is effective against populations of Colorado potato beetle that are resistant to neonicotinoids (Sub-group 4A)
 - Rotating insecticides with different modes of action (insecticides in different groups) is widely recommended as an IRM (insecticide resistance management) strategy
- Minimal impact on natural enemies, does not flare secondary pests
- Excellent fit in IPM (integrated pest management) programs
- Quick knockdown, extended residual control
- Short 4-hour REI (re-entry interval), and short PHI (pre-harvest interval... 7 days for potatoes)
- Requires minimal PPE (personal protection equipment)
- Not phytotoxic to labeled crops
- Easy-to-pour dispersible granule formulation
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FORMULATION PACKAGE SIZE

Blackhawk Naturallyte insect control is a water dispersible granule formulation that is packaged in 64 ounce bottles. There are four bottles of Blackhawk per case.

Pests	Blackhawk® (oz/acre)
Colorado potato beetle European corn borer	1.70 – 3.30
Armyworms Dipteran leafminer†† (Liriomyza species) Loopers Thrips††	2.25 – 3.50

††Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section on the product label under Mixing Directions.

RESTRICTIONS Potatoes and Sweet Potatoes

- Pre-harvest Interval: Do not apply within 7 days of harvest
- Minimum Treatment Interval: Do not make applications less than 7 days apart
- Do not apply more than a total of 14.4 oz of Blackhawk™ (0.33 lb a.i. of spinosad) per crop
- Maximum Number of Applications: Do not make more than four applications per crop

BLACKHAWK® INSECTICIDE AGAINST COLORADO POTATO BEETLE (CPB) - RUPERT, ID



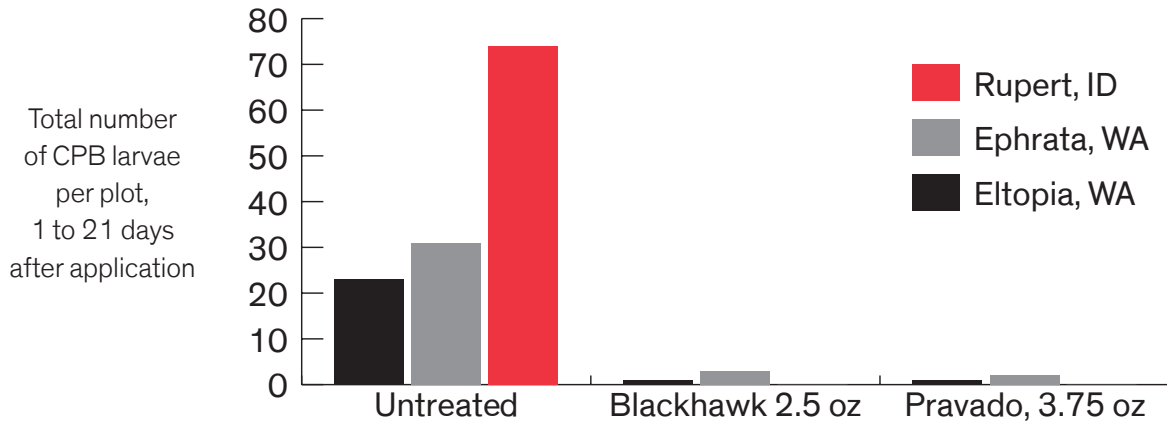
Untreated

20 days after treatment with Blackhawk at 2.5 oz/acre

USE OF ADJUVANTS

Adjuvants may be used to improve control 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 0.50% 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.



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