Buffalograss Webworms in Turf

by Bob Bauernfeind

This insect is often first detected in mid summer when home owners notice “something amiss” in buffalograss and bermudagrass plantings. A typical site may have visibly green grass bordered by an off-colored area (Figure 1). In off-colored areas, the grass appears mostly dead with but a little viable green grass being visible (Figure 2), whereas grass appears normal in more lush green areas (Figure 3).


Figure 1


Figure 2


Figure 3

Possibly more striking are areas of bare dirt where grass once was (Figures 4-6).

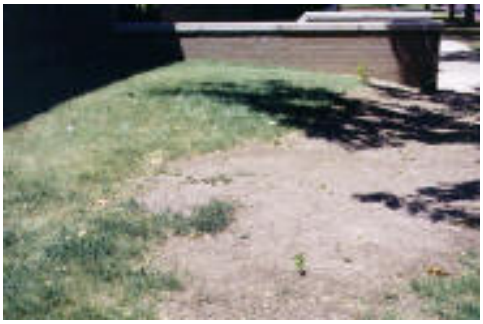

Figure 4

Figure 5

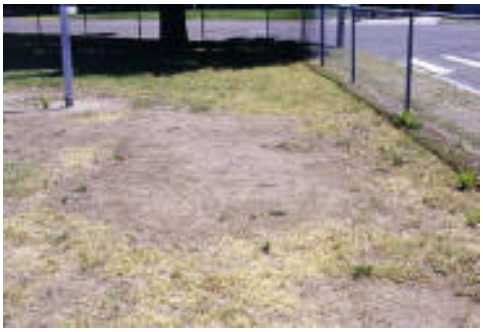

Figure 6

Zooming in on bare ground and vegetation interface areas (Figures 7-9), several features become apparent.

Figure 7

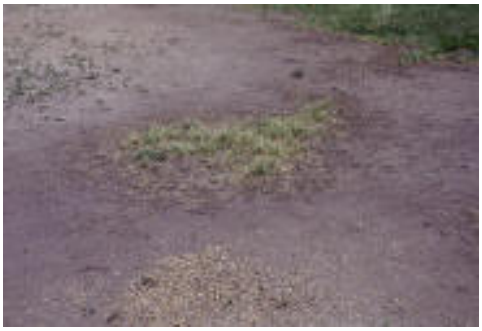

Figure 8

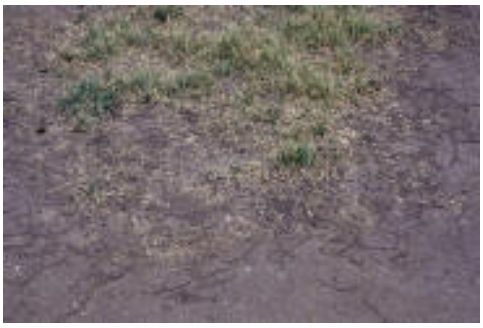

Figure 9

Bits and pieces of grass, and dried fecal pellets litter the ground (Figure 10). Most striking are soil-encrusted tubular structures (Figure 11) which sometimes cover more extensive areas (Figure 12).

Figure 10

Figure 11

Figure 12

Buffalograss webworms are somewhat unique in the realm of “sod webworms”. They are very restricted in their distribution in Kansas. In an initial distribution survey (conducted in 1966 and 1967) which included 36 counties, buffalograss webworm were documented from 10: Barber, Barton, Edwards, Ellsworth, Kingman, Meade, Pawnee, Pratt, Rice and Stafford. It is with most certainty that buffalograss webworms occur in counties which were not included in that first survey. For instance, a recent report would qualify Ford county as having buffalograss webworms.

Whereas most sod webworms species are associated primarily with cool-season grasses, buffalograss webworms are unique in their preference for both buffalograss and bermudagrass. And unlike other sod webworms which produce two generations per year in mid-latitude states such as Kansas, buffalograss webworms produce only a single generation each year.

Buffalograss webworms overwinter as first instar larvae which entered diapause soon after they hatched the previous fall. Larvae begin their feeding cycle soon after buffalograss and bermudagrasses green up in mid-April the following year. Currently, larvae are nearing the end of their feeding phase. Soon they will pupate, and from mid-August through mid-to late September moths will emerge, mate and deposit their eggs for the next generation.

Buffalograss webworm developmental stages are seldom observed. Nondescript brownish moths escape detection because they blend in well with their habitat. Females are weak fliers, and often remain motionless on the ground. Moths prefer bare soil for egglaying. Probing with their ovipositor, they deposit one egg at a time 1/4 to 1/2 -inch beneath the soil surface. After an average incubation period of 1 ½ weeks, small larvae emerge and larvae immediately form an overwintering hibernaculum.

Larval developmental stages essentially are hidden from view. As larvae begin feeding in the spring, they form a silk-lined vertical tube in the ground which serves as their main “home”. These tubes eventually average 4-inches in depth, but have been recorded as deep as 18-inches.

After they have depleted the food supply in the immediate vicinity of their vertical tube, buffalograss webworms construct surface/horizontal feeding tubes which radiate outward (to new food sources) from their vertical tubes. When constructing surface tubes, larvae gather soil particles, bits of grass leaves and stems, fecal pellets and other materials which they interweave with their silk. The daily time span for tube construction and foraging is early evening to sunrise. With the approach of day, larvae retreat into their vertical tubes where they consume their recently gathered food.

Vertical tubes also serve as the site where larvae pupate. Thus, in essence, most of the life stages proceed unseen, and are intricately/delicately intertwined and dependent upon their silk-lined abodes. In fact, there is a high failure rate when attempting to rear larvae after they have been collected/removed from their tunnel systems.

If a person wishes to view buffalograss webworms, tubes can be cut open (Figure 13). Surface tubes are the most easy to access for this purpose, although (as stated above) most will likely be empty because most larvae remain in their underground vertical tubes during the day. Buffalograss webworms reach an inch in

length when fully mature, and can best be described as having an overall white appearance with a deep caramel colored head capsule. The prothoracic shield (immediately behind the head) is a lighter butterscotch shade, as are lateral spots and dorsal patches found on each body segment (Figure 14).

Figure 13

Figure 14

Buffalograss webworms are difficult to control because they remain in their tubes. Insecticides are unable to penetrate the walls and silk lining of the protective tunnel walls. Perhaps the best chance to control buffalograss webworms is with insecticide treatments applied to grass vegetation likely to be next-in-line for foraging (i.e. grass at interfaces areas). However, heat and direct sunlight may cause the rapid degradation of insecticides registered for use against webworms. Thus, a followup treatment(s) may be required when attempting to alleviate the pressures of buffalograss webworm feeding. Because there is an intimate association between buffalograss webworms and their tunnel systems, one might use a rake to break up/destroy exposed tubes or those somewhat hidden from view in grassy areas.

When infestations are not found until heavy damage has been noticed it is sometimes best to do nothing. By the time severe damage is noticed, Buffalograss webworms are likely nearing the end of their feeding cycle. Already-existing bare spots will likely have to be renovated via seeding or sprigging. Damaged but yet-viable stands will reestablish themselves once the larvae cease their feed/foraging activities. In both instances, frequent irrigation and fertilization regimens will help speed-up the recovery process.

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Additional information can be found at: Turf Insects: Lawn and Turf Insect Management-Part 2: Webworm, Cutworm, Armyworm, Chinch Bug and Ant, MF756

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