

# Commercial Corn IPM

Donna M. Tuckey

## Insects<sup>1</sup>

### Soil Insects:

#### (Seedcorn Maggot, Wireworms, and White Grubs):

- Early and no-till plantings are at the greatest risk of attack by soil insects.
- Scouting for these pests involves placing a baited wire trap into the soil approximately 2-3 weeks prior to planting. This method is discussed at length in the Field Crop PMG (456-016).
- The necessity of treatment depends on the average percentage of damaged seeds.
- Test for white grubs additionally by counting the number in a 1 ft<sup>2</sup> x 6-inch area. Treat if 1-2 grubs are found per sample.

### Foliar Insects:

#### Cutworm:

- Late-planted, minimum-tillage fields with heavy spring weed growth on poorly drained soils are at greatest risk for cutworm infestation. Also, coarse grasses and weeds such as dock and yellow rocket are attractive to the females for egg laying.
- Scout fields twice a week from spike through the 5th leaf stage for small irregular holes in the leaves and for cut plants. If cutworms are present, check 10 sets of 20 plants and count the percentage of cut or damaged plants. Also note the number of cutworms under clods and in the top 2 inches of soil around the base of damaged plants.
- Prior to the 3rd to 5th leaf stage, treat if 10% or more of the plants show fresh leaf feeding and cutworms are present. During the 3rd to 5th leaf stage, treat if 5% of the plants are cut and there are 4 or more cutworms per 100 plants.

#### European Corn Borer (ECB):

- ECB is a larger problem in corn being grown for grain than for silage; silage corn is rarely treated.

- Scout grain corn for egg masses at 2-3 day intervals from late-June through mid-July or when leaves are extended 17-24 inches (check 20 consecutive plants at 5 sites in the field).
- Apply treatment if 35-50% of the plants have an average of one or more egg masses.
- Corn varieties containing the Bt gene provide good protection against ECB as well as other larvae (i.e. corn earworm, fall armyworm, etc.), but should be evaluated locally for cost effectiveness.

#### Western Corn Rootworm (WCR):

- WCR is a problem in plantings of continuous corn but can be controlled easily through crop rotation.
- In continuous corn, sampling for beetles should occur in July and August to determine whether control methods will be needed the following year. Methods include using yellow sticky cards or making ear zone counts. Both are discussed at length in the Field Crop PMG (456-016).

*Bill bugs, true armyworms, fall armyworms, spring armyworms, slugs and snails, stalk borers, garden symphylans, grasshoppers, Flea beetles, spider mites, corn leaf aphids, and Japanese beetles* can all cause economic damage to corn. Specific recommendations for their control as well as scouting techniques can be found in the Field Crop PMG (456-016).

Consult the Field Crop PMG (456-016) for insecticide recommendations.

## Diseases<sup>2</sup>

### Seed and Seedling:

- Treated seed will provide control and should be utilized whenever possible.
- Consult the Field Crop PMG (456-016) for seed treatment recommendations and instructions.

## Foliar:

### Gray Leaf Spot:

- Hybrids that are more resistant and slow to blight may prevent significant yield reduction, and are recommended for producers who experience gray leaf spot.
- If the disease has been a consistent problem, consider planting different crops in rotation with corn or rotating away from corn for a few years to reduce inoculum levels.

### Southern and Northern Corn Leaf Blight:

- Use resistant hybrids, especially in no-till production. Chemical controls are not recommended.

## Weeds<sup>3</sup>

- Scout each field and keep records of the weed species present, their location and population density.
- Design a control program based on weed records for the specific problems in each field.
- Herbicides are useful tools in most weed management programs, but should be used in conjunction with cultural and mechanical methods of weed control.
- Weed-free seed, cover crops, and crop rotation are valuable cultural tools for weed control. Perennial broadleaf weeds, especially, can be controlled more effectively in corn than in soybeans.
- Mechanical practices such as primary tillage and cultivation are extremely useful, especially in controlling perennial broadleaf weeds.
- Select the herbicide that best fits your specific weed infestation. Preplant-incorporated, preemergence, postemergence and directed postemergence treatments are available.

Consult the Field Crop PMG (Publication 456-016) for herbicide recommendations.

## Nematodes<sup>2</sup>

- If nematode presence is suspected, soil samples should be collected in the fall immediately after harvest--no later than November 20. In Virginia, the Nematode Advisory Program provides a diagnostic test at a charge of \$11 per sample. Contact the local Extension agent for details on sampling procedure and also for interpretation of the results.
- If treatment is necessary, recommendations are available in the Field Crop PMG (456-016).

## References

- (1) Youngman, R.R. INSECTS (Grain Crops, Soybeans, Forages) in The Pest Management Guide (PMG)-Field Crops. 2000. Virginia Cooperative Extension (Publication 456-016), pg. 131-155.
- (2) Stromberg, E.L., Phipps, P.M., Grybauskas, A.P., and Mulrooney, R.P. DISEASES and NEMATODES (Grain Crops, Soybeans, Forages). The Pest Management Guide (PMG)-Field Crops. 2000. Virginia Cooperative Extension (Publication 456-016), pg. 73-75.
- (3) Hagood, E.S., Swann, C. W, Wilson, H.P., Ritter, R.L., Majek, B.A., Curran, W.S., Chandran, R. WEEDS (Grain Crops, Soybeans, Forages) in The Pest Management Guide (PMG)-Field Crops. 2000. Virginia Cooperative Extension (Publication 456-016), pg. 243-289.

**Note:** The Pest Management Guide is available on-line at <http://www.ext.vt.edu/pubs/pmg>.

**For further information, contact your local Extension agent.**