Key Points

- One BCW larva can clip up to four corn plants during its lifetime.\(^1\)

- Stand loss from BCW damage can decrease yield potential.

- Some corn fields are more susceptible to damage than others.

- BCW can be confused with the dingy cutworm; making it important to know the difference.

- Scouting should take place from the time corn emerges until the V5 growth stage.

- Several management options are available to control BCW, including preventative and rescue treatments.

Black cutworm (BCW, Agrotis ipsilon) overwinters in the south. Moths can migrate north as early as February, depending on weather conditions (Figure 1). Moths feed on available vegetation, such as winter annuals, in the early spring and deposit eggs in soil cracks or on dense and low growing vegetation. Black cutworm outbreaks most often occur in fields that were weedy prior to planting. When weeds, especially chickweed, are destroyed, BCW feed on the newly emerging corn instead. Corn is most susceptible to BCW feeding from the time it emerges to the V4 growth stage. Black cutworm damage may be more prominent in fields that are: poorly drained and/or have low areas, surrounded by natural vegetation, utilize late or reduced tillage, weedy prior to planting, planted late, or planted with corn after soybean.\(^2\)

Scouting and Identification

Fields should be scouted for BCW from the time corn emerges until the V5 growth stage. Plants cut below the soil by BCW may be partially pulled under the soil and can appear as if angled out of the ground surface. These plants wilt and discolor as they die. In addition to cut or missing plants, leaf feeding is an early indication of BCW damage (Figure 2). When scouting, larvae can be found by digging in the soil near a damaged plant. The growth stage of the larva can be estimated by measuring body length; when fully grown, BCW are about 1.5 inches long. Purdue University recommends checking five areas of a field and then randomly selecting 20 consecutive plants to inspect for damage, for total of 100 plants for the field.\(^1\) Count and record the number of plants cut or damaged by BCW within each sample set.

Threshold

Purdue University recommends applying an insecticide when 3% or more of the plants are cut and larvae are still present.\(^1\) Iowa State University has created a dynamic action threshold to account for fluctuations in market price of corn and inputs. The action threshold calculation determines when it is economical to treat for BCW based on plant population, expected yield, anticipated market value, and the cost of control.\(^3\)

Managing Black Cutworm in Corn

If corn is clipped above ground there is a chance it may survive, but if it is clipped below ground (Figure 4) there is a higher chance that it will die. Dry soils often favor below-ground clipping. Clipped plants have a higher risk for disease infection. Wet soils often favor aboveground clipping. Once corn is at the V5 or V6 growth stage, it is less susceptible to BCW damage.

Management

Innovative seed trait and seed treatment technologies have the potential to reduce the risk of stand loss from BCW. Products with Genuity® SmartStax® technology provide above-ground protection from BCW damage. Genuity® SmartStax® technology may be complimented with Acceleron® Seed Applied Solutions for corn with Poncho®/VOTIVO®, which includes clothianidin insecticide to provide additional protection for BCW. Use of these technologies has the potential to reduce the risk of stand loss from BCW.

Another good management option is to start with a clean seed bed. Because larvae need a food source prior to corn emergence, BCW can not survive if weeds are tilled or treated with a herbicide 2-3 weeks before corn emergence. A pre-plant application of Roundup® agricultural herbicide can help keep the seed bed clean. Additionally, a fall application of a Roundup® agricultural herbicide tank mixed with 2,4-D can be an effective way to manage winter annual weeds. When controlling winter annual weeds such as purple deadnettle and common chickweed, fall herbicide applications can be more effective than spring applications.

Preventative insecticides may be another management option, although many universities question their worth due to the sporadic nature of BCW. Rescue treatments are recommended if action thresholds are met. There are several post-emergence insecticide rescue treatments available. Be sure to follow label directions and make sure that insecticide treatments comply with insect resistance management requirements.

Sources


Web sources verified 05/09/16. 140603060405