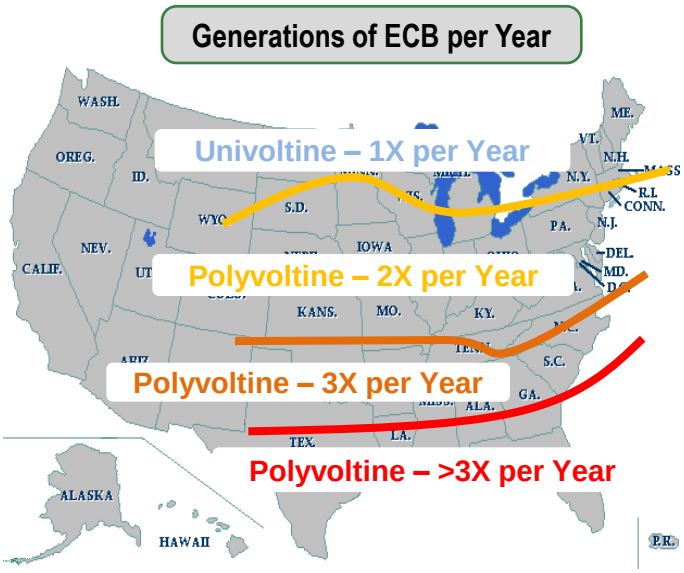
CROPFOCUS — European Corn Borer

Pest Facts and Impact on Crop

- Latin name: *Ostrinia nubilalis*
- Native to Europe and western Asia, ECB is found throughout the Corn Belt east of the Rocky Mountains – there is a similar species in Asia
- One of the most important pests of corn in the United States
- One larva per plant tunneling in stalk may reduce yield by up to:
  - 5-8% pre-tassel
  - 2-5% post-tassel
- European corn borer is able to feed on most plants with fleshy parts or stems
  - Broadleaf and grassy weeds
  - Other crops: soybeans, peppers, tomatoes, strawberries, etc.



Injury Symptoms

- Larvae feed on all above-ground plant parts
- Pre-tassel feeding:
  - Small larvae inside whorl and leaf midrib
  - Large larvae tunnel into stalk at base of plant
- Tassel-stage and later feeding:
  - Small larvae in leaf collar and silks
  - Large larvae tunnel into stalks, ear, ear shank

Injury Symptoms (continued)

- Yield reductions:
  - Disrupted water/nutrient flow
  - Damaged kernels
  - Broken stalks and dropped ears
- Quality reduction:
  - Broken kernels
  - Ear rot infection source
  - Ear rots develop mycotoxins
  - Lower value at elevator
  - Loss of grain in storage

Comparison IDs

Corn Earworm

- Large, many colors
- Found in ear only

Sod Webworm

- Usually found in leaves
- Accompanied by slight webbing

Southwestern Corn Borer

- Southern areas of US only
- Dark spots on white background or pure white in late fall

Lesser Corn Stalk Borer

- Purple bands
- Found sporadically, rarely significant

Management

Prediction

- ECB can be found in the field over the winter, but severity of the upcoming problem on new corn plantings is difficult to predict and depends greatly on in-season weather and pest interactions
- The large number of predators, parasites and pathogens can also make a high population crash unexpectedly

Management (continued)

Prediction (continued)

- Adults are mobile, and fields with egg-laying cannot be predicted
- Egg survival and synchronization to the crop is highly weather-dependent
- In areas of multiple generations, late-planted fields are more at risk than early-planted fields

In-Season Monitoring

- Peak moth flight activity is determined by pheromone and light trap catches and can be used to time a more detailed field scouting program for pesticide application
  - Scout fields during first and later generations
  - Decide if expected injury level warrants action
  - Apply an insecticide by air as needed
- Because of the non-synchronous nature of the pest life cycle, use of insecticides rarely gives better than 80% control

Use of Transgenic Products and Technologies

- Transgenic Bt corn gives unsurpassed corn borer control without scouting
  - Herculex® I, Herculex® XTRA, YieldGard® CB
  - Planting of a non-transgenic refuge is mandatory when using most current transgenic products
    - 20% in Corn Belt and northern states
    - 50% in southern states or counties where cotton is grown

European Corn Borer Annual Cycle in Corn