

A NEW HANDLE ON THE ATAENIUS SPRETULUS GRUB PROBLEM . . .

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After two years of intensive research on the biology and control of *Ataenius spretulus*, Dr. Harry Niemczyk and myself feel very strongly that we have a handle on this serious white grub problem of golf course greens and fairways. The solution is quite simple. Since the small black beetle and its immature stages are not always

apparent or easily monitored by direct observation, it is now possible to "predict" what stage of *Ataenius* development or life history is occurring at a given time of the year by means of concurrent natural events (i.e., the blooming of certain common flowering plants, shrubs, or trees). This method is valid because both insect and plant biology is dominated by two factors in common: 1) length of daylight and 2) seasonal changes in temperature. Therefore, the activity of the various insects and plants will follow a set pattern year after year.

I have found that the first major flights of overwintered *Ataenius* adults and their initial appearance in and on greens and fairways correspond to the first noticeable blossoming of dandelion, common blue violet, cultivated magnolia, black maple and *Poa annua* seedhead. The first eggs of *Ataenius* appear simultaneously with the blossoming of black locust, spirea, hawthorn and cottonwood seed release. First generation third instar larvae and their damage occur during the blossoming of crown vetch, chicory, milkweed, yucca and black-eyed susan. First generation adults are on the wing and second generation eggs being laid while hibiscus (rose-of-sharon, althea) and evening primrose are blooming. Second

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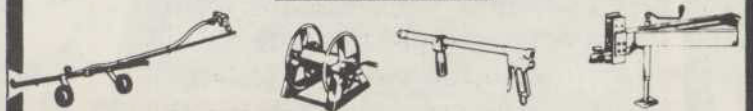
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generation larvae are feeding in greens and fairways through the blossoming of iron-wood, staghorn sumac, goldenrod and bull thistle. Finally, second generation adults are on the wing enroute to suitable overwintering sites (at the tree line of surrounding wooded areas) during new england aster bloom and bull thistle and milkweed seed release. These observations are summarized in the following table.

Based on this information, it would be wise to employ an adult control program at the onset of black locust and hawthorn blossom, and cottonwood seed release. Such a preventative measure should be used only in situations where a large population of *Ataenius* is known to be present based on damage inflicted in the previous year. In cases where no evidence of a harmful *Ataenius* population is available, periodic checks for the larvae and their damage should be made when crown vetch, chicory, milkweed, yucca and blackeyed susan come into bloom.

At this time a larval control program may be employed if needed. Generally 20 to 30 larvae per square foot will cause no apparent damage to fairways.

It is Dr. Niemczyk's and my firm belief that if the golf course superintendent is conscientious in the timing and execution of the recommended control programs, he should be able to get a handle on this turf grub problem within the next year or two.

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Approximate Time Frame	<i>Ataenius spretulus</i> Biology	Corresponding Natural Event (Phenology)
Early to Mid April	First major adult flights from over-wintering sites to greens and fairways	Blossom: Dandelion - Blue Violet Cultivated Magnolia Poa Annua seedhead
Early May	First appearance of eggs	Blossom: Black locust - Spirea Hawthorn Cottonwood seed release
Early to Mid June	Third instar larvae and their damage	Blossom: Crown vetch - Chicory Milkweed - Yucca Black-eyed Susan
Late June to Early July	First generation adults on the wing	Blossom: Hibiscus (Rose-of Sharon, Althea) Evening primrose
Mid to Late July	Second generation eggs	
August through early September	Second generation larvae and their damage	Blossom: Ironweed - Staghorn sumac Bull thistle - Goldenrod
Late September through October	Adult flights from host turfgrass to suitable overwintering sites	Blossom: New England Aster Seed Release: Bull Thistle - Milkweed

Seasonal record (*A. spretulus* biology and corresponding phenology in the Cincinnati area (Hamilton and Clermont Counties)