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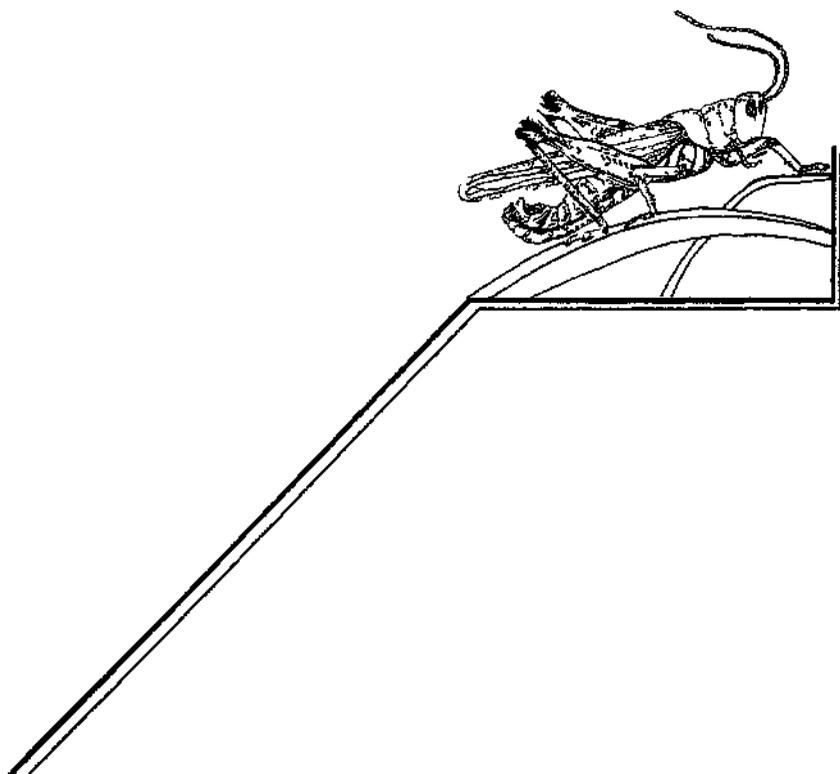
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Grasshopper Control On Arizona Ranges



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GRASSHOPPER CONTROL ON ARIZONA RANGES

by

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Arizona has vast range areas in the state that are often heavily infested with grasshoppers. In some of these areas the injury is caused by early hatching species. The red-legged grasshopper, Melanoplus mexicanus, is the one that causes the most concern in the spring since it is a migratory type of 'hopper. The damage these 'hoppers do to the local range is very important, but the damage they might cause to other areas by a mass flight is also very important.

The past few years several late hatching species have caused considerable damage to range land in Graham, Cochise, Pima and Santa Cruz counties. These species hatch late in July and often cause serious injury in August and September. This list includes Boopedons nubilum, commonly called "Boopee"; Melanoplus lakinus and several species of lubbers. With the unusually dry weather of the past few years, these range species have caused considerable injury in the areas listed above.

The early hatching species have been rather successfully controlled by baiting on the ranges of Cochise and Graham counties. However, the late season hatching species have been causing more recent injury in these same areas as well as others.

In September, 1950, the Bureau of Entomology and Plant Quarantine, Division of Grasshopper Control, conducted some large scale control experiments in Graham county, Arizona. They attempted to use a new insecticide (Aldrin) that was applied by an airplane as a spray. The sprays were applied at the rate of 2 ounces of Aldrin in 1/2 to 1 gallon kerosene per acre. In 1949 they had tested baits of Chlordane and whole-flake bran with rather promising results. However, the sprays that were used in 1950 were much cheaper.

Materials to Use on Ranges

Aldrin--This new organic insecticide gave the most economical control in 1950. On range lands, use 2 ounces of Aldrin per acre in 1/2 to 1 gallon of kerosene per acre. The Aldrin may come in different strengths. However, be sure to apply 2 ounces of the Aldrin per acre.

Good results have been secured when applied by airplane. However, it could be applied with ground equipment. Never use any wettable powder form as this form has not been effective and costs more.

For crops or gardens use the Aldrin emulsion. The emulsion comes 2 pounds of Aldrin in 1 gallon of liquid. Use 1/2 pint of this liquid to the acre, usually in 3 to 4 gallons or 12 to 15 gallons of water, depending on the type of equipment used. The recommendations are based on research by Dr. J. R. Parker and his co-workers of the Bureau of Entomology and Plant Quarantine, Division of Cereal and Forage Insect Investigations.

Chlordane--Chlordane also may be used as either a dust or spray. The cost will be greater than Aldrin. When using a Chlordane dust, be sure to apply 3/4 to 1/2 pound of actual Chlordane per acre. Chlordane sprays are used at the rate of 1/2 to 1 pound of actual Chlordane per acre. Chlordane comes in mixed emulsion concentrates, wettable powders and dusts. Emulsion concentrates and wettable powders should be diluted with water to suit available spraying equipment. Generally speaking, use the small poundage on short, dense vegetation and the greater poundage on tall, dense growing plants. Dosages even higher than those listed above have been used for treatment of barrier strips or for late-season controls when mostly adult grasshoppers are feeding on mature vegetation. If dusts are used, be sure to use 3/4 to 1 1/2 pounds of actual Chlordane per acre. Do not apply Chlordane to pastures or areas where dairy cows are feeding or to areas where feeding cattle will be slaughtered within 30 days.

Toxaphene--Toxaphene is another insecticide that may be used effectively for control of grasshoppers on range lands. It may be purchased in the form of emulsion concentrates or wettable powders that are to be diluted with water to suit the spraying equipment used. Dusts may be used, but are not as effective as sprays.

When using Toxaphene spray materials, be certain to apply at least 1 to 1 1/2 pounds of actual Toxaphene per acre. Usually best results have been secured with the water emulsion types. The dusts are used at the rate of 1 1/2 to 2 1/2 pounds of actual Toxaphene per acre. Do not feed forage treated with Toxaphene to dairy animals or to animals that are to be slaughtered within 30 days. Do not treat areas where dairy animals are feeding.

Caution

Remember that Aldrin, Chlordane and Toxaphene are poisonous to warm-blooded animals. However, they may be used when handled properly. In concentrated forms they may cause acute poisoning when they come in contact with the skin or if inhaled or swallowed accidentally.

If any of these insecticides are accidentally swallowed, induce vomiting by taking 1 tablespoonful of salt in a glass of warm water. Repeat if necessary. Call a doctor at once.

At the present time the use of sprays is preferred to baits. Sprays cost less and are easier to handle. Baits containing Aldrin, Chlordane and Toxaphene are very effective at times and may be used, but is not suggested because of cost and also due to

and also due to the fact that the kill is not quite as effective as the sprays. If you wish to use a bait, secure an oil solution containing 1/2 to 1 pound of Chlordane or 1 to 1 1/2 pounds of Toxaphene to each 1/2 gallon of solution. Spray this material on to 100 pounds of a whole-flake bran containing no flour-like material. If you are interested in this type of bait material contact your County Agricultural Agent.

Remember all insecticides are poisonous. Be sure to keep all grasshopper control materials in a safe place. Follow directions at all times and you will not harm human life or other forms of animal life.

Control grasshoppers when they are about half grown. If you wait until they are adults, it is much harder to kill them as they are moving about a great deal. Best controls are secured when community cooperation is practiced.

For further information, see your County Agricultural Agent.

University of Arizona
College of Agriculture, Agricultural Extension Service
Chas. U. Pickrell, Director

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