

Potato

Colorado Potato Beetle

Colorado potato beetles have become resistant to many insecticides. It is recommended that the same insecticide class that was used in the early generation is not used again in the later generation for resistance management. The following insecticides and timings should be considered.

In-furrow at seeding: Admire Pro, Platinum, Cruiser, Verimark.

Early generation beetles and larvae: Agri-Mek, Coragen, Exirel, Torac, Rimon, Radiant, Entrust.

Later generation beetles: Agri-Mek, Coragen, Besiege, Exirel, Avaunt, Torac, Radiant, Entrust, Actara, Endigo ZC.

Insecticidal soaps and horticultural oils are most effective on young larvae, with control rates ranging from 40-70%. These methods are less effective on adult beetles and require frequent reapplication. The biopesticide, spinosad (Entrust), works well against larvae but is not economically feasible in large-scale potato production. The biopesticide, *Beauveria bassiana* (Botanigard) works well under moist conditions, reducing beetle numbers by up to 50-75%, but is slower acting than chemical insecticides.

Threshold depends on plant growth stage. When plants are small and haven't flowered, treat when beetles have done 20-30% defoliation, when plants are flowering, treat at 5-10% defoliation, when tubers are forming, treat at 30% defoliation.

Non-Pesticide

Non-Pesticide Options

Crop rotation is effective at disrupting the beetle life cycle, but its efficacy depends on the distance from previous potato plantings. Beetles can migrate from nearby fields, so large rotations or isolating potato fields are more successful. Trap cropping can be effective, especially when combined with targeted insecticide use. Beetles are drawn to early-planted potato, and growers can reduce overall beetle numbers by controlling them on the trap crop. Efficacy depends on the trap crop's placement and management. On smaller scale farms, early handpicking prevents populations from growing, and deep mulching can reduce populations by 50-75% by hindering their movement.

Pesticide

Actara | thiamethoxam | 3.0 oz. per acre.

See pollinator precautions.

REI: 12-hour. PHI: 14-day. IRAC 04A .

Admire Pro | imidacloprid |

Seed treatment: 0.17-0.35 fl. oz. per 100 lbs of seed applied directly to seed pieces.

Soil application: 5.7-8.7 fl. oz. per acre applied in-furrow, side-dressed, or below seed piece at planting.

Foliar application: 1.3 fl. oz. per acre applied to foliage.

See pollinator precautions.

REI: 12-hour. PHI: 7-day for foliar applications. IRAC 04A .

Agri-Mek SC | abamectin |

Use 0.7SC formulations at 1.75-3.5 fl. oz. per acre. Use 0.15SC formulations at 8-16 fl. oz. per acre.

REI: 12-hour. PHI: 14-day. IRAC 06 . RUP.

Asana XL | esfenvalerate | 5.8-9.6 fl. oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 03A . RUP.

Assail 30SG | acetamiprid |

Use 30SG formulations at 1.5-4.0 oz. per acre. Use 70WP formulations at 0.6-1.7 oz. per acre.

REI: 12-hour. PHI: 7-day. IRAC 04A .

Athena | abamectin , bifenthrin | 7-17 fl. oz. per acre. REI: 12-hour. PHI: 21-day. IRAC 06 . IRAC 03A . RUP.

Avaunt | indoxacarb | 3.5-6.0 oz. per acre.

Control may be enhanced by including a 91% piperonyl butoxide product as a synergist at 4 oz. per ac.

REI: 12-hour. PHI: 7-day. IRAC 22A .

Baythroid XL | beta-cyfluthrin | 1.6-2.8 fl. oz. per acre. REI: 12-hour. PHI: 0-day. IRAC 03A . RUP.

Belay | clothianidin |

Seed treatment: 0.4-0.6 fl. oz. per 100 lbs of seed applied directly to seed pieces.

Soil application: 9-12 fl. oz. per acre applied in-furrow, side-dressed, or below seed piece at planting.

Foliar application: 2-3 fl. oz. per acre applied to foliage.

See pollinator precautions.

REI: 12-hour. PHI: 14-day. IRAC 04A .

Besiege | chlorantraniliprole , lambda-cyhalothrin | 6 to 9 fl. oz. per acre REI: 24-hour. IRAC 28 . IRAC 03A . RUP.

BotaniGard ES | Beauveria bassiana strain GHA | 16 to 32 fl. oz. per acre.

Effective when used repeatedly early in infestations, and with high moisture from rain or irrigation.

REI: 4-hour. IRAC UNF .

Brigadier | bifenthrin , imidacloprid |

Apply 16.0-25.6 fl. oz. per acre at plant as an in-furrow spray on to the seed pieces or seed potatoes. Apply 3.8-6.14 fl. oz. per acre as a foliar application.

REI: 12-hour. PHI: 21-days. IRAC 03A . IRAC 04A . RUP.

