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1961

Insecticides Increase Alfalfa Seed Production

Cooperative Extension, South Dakota State University

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Insecticides Increase Alfalfa Seed Production

Injurious insects reduce alfalfa seed yields in South Dakota by at least 50% according to recent tests conducted by South Dakota State College entomologists. Farmers and ranchers who plan to harvest seed from their alfalfa should prepare to control these pests well in advance of the time that such measures will be needed.

Many seed producers prefer to treat for injurious insects at one or two particular growth stages of the alfalfa rather than to attempt to determine actual pest populations. Recent tests provide information on the insecticides to use in the one or two applications procedure which is commonly called the "rule of the thumb" method of treatment.

INSECTICIDES TO USE

Where one application only was made the treatment was applied to the plants in the bud stage. In the tests using two applications, the bud stage treatment was preceded by treatment applied when the plants were in the 4- to 6-inch stage of growth. All tests were on second crop alfalfa.

The results of these tests conducted from 1956 through 1960 are shown in the table. It is particularly important that the grower note the variations in cash returned by the better insecticides as reflected by the cost of the materials applied. Comparisons of costs of the better treatments should be made each year to take advantage of insecticide price changes.

Close attention to the seed field must be given even when the "rule of thumb" method is used to detect and control late season migrations of such insects as grasshoppers and black field crickets into the seed producing field. If such migrations occur, the use of toxaphene at the rate of 1½ pounds of actual insecticide applied at night is recommended. This chemical applied in this manner will cause the least amount of damage to beneficial pollinating insects essential to the seed crop.

APPLICATION EQUIPMENT TO USE

Air or ground application equipment can be used to good advantage in applying the insecticides. The commonly available low-pressure, low-gallonage type field sprayers are very effective.

Where herbicides have been used in such equipment it is important that the rig be thoroughly cleaned prior to using it to spray alfalfa. To clean, fill the tank

By R.J. Walstrom, Associate Experiment Station Entomologist

Alfalfa Seed Production

Insecticides Increase

Saxpy
Destroyed
Cooperative Extension Service
May-1964



Considered void
after May 1) 1964

with 1 part of household ammonia to 100 parts of water. Pump this mixture into the booms and nozzles and let it remain there overnight. The following morning pump the ammonia solution through the booms. The sprayer can then be safely used in the alfalfa field.

To assure proper and economical applications, calibrate or check the sprayer to determine the exact volume of spray which it will apply per acre. Most field sprayers apply either 5 or 10 gallons of spray per acre when the pressure gauge reads 60 p.s.i. Nozzle wear will cause an increased volume to be released which if not detected will result in a waste of spray material. Upon determining the amount of spray your equipment applies per acre, add the amount of actual insecticide to be used on an acre basis to sufficient water to equal this total spray figure for each acre to be treated.

PROTECT YOUR POLLINATORS

Many wild bees and honey bees combine their efforts to provide pollination service for alfalfa seed production. Make insecticide applications to the alfalfa field as well as to adjoining crops at times when these beneficial insects will not be injured. In general the applications should be completed before the crop blooms and thus attracts the pollinators. Take care to prevent sprays from drifting over nearby colonies of honey bees. Use toxaphene alone for late emergency control sprays and make such applications at night.

DO NOT FEED TREATED FORAGE

Plant parts or combine residues from treated fields should not be used as feed for dairy cattle or animals within 2 months of slaughter.

Table 1. Average Alfalfa Seed Yields for Different Insecticide Treatments at Brookings, South Dakota, from 1956 to 1960

Insecticide	No. appli- cations	Lbs. actual Insecti- cide per A. for each application	Cost per A. of insecti- cides used (dollars)*	Av. seed yield in lbs. per A.†	Av. value over check per A. (dollars) ‡	Av. increase or decrease in profit per A. (dollars) §
DDT		1.00				
plus Toxaphene	2	1.50	4.02	56.13	5.01	0.99
DDT		2.00				
plus Toxaphene	2	2.00	6.77	61.15	6.06	-0.71
DDT		1.00				
plus Toxaphene	1	1.50	2.01	45.79	2.84	0.83
DDT		2.00				
plus Toxaphene	1	2.00	3.39	41.35	1.90	-1.49
DDT		1.00				
plus Aldrin	1	0.25	1.55	57.84	5.37	3.82
DDT		1.00				
plus Heptachlor	1	0.25	1.62	54.09	4.58	2.96
DDT		1.00				
plus Dieldrin	1	0.25	2.05	64.91	6.85	4.80
Lindane	1	0.25	2.49	59.74	6.18	3.69
DDT		1.00				
plus Chlordane	1	1.00	2.55	59.63	5.74	3.19
Aldrin	1	0.25	0.50	49.61	3.64	3.14
Heptachlor	1	0.25	0.57	44.11	2.48	1.91
Dieldrin	1	0.25	1.00	51.97	4.13	3.13
DDT		1.00				
plus Lindane	1	0.25	3.54	58.87	5.58	2.04
Chlordane	1	1.00	1.50	44.80	2.63	1.13
Malathion	1	1.00	2.50	47.26	3.14	0.64
Malathion		1.00				
plus Heptachlor	1	0.25	3.07	45.00	2.67	-0.40
Malathion		1.00				
plus Heptachlor	2	0.25	6.14	66.31	7.14	1.00
Methoxychlor		2.00				
plus Heptachlor	1	0.25	5.57	57.79	5.36	-0.21
Methoxychlor		2.00				
plus Heptachlor	2	0.25	11.14	62.51	6.35	-4.79
Check	--	-----	-----	32.29	-----	-----

*Insecticide costs are based on 1960 retail prices.

†Clean seed yields are averaged for 1956-1960 tests.

‡Seed prices figured at 1960 average price received by farmers of \$21 per 100 pounds.

§Cost of application not included.