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Mole Cricket Populations on Bahiagrass Pastures in Central Florida

By Martin B. Adjei
University of Florida, Range Cattle REC

For questions or comments regarding this publication contact  Martin Adjei

The annual cost of Tawny mole crickets to Florida pasture and turf is nearly $50 million in terms of pasture damage, replanting and chemical control. To monitor mole cricket populations on bahiagrass pastures and provide timely information for their control, "pit fall" traps were installed on ranches in Desoto, Hardee, Pasco, Polk and Manatee counties in July 1997.

In Desoto county, which had minor pasture damage in 1996-97, the weekly average number of trapped mole crickets in July 1997 was 20 nymphs per trap. The average weekly catch declined to 2 adults per trap by October 1997, and dropped to zero between December 1997 and mid May 1998. In late May 1998, a sharp increase occurred in young nymphs trapped at the Desoto site which now stands at a weekly count of 11 per trap.

In Hardee county, a damaged and renovated bahiagrass pasture showed a July 1997 count of 2 nymphs per trap. This increased to 8 juveniles per trap between August and September 1997. From October 1997 to March 1998, hardly any mole crickets were observed at this new site. Since late May 1998, we are again seeing a few nymphs (1 per trap weekly).

At the Pasco county ranch, pasture damage in 1996-97 season was moderate. During July-August 1997, weekly numbers ranged from 17 to 40 nymphs per trap. The weekly count declined to 2 adults per trap between November 1997 and April 1998. A resurgence in young nymphs (12 per trap per week) has been noticed since late May 1998.

For Polk county, two badly damaged pastures were monitored in the Green Swamp area and one slightly damaged pasture on a deep sandy ridge. At the Green Swamp locations, nymph counts during July-August 1997 were 20-80 per trap. Following a heavy rainfall, 350 nymphs were recorded in one single trap. Weekly trapped cricket numbers declined

to 5 adults by November 1997 and to zero by March 1998. Since April 1998, weekly cricket counts have ranged between 10 and 95 nymphs per trap in the Green Swamp. Weekly mole cricket juveniles trapped on the sandy ridge remained constant between 3 and 9 per trap from July to October 1997. Then it suddenly increased to 43-75 winged adults per trap after one major rainfall in November 1997. Since then, the weekly trapped counts on the ridge have stayed high (22 per trap) through May 1998 with an increasing proportion of young nymphs.

In Manatee county, weekly trapped nymphs in a pasture heavily destroyed were as high as 84 per trap in July and August 1997. We counted nearly 500 nymphs in one trap in July 1997 after a 3-inch rainfall. The weekly counts declined sharply to 0-4 per trap between September 1997 and March 1998. From April to May 1998 we have observed 8 mole crickets per trap, half of which are newly hatched nymphs.

Mole crickets have a life span of one year so we deal with a new generation each year. Soil moisture controls the movement and activity of mole crickets on bahiagrass pasture. The record 1997-98 fall to winter rainfall and associated flooding flushed out a large number of juvenile-adult mole crickets from low-lying pastures resulting in the decline of numbers trapped in all counties. Migration of crickets from flooded pasture to sandy ridges as was observed in Polk county indicates that mole crickets are fighters in inclement weather. Golf courses and home lawns which are normally well drained could provide additional shelter in wet weather. The proportion of displaced mole crickets that drowned in the 1997-98 floods or were eaten up by predators will determine the size of the nymph crop for 1998-99 season. We are already experiencing a resurgence of newly hatched nymphs on most central Florida bahiagrass pastures since the rains subsided.

Our recommendation to ranchers who plan to use the Prozap bait for control is for them to scout their property after the first heavy rains in July 1998 and locate "hot spots" (high sites to which mole cricket nymphs migrate following flooding rains). Application of bait will be more cost-effective if confined to known hot spots.