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How to Control Insects
Harmful to Alfalfa Seed Production
in South Dakota

By

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In order that a grower of alfalfa seed may have the best chance of producing a good seed yield, the harmful insects in the alfalfa field must be destroyed, while the beneficial pollinating insects should not be reduced but encouraged. The most harmful insects that affect the seed yield of alfalfa in South Dakota are the following:

- Grasshoppers of several species
- Crickets of several species
- Lygus and other plant bugs
- Clover, potato and other leaf hoppers
- Flea beetles of several species

Grasshoppers and crickets may be most economically controlled through the use of chlordane or toxaphene. DDT does not do a good job of killing either grasshoppers or crickets.

Lygus and other plant bugs, clover, potato and other leaf hoppers, and flea beetles can readily be controlled with DDT. Flea beetles and plant bugs may also be destroyed through the use of chlordane or toxaphene, but the leaf hoppers are little affected through chlordane or toxaphene.

DDT, chlordane or toxaphene may be applied to the alfalfa in a liquid spray or in dusts.

When an alfalfa field, that is to be used for seed production, is found to be infested with grasshoppers or crickets it should be sprayed or dusted with either chlordane or toxaphene. When chlordane or toxaphene are applied in spray forms, the materials should be used as emulsions or wettable powders. For best results when spraying use per acre:

Chlordane - - - - - $\frac{1}{2}$ to 1 lb.
 Water - - - - - 15 to 100 gallons

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or

Toxaphene - - - - - 1 to $1\frac{1}{2}$ lbs.
Water - - - - - 15 to 100 gallons

When these materials are to be applied in dusts, use per acre:

Chlordane - - - - - $\frac{3}{4}$ to 1.5 lbs.

or

Toxaphene - - - - - $1\frac{1}{2}$ to $2\frac{1}{2}$ lbs.

Should the grasshoppers and crickets be adult or the stand of alfalfa thin, the amount of chlordane or toxaphene that is applied per acre should be increased at least one half.

DDT can be applied to alfalfa either in a liquid spray or in a dust. For the control of Lygus and other plant bugs and for the control of leaf hoppers, the alfalfa should be treated when the field is in the prebloom stage. For best results when spraying with DDT, use per acre:

DDT emulsion- - - - - 1 to $1\frac{1}{2}$ lbs. total DDT
Water- - - - - 15 to 100 gallons

For best results when dusting with DDT use per acre:

DDT dust (20 lbs. of 10% DDT or 40 lbs. of 5% DDT) --2 lbs. total
DDT

Flea beetles can be readily controlled through any of the three insecticides mentioned. It is possible to combine DDT with either chlordane or toxaphene to make a satisfactory liquid spray or dust for the control of the insect pests enumerated.

An alfalfa field that is in heavy bloom should not be sprayed or dusted with any of the insecticides during the warm daylight hours. If it becomes absolutely necessary to treat such a field, then the alfalfa should be sprayed or dusted at night or early in the morning or late in the afternoon when bees are not flying and visiting and pollinating the flowers.

Bees are the best pollinators of alfalfa blossoms. Bumble bees and the larger wild bees are the best agents for this purpose, while honey bees are the least effective. However, honey bees do help to increase the seed yield. Anything and everything that can be done to encourage or force bees to visit alfalfa blossoms is advisable. Plan the first cutting of alfalfa in such a way as to stagger portions of the alfalfa field in the blossoming period of the second growth of alfalfa when this can be done. Avoiding competition with wild flowers and of sweet clover is also advisable. Wild flowers may be mowed when the alfalfa is in bloom and farming can, at times, be planned so that sweet clover is not grown next to or near alfalfa that is to be used for seed production.