INSECT MANAGEMENT

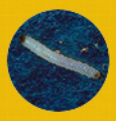
PRESEASON

OVERWINTERING VS. MIGRATING

Understanding the presence and potential impact of insect pests is critical to planning for and implementing successful insect management practices in corn-on-corn systems.

OVERWINTERING

Many insect pests of corn have the potential to survive thru the winter in major corn growing geographies. Depending on species, insects may overwinter as eggs, pupae, adults or various immature stages.


NORTHERN CORN ROOTWORM


WESTERN CORN ROOTWORM


CORN FLEA BEETLE


EUROPEAN CORN BORER


GRAPE COLASPIS


WHITE GRUB


WIREWORMS

MIGRATING

Other insect pests do not overwinter, but, instead, rely on spring weather patterns to assist with their migration from the south.


BLACK CUTWORM


CORN EARWORM


ARMYWORM

INTEGRATED PEST MANAGEMENT

DEFINING INTEGRATED PEST MANAGEMENT

- Integrated pest management is a holistic approach to combating yield-robbing pests that focuses on monitoring the life cycles and prevalence of pests in a farmer's fields to determine the best pest control methods for the current and following growing season.

WHY INTEGRATED PEST MANAGEMENT IS ESSENTIAL TO PROTECT CORN YIELDS

- As farmers across the Corn Belt continue to battle above- and below-ground insect pests year after year, a comprehensive integrated pest management approach is key to maximizing yield, especially in corn-on-corn environments.
- Measuring insect pressure helps growers think forward, making more informed pest management decisions for the following year about their seed choice and agronomic practices.

HOW TO IMPLEMENT INTEGRATED PEST MANAGEMENT ON YOUR FARM

- Each field experiences different insect pressure. Prior agronomic practices, like corn-on-corn, can create significantly higher pest pressure than in fields previously rotated with other crops.
- To get more corn per acre, farmers need to have a solid understanding of the level of pressure and type of pests they are dealing with in order to choose the best corn traits and agronomic practices to address those challenges.
    - Scouting to identify current pest pressure in your fields. Tools like insectforecast.com can help you better choose the best time to scout.
    - If pests are found during scouting, integrating best management practices to better control insect pests for the current growing season and beyond.

INSECT MANAGEMENT

SEEDBED PREPARATION & PLANTING

EARLY SEASON INSECT CONSIDERATIONS

Early season insects that feed on corn seeds or seedlings can cause plant injury, stunting, delayed emergence and/or stand loss. Soil insecticides and/or seed treatments can provide a good level of control for 3 to 4 weeks after planting. Acceleron® Seed Treatment Products utilize clothianidin, a leading insecticide, to reduce damage caused by secondary pests.

BLACK CUTWORM

Preventative treatment or rescue treatment when 2 - 4% of the plants are cut below-ground or 6-8% of the plants are cut above the soil surface and cutworms less than 1 inch long are present.

SEED CORN MAGGOT

Preventative treatment only.

WIREWORM

Preventative treatment or 1 or more per baited trap.

CHINCH BUGS

Count adults and nymphs. 10 or more on 3-inch plants and 50 or more on 12-inch plants. Lower threshold if plants are under stree.

TRUE WHITE GRUB

Preventative treatment or before planting, check 1-square-foot of soil. One white grub per square foot is enough to cause significant stand loss.

JAPANESE BEETLE GRUB

Baited wire traps can be set up 2 to 3 weeks prior to planting to see if Japanese Beetle larva are present. Currently, thresholds exist for adult feeding during tasseling only.

IPM BEST MANAGEMENT PRACTICES

ROTATE CROPS

- If you have a field that has been in continuous corn production, and you are seeing increasing insect pressure, we recommend rotating to soybeans or other non-host crops.

BUILD A STRONG DEFENSE

- If you are seeing increased pressure in a field you intend to plant back to corn in 2014, we recommend planting Genuity® SmartStax® RIB Complete® corn hybrids that provide dual mode-of-action Bt traits and deliver excellent performance.
- If rotation or Genuity® SmartStax® RIB Complete® corn is not an option for growers, using soil- or foliar-applied insecticides with Genuity® VT Triple PRO® and Genuity VT Triple PRO® RIB Complete® to manage larvae and adults is a viable option.

