

Pest Facts and Impact on Crop

- White Grubs of the *Phyllophaga* genus (called "True" White Grubs) are the only ones found to cause stand losses in corn as they may be present the complete season and generations may overlap
- Damage only occurs on the young corn seedling
- Significant damage can occur from true white grub densities of one larva per cubic foot prior to planting
- There is little loss from annual white grubs as they feed for a short period only
- A C-shaped grub up to 1 ¼ inches long



Pest Symptoms/Injury ID

- Young plants are stressed and turn light tan, yellow, or purple from nutrient and moisture stress
- Plants wilt, grow slowly and may die, reducing stands
- Plants that survive are usually behind in development compared to surrounding plants



Hosts

- Research in North Dakota found primary distribution of *Phyllophaga* grubs within 100 feet of shelterbelts consisting of cottonwood, willow or similar species near row crop fields
- Oviposition and natural habitat are in wooded or grassy areas, and different species probably have different specific host plants
- Corn and other row crops are incidental hosts of larval white grubs

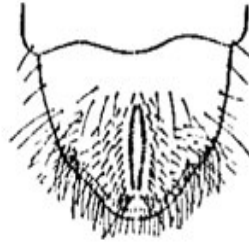
Distribution

- Although most states in the United States have at least one species, most species of *Phyllophaga* are found east of the Rocky Mountains
- There are more than 25 species in the Midwest, Northeast and South



Pest ID / Confused or Similar Species

- True white grub identified by two parallel rows (zipper) of hairs on raster (underside of tail)



True white grub or May/June beetle (3-year grub)

- Manure grubs = *Aphodius* spp.
 - Manure grubs are very small & feed on decaying organic matter in the soil



- Green June Beetle = *Cotinis nitida*
 - Green June Beetle grubs can be up to 2 inches long and if given the chance will crawl away on their back!

Management Considerations

Scout fields by watching soils for white grubs during spring tillage

- An infestation may be quite localized where vegetation and soil moisture were conducive to egg laying and grub survival
- A pesticide at planting may be warranted if there are signs of white grubs prior to planting
 - Soil samples (>2/Cu ft); Previous history
- Insecticides applied at planting or high rate of insecticide seed treatment may give some protection
- Rescue insecticides after the crop has been planted are not effective, replanting is the only remedial treatment
- No transgenic products control white grubs
- In localized areas of stand loss or reduced growth, replanting may be warranted



Annual white grub or Masked chafer (1-year grub)

- Annual white grubs = *Cyclocephala lurida*
 - Annual white grub identified by lack of parallel rows of hairs on their raster; the hairs are randomly scattered
 - Annual white grub feeds on organic matter in soil

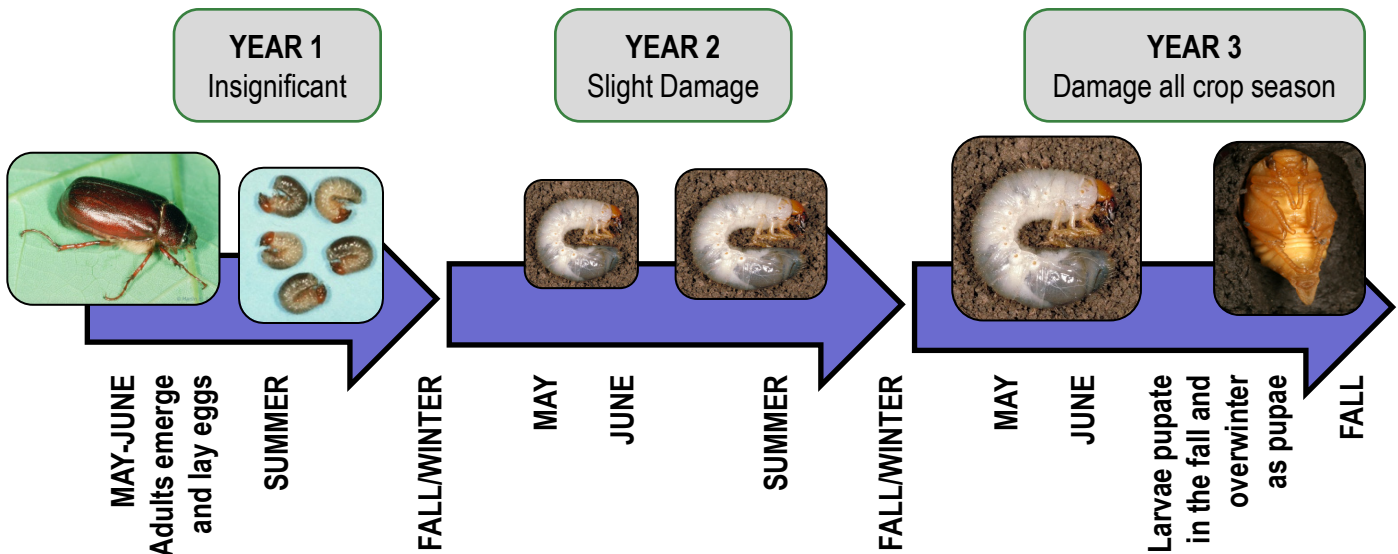


Japanese beetle (1-year grub)

- Japanese Beetle = *Popillia japonica*
 - Japanese beetle rasters form a prominent "V"

Typical Phyllophaga ("True") White Grub Life Cycle

Two species or generations may overlap within the same field



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