

Sugarbeets XX-11-12

Grasshoppers

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Grasshopper

Four species of grasshoppers are mainly responsible for damage to field crops. These are the differential, two-striped, red-legged and migratory grasshopper. These grasshoppers will feed on a wide range of hosts, including sugarbeet.

Identification (life cycle and seasonal history)

All these species of grasshoppers overwinter in the egg stage. The earliest hatching grasshopper species is the two-striped grasshopper which normally begins to hatch in May. The other species will begin to hatch over the next three to four weeks and the hatch for each species will continue for over a month.

Extended cool (less than 65°F) and rainy weather during hatching can cause severe mortality of the young nymphs and can substantially reduce the buildup of grasshopper populations. Grasshoppers will develop through five immature stages before they become adults. This development will take about six to eight weeks. Adult grasshoppers have wings and this increases their ability to move longer distances beginning in late June and July. Egg laying will begin in mid to late summer and continue until the grasshoppers are killed off by frost in the fall. Grasshopper feeding activity begins during the daytime when temperatures rise above 70°F.

Plant Damage and Response

Damage is usually limited to field margins as the grasshoppers move out of adjoining hatching areas. Grasshoppers damage sugarbeet by consuming the leaves. Unusually severe infestations can result in grasshopper feeding into the newly emerged leaves and direct feeding damage to the growing point. This damage can occasionally result in death of the plant. In mid-summer, the increased mobility of adult grasshoppers coupled with the drying down of original food sources increases the damage potential to sugarbeet and other field crops.

In years with very warm temperatures during winter and early spring, a hatch of grasshoppers in early May can threaten young sugarbeet seedlings. Grasshopper nymphs move out into sugarbeet fields and destroy the young sugarbeet by consuming the cotyledons and the growing point of the small plants. If grasshopper densities are great,

damage to these emerging fields can proceed rapidly and result in nearly complete stand loss, particularly near the borders.

Management Approaches

Untilled areas are the major hatching source for grasshoppers since tillage reduces egg survival. Untilled areas with a mixture of both grasses and broadleaf plants are particularly attractive to grasshoppers. Eliminating broadleaf plants and establishing grass cover in these areas will significantly reduce their appeal to grasshoppers.

If grasshopper infestations along field margins are causing extensive sugarbeet defoliation, insecticide treatments would be warranted. More than eight grasshoppers per square yard in the field margin or more than 20 per square yard in the border area would likely warrant control. Adult grasshoppers are much more difficult to control than the smaller nymphs, so in years when extremely high grasshopper numbers are present, early treatment of hatching areas before the grasshoppers become adults may reduce later impact.

Product List for Grasshoppers:

Insecticide	Product per Acre	Preharvest Interval, remarks
Asana XL ^R	5.8-9.6 oz/A	Do not exceed 0.15 lb ai/A per season; PHI 21 days; REI 12 hrs.
	3.9-5.8 oz/A	Use lower rate for first and second instar grasshoppers only (early season).
Methyl 4EC ^R (methyl parathion)	0.5-0.75 pts./A	PHI 20 days (60 days if tops fed to animals); REI 5 days.
Diazinon 50W ^R , AG500 ^R	50W: 1.0 lbs./A AG500: 1.0 pt./A	PHI 14 days; REI 24 hrs.
chlorpyrifos 4E ¹ (Lorsban and generics)	0.5-1.0 pt./A	PHI 30 days; REI 24 hrs.
Mustang MAX ^R Section 24c label in NE, CO, WY, MT	2.24-4.0 oz/A	Foliar applications. REI 12 hours; PHI 50 days.
Sevin ¹ (carbaryl) 5 bait	Up to 30 lbs/A	PHI 28 days; REI 12 hrs.

^RRestricted use pesticide ¹Labeled for chemigation.

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Categories: Insects, Sugarbeets, Grasshoppers

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