

MUSTARD INSECTS

Yellow mustard (*Sinapis alba*) is the most common type grown in North Dakota; small acreages of brown and Oriental (*Brassica juncea*) are also being grown. These mustards are grown for the seed and used as a condiment. Insects that affect canola may also affect mustard grown for seed. Fortunately, these insects have not caused serious problems for mustard seed on an annual basis.

FLEA BEETLES

Mustard grown for seed has generally not been at risk to significant flea beetle feeding injury. However, circumstances can develop that put mustard seedlings at greater risk.

This crop has demonstrated greater tolerance to flea beetle feeding and is less attractive to the beetles when canola is available. However, if delays in emergence (*cold soils, mid-May snows, etc.*) of all mustards occurs, particularly canola, mustard plants may also be vulnerable. If canola is not available to attract beetles, mustard plants may attract beetles in large numbers and put the crop at greater risk of stand loss. Once the crop advances beyond the seedling stage, serious damage usually does not occur, since vigorously growing mustard can outgrow the beetle defoliation. No major effects on plant vigor have been noted from the feeding of the larvae on plant roots.

Insecticides are not generally available for use in mustard seed production. Insecticides for mustard greens are numerous, but are not permitted for use in mustard seed. Insecticides labeled for canola are not approved for use in mustard grown for seed. It is hoped that efforts underway to address insecticide availability for this crop will be successful.

In December 2003, the insecticide **seed treatment** Gaucho 600 was labeled for use on mustard grown for seed. As with canola, mustard seed growers now have an insecticide option that can provide some early season protection from flea beetle feeding, but they must plan on this approach as they acquire planting seed in the winter.

INSECTICIDE	DOSAGE IN LB AI/ACRE	PRODUCT PER ACRE	RESTRICTIONS ON USE
imidacloprid Attendant 600 Dyna-Shield Imidacloprid 5 Senator 600	refer to recommended label rate		Apply as a commercial seed treatment or for end-use at agricultural establishments (total slurry treater, farmer applied seed treater). To provide early season protection of seedlings against injury by aphids, flea beetles and wireworms. Follow all applicable directions, restrictions and precautions on the EPA registered label.
imidacloprid Gaucho 600		10.24 - 25.6 fl oz per hundredweight of seed	For use in commercial seed treaters only. The label does NOT allow for use in hopper-box, slurry-box or other seed treatment applications at, or immediately before, planting for mustard. Provides protection from flea beetle feeding injury. Rates can be varied depending on assessment of flea beetle risk based on population size observed.
zeta-cypermethrin Mustang Max EC <i>RUP</i>	0.025	4 fl oz	PHI = 7 days. Do not apply more than 0.15 pounds ai per acre per season. Do not make applications less than 7 days apart.

RUP - Restricted use pesticide