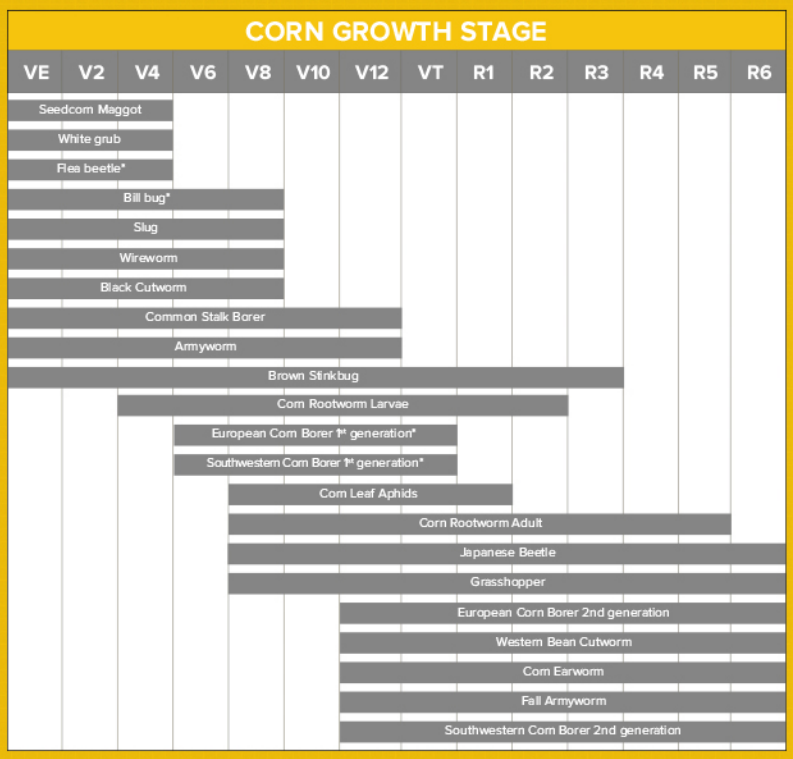
CONTINUE TO SCOUT AND STAY AHEAD

- We recommend continuing your integrated pest management program, including regular scouting, to better understand and manage your insect pressure.

INSECT MANAGEMENT

EARLY - MID - LATE SEASON

BE ON THE LOOKOUT FOR POTENTIAL EARLY SEASON INSECT PESTS



THE IMPORTANCE OF SCOUTING

In areas with high corn rootworm pressure, growers should scout their fields to assess insect damage and determine their best management practices for this year and next. Tools like insectforecast.com can help farmers determine the best time to scout for damaging pests in their fields.

INSECT FORECAST

Farmers can log on to www.insectforecast.com to learn when corn rootworm larvae are hatching, and to track the migration and moth flights of two damaging above-ground insects, corn earworm and western bean cutworm, throughout the growing season. With online and mobile access, this tool is useful to better understand when potential insect damage may occur and to help farmers with their scouting efforts.

Download agIndex to your smartphone or tablet for insect forecast updates on the go.

INSECT MANAGEMENT

MID-SEASON

CORN ROOTWORM DEVELOPMENT

Understanding the stages of corn rootworm development is essential to building an effective management strategy.

EGGS

- Laid in the soil during the late summer/early fall.
- Overwintering of both Northern Corn Rootworm and Western corn rootworm eggs in soil.
- Typically begin to hatch and feed on corn roots in early June.

PUPAE

- Resting stage; no feeding occurs.
- Period of transition from larva to adult.

LARVAE

- Hatch and begin feeding on corn roots in early June.
- Feed on roots for approximately 3 weeks prior to pupation.
- There are 3 stages (instars) of larval development.
- The greatest amount of root feeding/damage is done by 3rd instar larvae.

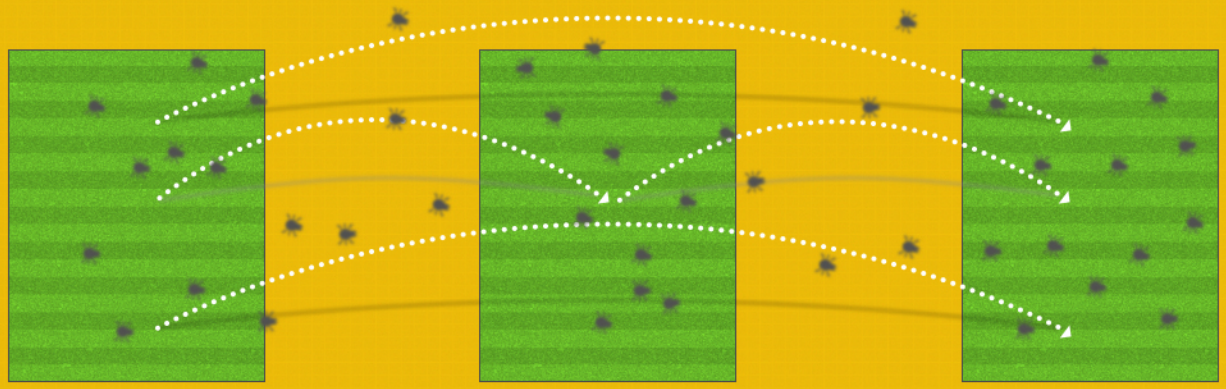
ADULT

- Emergence begins in early July with peak emergence around the beginning of August.
- Male beetles emerge about 2 weeks prior to female beetles.
- Adult beetles can feed on corn leaves, pollen and soft kernels, but cause the most damage when feeding on silks due to possible interference with pollination.
- It generally takes 2-3 weeks from the time female beetles emerge and mate until they are gravid (pregnant).

LATE SEASON

CORN ROOTWORM FIELD MANAGEMENT

Insects leave "donor" fields in favor of less mature "receiver fields" to feed and lay eggs. Neutral fields will have a few insects coming in and a few insects leaving but are generally relatively balanced.



"DONOR" FIELDS

Have finished pollinating and beetle populations are migrating from these fields.

"NEUTRAL" FIELDS

Are pollinating at the same time as other fields within an area and thus have less risk of receiving mass movement of beetles.

"RECEIVER" FIELDS

Pollinate and/or mature later than surrounding fields and are attractive to beetles. Careful long-term management is needed in these fields because of the potential for increased egg laying from CRW that migrate to the field.