Coragen | chlorantraniliprole | 3.5-7.5 fl. oz. per acre. REI: 4-hour. PHI: 14-day. IRAC 28 .

Endigo ZCX | lambda-cyhalothrin , thiamethoxam | 3.0-3.5 fl. oz. per acre. REI: 24-hour. PHI: 14-day. IRAC 03A . IRAC 04A . RUP.

Entrust SC | spinosad |

Use 2SC formulations at 3.0-10.0 fl. oz. per acre. Use 80WP formulations at 1.0-2.0 oz. per acre. Tolerance/resistance has been observed in Minnesota. Observe resistance management restrictions.

REI: 4-hour. PHI: 7-day. IRAC 05 . OMRI-listed.

Exirel | cyantraniliprole | 5.0-13.5 fl. oz. per acre.

Do not apply more than twice per generation.

REI: 12-hour. PHI: 7-day. IRAC 28 .

Mustang Maxx | zeta-cypermethrin | 3.2-4.0 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A . RUP.

Neemix | azadirachtin | 4-16 fl. oz. per acre.

Use on larvae.

REI: 4-hour. PHI: 0-day. IRAC UN . OMRI-listed.

Perm-Up 25DF | permethrin |

Use 25W, 25WP or 25DF formulations at 6.4-12.8 oz. per acre. Use 3.2EC formulations at 4-8 fl. oz. per acre.

REI: 12-hour. PHI: 14-day. IRAC 03A . RUP.

Platinum 2SC | thiamethoxam |

Use 2SC formulations at 5-8 fl. oz. per acre or 75SG formulations at 1.66-2.67 oz. per acre as a preplant broadcast and incorporate, at planting as a banded spray into furrow, or at lay-by as a soil-directed and incorporated spray through cultivation.

REI: 12-hour. IRAC 04A .

Radiant 1SC | spinetoram | 4.5-8 fl. oz. per acre. REI: 4-hour. PHI: 7-day. IRAC 05 .

Rimon 0.83EC | novaluron | 6-12 fl. oz. per acre.

Only effective on larvae.

REI: 12-hour. PHI: 14-day. IRAC 15 .

Scorpion 35SL | dinotefuran |

Soil application: Use Scorpion 35SL at 11.5-13.25 fl. oz. per acre, or Venom 70SG at 6.5-7.5 fl. oz. per acre applied in-furrow at planting, or side-dressed to both sides of the row at ground crack.

Foliar application: Use Scorpion 35SL at 2.0-2.75 fl. oz. per acre, or Venom 70SG at 1.0-1.5 fl. oz. per acre applied to foliage.

See pollinator precautions.

REI: 12-hour. PHI: 7-day. IRAC 04A .

Seed treatments for insects | various ingredients |

Rates of other options otherwise not listed here vary by product, and are often multiple premixed ingredients. Select seed treatments with an insecticide ingredient, such as thiamethoxam (Cruiser 5FS, Cruiser Maxx Vibrance Potato; Cruiser Maxx Potato Extreme).

Sevin XLR Plus | carbaryl | 1.0-2.0 qts. per acre.

Some Colorado Potato Beetle populations are resistant to carbaryl, so results may vary.

REI: 12-hour. PHI: 7-day. IRAC 01A .

Sivanto 200 | flupyradifurone | 10.5-14.0 fl. oz. per acre. REI: 4-hour. PHI: 7-day. IRAC 04D .

Thimet 20G | phorate |

Light or sandy soils: 8.5-11.3 oz. per 1,000 ft. of row for any row spacing larger than 32-inches at planting or postemergence.

Heavy or clay soils: 13.0-17.3 oz. per 1,000 ft. of row at planting but do not use post emergence.

Apply as a band application on each side of row and beneath soil surfaces, or in the seed furrow.

REI: 48-hour. PHI: 90-day. IRAC 01B . RUP.

Tombstone | cyfluthrin | 1.6-2.8 fl. oz. per acre. REI: 12-hour. PHI: 12-hour. IRAC 03A . RUP.

Torac | tolfenpyrad | 14-21 fl. oz. per acre.

See pollination precautions.

REI: 12-hour. PHI: 14-day. IRAC 21A , FRAC 39 .

Trident | Bacillus thuringiensis tenebrionis strain SA-10 | 3-6 qts. per acre.p

Effective on small (up to 1/4 inch) larvae only. Use higher rate for mixed sizes or heavier infestations.

REI: 4-hour. PHI: 0-day. IRAC 11A . OMRI-listed.

Trigard | cyromazine | 2.66-5.32 oz. per acre. REI: 12-hour. PHI: 17-day. IRAC 17 .

Voliam Flexi | chlorantraniliprole , thiamethoxam | 4 oz. per acre. REI: 12-hour. PHI: 14-day. IRAC 28 . IRAC 04A .

Warrior II | lambda-cyhalothrin | 1.28-1.92 fl. oz. per acre. REI: 24-hour. PHI: 7-day. IRAC 03A . RUP.

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