PESTS OF PERMANENT AND IMPROVED PASTURES

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Grasshoppers, armyworms and fall armyworms are the most common insect pests of pastures. In certain arid sections of the state, the desert termite has on occasion damaged grasses. In East Texas fire ants often gives hay producers trouble in harvest, shipping and loading hay crops.

Grasshopper: Grasshoppers are important pests of native pasture grasses. Ranchers should closely watch the development of grasshopper populations in the hatching areas during spring and early summer. Insecticides can be most effectively used in these sites before the grasshoppers have dispersed over large areas and when the hoppers are small and still juvenile. Hatching begins when daytime temperatures are 70 degrees F. for several days and the soil is moist.

Eight or more grasshoppers per square yard are considered the action level on rangeland and pastures. Grasshopper damage is heaviest in drier years. The differential grasshopper is usually the most damaging species. See Table 1 for insecticide suggestions in pastures and rangeland.

Armyworms: There are two species of armyworms that can damage improved pastures, temporary winter pastures, permanent pastures and small grains. They are the a) the armyworm (*Pseudaletia unipunctata*) and b) the fall armyworm (*Spodoptera frugiperda*). These two species take approximately 4-5 weeks to go through the larval stage. At first when the worms are small, little forage is consumed. However, when the larvae reach 3/4 to 1 inch in length, they eat much more forage. It is estimated that mature worms will consume 75 to 80 percent of their entire diet in the last few days prior to pupation.

A. Armyworm: Armyworms are usually associated with cool wet springs that produce a lush heavy growth of small grains and winter pastures. This species occurs in Texas during the spring months. There is usually one generation in Texas and then the insect migrates as moths further north into Oklahoma, Kansas and into the Mississippi Valley. The armyworm feeds primarily on small grains such as wheat, rye and ryegrass. It will also feed on other small grains grown for forage and grain production as well as other cool season grasses. It is not an economically limiting insect pest every year although it occurs in pastures and grain fields on an annual basis in April and May.

Armyworms do not readily feed on grasses such as bermudagrass. They are often found in pastures that have a mix of bermudagrass, wheat and ryegrass. When found in theses areas, they consume most of the ryegrass and wheat first and then may feed on other grasses. Controls are

not usually necessary because the infestation coincides with the maturity of the winter forages and the spring growth of bermudagrass. Most cattlemen find that the winter forages have produced their benefit and it is of little significance that the winter forages are being eaten.

Armyworms may severely limit the production of wheat, triticale, rye and ryegrass grown for silage. Where these crops are grown for this purpose, the fields need to be monitored for armyworm presence in April and May.

Armyworm larvae are dark green to nearly black and do not have the stripes characteristically found on a similar species, the fall armyworm. The larvae feed mostly on leaves of the host but will feed on beards and in the seed head causing potential grain losses.

B. Fall Armyworm: The fall armyworm is a major pest of permanent and improved pastures in most parts of Texas. It does not occur in damaging population levels state wide every year. However, locally damaging populations usually occur somewhere in the state on an annual basis. The insect may have from four to five generations in a season across the state. The fall armyworm usually begins its annual cycle in South Texas beginning in early spring and successive generations move northward as the year progresses. Pastures should be watched closely for infestations during rainy periods in late summer and early fall. They may be found infesting pastures until the first frost in the fall.

Larvae of the fall armyworm range in color from pale green to brown or black and are often striped with white to yellowish lines from head to tail. These stripes extend to the head where they form an inverted "Y" which is a distinguishing characteristic of this species.

Moths are mostly black with white markings on the wings. Being nocturnal, the moths are attracted to outside lights and can be found in large numbers flying or resting in the vicinity of these lights. Eggs are laid on grass leaves and are massed together and covered with gray colored scales from the wings of the female.

The action level is three or more small worms per square foot. Controls should be based on the infestation rate, cost of control and the need for the forage.

Desert Termite: Desert termites infest South and West Texas coastal bermudagrass pasture and bunch grass areas. Populations increase during years when the summer months are dry. Highest above-ground populations occur from March through September. Few or no termites are present above ground from December through February. Infestations occur in irregular patterns and are mostly associated with areas which have high clay content soils. Clay chimneys covering grass stems are built during the night or cooler parts of the day by the worker and soldier termites. Infested areas have a dark and unusual appearance as the population increases. Rainfall will decrease termite numbers but termites become very active following rains. If dry weather continues and stand loss of the grass is occurring, a chemical spot treatment may be warranted. A spring-toothed harrow or light disc harrow may be used to break up chimneys and expose developing termites to predators, heat and drying conditions.

There are no specific insecticides labeled for desert termite control in the pastures, but several insecticides labeled for other insects in pastures may help to reduce their populations. Malathion (5 pounds EC) has been used at the rate of 1 quart applied in 35 to 40 gallons of water. Two treatments, 1 week apart, should be applied to the infested areas. A length of chain should be dragged ahead of the spray boom to break up the chimneys and expose termites to the insecticide. This treatment may not be economically feasible, however.

Red Imported Fire Ant. In East and Central Texas, red imported fire ants can be a serious problem in forage production. The ants build mounds as large as 18 inches or more in diameter. Farm and pasture lands may become heavily infested with hundreds of mounds per acre. In the hot summer sun these mounds become hard, and farm machinery is often broken when a mound is hit. In order to reduce machinery damage, farmers may be forced to alter harvesting practices. Dragging a heavy bar to break up mounds between cuttings may be required. Disk-type cutters can be used to cut forages in fire ant infested areas. They can withstand the impact of large mounds without as much damage as the sickle-bar type cutters.

See publication, B- 1536, *Fire Ants and Their Control*, available at your local county Extension office. This publication gives a complete description of the biology, development, identification and control of this pest.

Table 1. Suggested Grasshopper Control in Improved Pasture and Grasses Grown for Seed

Insecticide	Concentrate per acre	Remarks for Harvest and Grazing
carbaryl (Sevin 4 F)	½ to 1½ qts	Use lower rates for nymphs. Do not apply within 14 days of harvest or grazing. Do not exceed a total of 3 quarts per acre per year.
carbaryl (Sevin 80 S)	5/8 17/8 lbs	Use lower rates for nymphs. Do not apply within 14 days of harvest or grazing. Do not exceed a total of 3 3/4 lbs pounds acre per year.
carbaryl (Sevin 80 WSP)	2/3 17/8 lbs	Use lower rates for nymphs. Do not apply within 14 days of harvest or grazing. Do not exceed a total of 3 3/4 lbs pounds acre per year.
carbaryl (Sevin XLR Plus)	½ to 1½ qts	Use lower rates for nymphs. Do not apply within 14 days of harvest or grazing. Do not exceed a total of 3 quarts acre per year.
malathion 5 EC	1½ to 2 pts	No harvest or grazing restrictions.
malathion 8 EC	1 to 11/4 pts	No harvest or grazing restrictions. Apply in sufficient water for good coverage or use 1 1/4 pts plus 1 gal. of fuel diesel oil per acre by means of an airplane or turbine blower type sprayer.
Malathion ULV	8 to 12 fl ozs	No harvest or grazing restrictions. A low volume sprayer is recommended for the application of this insecticide. See the label for appropriate equipment.
Methyl parathion 4E	1½ pts	Do not apply within 15 days of harvest or grazing.