Virginia Cooperative Extension

Integrated Pest Management

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Commercial Soybean IPM

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Insects[1]

Corn Earworm and other podworms:

- Moths are attracted to open canopied, late blooming, and drought-stressed beans.
- Extension monitors moth flights through a series of blacklight traps and prepares weekly scouting advisories. Contact your local Extension agent for an advisory report.
- Begin weekly scouting for larvae (worms) in mid-August and continue through September.
- Scout at approximately 10 different sites per 40 acres with a sweep net, a rigid beat cloth or a ground cloth for scouting instructions. Make note of any beneficial organisms that might naturally reduce common earworm populations.
- To determine if an insecticide spray is needed, see the thresholds in Table 1 or utilize the economic threshold calculator found online at http://www.ipm.vt.edu/cew.

Defoliators: (Mexican Bean Beetles, Bean Leaf Beetles, Blister Beetles, Armyworms, Green Cloverworms, and Grasshoppers)

- These insects generally do not cause economic damage, but may reach levels which require control.
- Scout at least weekly during late July through September, making sure to note natural controls (i.e. cloverworms infected with fungal disease or Mexican bean beetle mummies).
- Treat when defoliation reaches 40% with 2-3 beetles per plant at seedling stage, at prebloom when defoliation exceeds 30%, with 20 or more adults and/or larvae per 3-foot of row, and at bloom and podset when defoliation exceeds 15% with 16 or more adults and/or larvae per 3-foot of row.

Leaf Feeders: (Thrips, Potato Leafhoppers, and Spider Mites)

- These insects rarely require treatment, but should be monitored throughout the season, particularly during extreme weather. Consult the Field Crop PMG (456-016) for more specific information.

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

Table 1. Corn Earworm Thresholds In Soybeans[1]

Sampling Tool	Row Width	Rows Sampled	Threshold
Sweep Net[2]	7"	5	2.5
	14"	3	2.4
	21"	2	3.1
	36"	1	3.1
Rigid Beat Cloth[3]	7"	2	0.9
	14"	1	0.7
	21"	1	1.2
Beat Cloth	30"	1 or 2	1.0
Standard or Rigid[4]	36"	1 or 2	1.2

[1] Only count worms 3/8 inch long or longer.
[2] Based on a 15 sweep sample.
[3] Number per sample.
[4] Number per row foot rather than number per sample.

Diseases[2]

Seed and Seedling:

- Seed treatments help prevent these diseases and should be applied to seed with a germination rate of 75-85% (higher quality seed (>85% germination) will not require treatment; lower quality seed (<75% germination) should be recleaned and retested before a final determination is made).
- Consult the Field Crop PMG (456-016) for seed treatment recommendations and instructions.

Foliar, Stem, and Pod:

- Foliar-applied fungicides have not been shown to consistently and significantly increase yield in the event of these diseases; however, seed quality is generally improved.

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Weeds[3]

- 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 weed control tools, but should be used in conjunction with cultural practices such as proper fertilization, liming, crop rotation and cultivation (i.e. morning-glory may be controlled by rotating to corn and applying a broadleaf herbicide for control in the corn crop).
- Herbicide resistant varieties (i.e. Roundup Ready, Liberty Link, etc.) also aid in weed management.
- ALWAYS control existing vegetation at or prior to soybean planting (full season or double crop).
- Select preemergence and/or postemergence herbicides at rates that will control weeds after planting.
- Timing is critical when making herbicide applications

Consult the Field Crop PMG (Publication 456-016) for information on herbicide selection.

Nematodes[2]

- Soil and plant samples should be taken in fields suspected of nematode problems. In Virginia, the Nematode Advisory Program provides diagnostic and predictive assays ($11 for vermiform, $19 for cyst). Sample results will help determine control strategies for the following year. 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).
- Rotation, fallow and use of resistant cultivars will also reduce nematode populations.
- Soybean varieties with resistance to certain cyst and root knot nematodes are available and should be used if presence is confirmed.
- No soybean cultivars are resistant to all types of nematodes.

References

(1) Herbert, D.A., Jr. INSECTS (Soybeans) in *The Pest Management Guide (PMG)-Field Crops*. 2000. Virginia Cooperative Extension (Publication 456-016), pg. 165-173.

(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. 76-84.

(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. 290-329.

Note: The Pest Management Guide is available on-line at http://www.ext.vt.edu/pubs/pmg. Also, the Soybean Production Guide (Tidewater Agricultural Research and Extension Center Information Series No. 408) is updated annually and may provide additional information. It is available on-line at http://www.vaes.vt.edu/tidewater/soybean/soyproduction/soyguide.html.

For further information, contact your local Extension agent.