

SURFACE/SOIL FEEDERS

ANNUAL BLUEGRASS WEEVIL (ABW)

aka: Hyperodes weevil

scientific name: *Listronotus anthracinus*

FIELD KEYS

Hosts: Annual bluegrass

Site symptoms: Wilted turf at short-cut, highly-managed, *Poa annua* sites that turn yellow to brown in small to large areas from May to August.

Plant symptoms: Grubs hatch from eggs laid in holes in leaf bases. They enter and feed on the stem. When sawdust-like frass packs the inside of the leaf stems, grubs exit to enter new stems. Older grubs exit to feed at crowns. Adult feeding produces holes in leaves or ragged leaf edges.

Site keys: Golf courses and recreational sites where *Poa annua* is intensely managed at low cutting heights - tees, greens, fairways, tennis, and lawn bowling facilities

SPECIMEN ID

Immatures are small plump legless white grubs with light brown heads. Grubs can grow to 1/2 inch. Adults are light brown to black, 1/2 inch beetles with a beak-like snout that has two elbowed antennae near its end.

SCOUTING TIPS

Over-wintering beetles become active in early to mid-spring, look for early signs of feeding in *Poa annua* turf areas near trees/shrubs with litter at base. Affected plant leaves separate easily from crown. Leaves with stems are hollowed out and frequently filled with frass. Damage may appear as early as mid-May to as late as early August. Adult feeding and egg-laying produces small holes in stems and at leaf edges. Adults can be captured with a sweep net in evening or seen with a light while crawling on turf at night. Soap or insecticidal flushes can be used to dislodge adults from turf during daylight hours. Look for over-wintering adults in litter/mulch under trees/shrubs near infestation sites.

CONTROL STRATEGIES

Cultural: Since ABW is only a pest on *Poa annua*, either manage the site to favor existing bentgrass, renovate, or sod heavily infested areas with bentgrass varieties suited for the site. Where renovation/sodding is not an option, remove litter/mulch from base of adjacent trees/shrubs.

Chemical: Scout for adults at over-wintering sites in late winter to very early spring and at vulnerable *Poa annua* sites in early to mid-spring. If chemical control is warranted both the adults and the grubs can be treated, but at different times - adults in early to mid-spring and mid to late summer with grubs late spring to mid-summer.

Note: Although MACH 2 does not control adults, it can be applied at the time of adult migration and the residual material will affect the later larvae.



GRUB



ADULT

SPECIES ACTIVITY, BIOLOGY & LIFE CYCLE



Growth stages: egg - grub (five instars)* - pupa - adult*

* - treatable stages

Life cycle: 1 year cycle

Sequence: adult - egg - grub - pupa - adult

DISTRIBUTION



SURFACE/SOIL FEEDERS

BILLBUG

aka: Bluegrass billbug

scientific name: *Sphenophorus parvulus*

Similar species: Hunting billbug

FIELD KEYS

Hosts: bluegrass, ryegrass, fescues

Site symptoms: Wilted turf that doesn't respond to water, turns brown in spots in June through August near walks, drives, or near trees or shrubs.

Plant symptoms: Grubs hatch inside leaf stems where they feed. Older grubs exit stems to feed at crowns. Sawdust-like frass can be found at base of plants.

Site keys: Sunny locations near trees/shrubs with litter/mulch at base and areas with reflected heat - drives, walks, or buildings.

SPECIMEN ID

Immatures are small, legless, white grubs with brown heads that can reach ½ inch. Adults are narrow football-shaped brown to black, ¼ inch beetles with a downward-pointing snout that has two angled antennae near its base.

SCOUTING TIPS

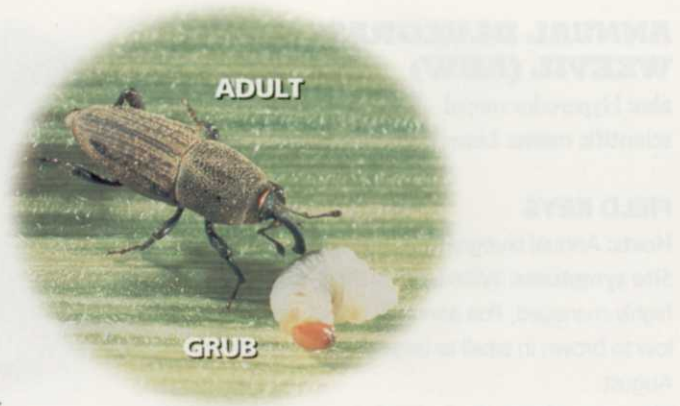
Adults are often seen crawling on warm walks or drives in early to mid-spring. Look for damaged areas near trees/shrubs with litter/mulch at base and in areas of reflected heat - walks, drives, and buildings. Damaged stems at these locations will easily pull away from crowns and may show exit holes and hollowed stems. Look for frass at the base of damaged plants on soil or in top of thatch. In off-season look for over-wintering adults in litter/mulch at the base of trees/shrubs. Use soap or insecticidal flushes to dislodge adults in season on turf.

CONTROL STRATEGIES

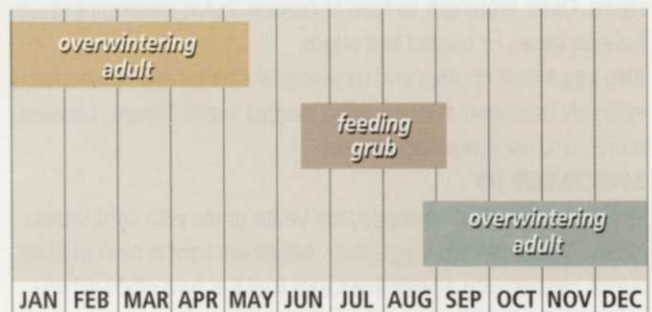
Cultural: Replant or overseed with resistant species/varieties. In bluegrass stands use fine leafed bluegrass varieties if disease is not a problem. Where disease is a problem, use high-endophyte ryegrass varieties instead. Remove litter or mulch from over-wintering locations.

Chemical: Scout for adults at over-wintering sites in late winter-early spring and vulnerable turf site areas in early to mid-spring paying attention to adjacent flat areas that show heat buildup early in the year. If chemical control is necessary, both the grub and the adult stages can be treated but at different times - adults before soil surface temperatures reach 75°F and grubs when soil surface temperatures exceed 75°F.

Note: MACH 2 is only effective against the grub stage, but because of its residual activity, MACH 2 can be applied at the adult target time.



SPECIES ACTIVITY, BIOLOGY & LIFE CYCLE



Growth stages: egg - grub (several instars)* - pupa - adults*

* - treatable stages

Life cycle: 1 year cycle

Sequence: adult - egg - grub - pupa - adult

DISTRIBUTION

