

Commercial Sweet Potato IPM

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Insects

An insecticide application is often incorporated into the soil, at planting, to provide preventative control of cutworms, flea beetle larvae, grubs, and wireworms. Additional treatments may be necessary for continued control as the season progresses. For soil and foliar applied insecticide recommendations, consult the Commercial Vegetable Production Guide (456-420).

Cucumber Beetles/Rootworms:

- No economic thresholds have been established, apply foliar treatment if beetles are present.
- Spring cultivation will help expose larvae to predation and may remove beetle food sources.

Cutworms:

- If cutworms are actively cutting plants, a postplant contact treatment (foliar) may be used.

Flea Beetles:

- No economic thresholds have been established; apply foliar treatment if beetles are present.
- Plowing under weed and crop debris after harvest may disturb the lifecycle of this pest.

White Grubs:

- No economic thresholds have been established for sweet potatoes.
- Spring cultivation will disturb grub feeding and expose them to predation.
- Areas that were recently in sod or that were previously infested with grubs should be avoided.

Wireworms/Click Beetles:

- There are several methods for monitoring wireworm populations:

Method 1: Randomly place one bait station per acre throughout the field 2-3 weeks before planting. Bait should consist of 1 cup of untreated wheat and 1 cup of untreated, shelled corn buried 4 inches deep and

covered with ground. Black plastic should be placed over the ground covering the station. At the end of 10-14 days, the stations should be dug up and the number of wireworms counted. If an average of one wireworm per bait station is found, a soil insecticide should be applied.

Method 2: If the soil temperature is 45-85°F at the 6-inch depth and soil moisture is equivalent to that desired for planting, soil samples from 20 random sites throughout the field can be collected. Samples should represent a profile 12 inches deep and 6 inches in diameter. These samples should be sifted to determine the number of wireworms. If an average of 5 or more wireworms in 20 samples is found, a soil insecticide should be applied.

Method 3: Use a blacklight trap to monitor the flight activity of the click beetle (adult). As activity increases a weekly insecticide regimen should be followed until activity ceases.

- Spring cultivation will help disturb the wireworm lifecycle.
- Areas that were recently in sod or that were previously infested with wireworms should be avoided.

Diseases

Crop rotations of at least 2 years may provide additional control of ALL field diseases.

Black Rot and Scurf:

- No economic thresholds have been established for sweet potatoes. Roots are typically dipped in the appropriate fungicide and planted immediately for control of black rot and scurf.
- Good sanitation and management practices are critical for control. Whenever possible, use sprouts that have been cut off above the soil line for transplanting. Also, avoid applying fertilizers after July 1, bruising the roots during harvest, and low temperatures and relative humidity during curing.

Fusarium Wilt:

- No economic thresholds have been established; use resistant varieties in areas where disease is likely.

Soft Rot:

- No economic thresholds have been established; use a fungicide during bedding and at harvest.
- Good sanitation practices and limited handling are the keys to control in stored sweet potatoes.

Soil Rot:

- No economic thresholds have been established for sweet potatoes.
- Crop rotation, clean seed roots and clean beds, and a low pH of 4.8-5.2 will deter fungal growth.

Consult the Commercial Vegetable Production Guide (456-420) for fungicide recommendations.

Weeds

- Scout each field and keep records of weed presence, location and population density.
- Design a control program based on weed records for the specific problems in each field.
- *Cocklebur*, *common lambsquarter*, *morningglory*, *smooth pigweed* and *yellow nutsedge*, may be problem weeds in sweet potatoes.
- Herbicides are the most valuable tools in a weed management program, but should be used in conjunction with cultural and mechanical/physical methods of weed control whenever possible.

Consult the Commercial Vegetable Production Guide (456-420) for herbicide recommendations.

Nematodes

- The two most common species affecting sweet potatoes are the *root knot* and *lesion nematodes*.
- In Virginia, both diagnostic and predictive nematode assay programs are available. Diagnostic assays help determine the cause of problems during the growing season. Diagnostic samples should be sent to the Disease Clinic at Virginia Tech for analysis and are processed free of charge. Predictive nematode assays are done on samples collected after harvest. These are also sent to Virginia Tech, but must be collected in the fall no later than November 20. Predictive samples are processed at a cost of \$11 per sample. Contact the local Extension office for details on nematode assays.
- Sanitation and good cultural practices such as obtaining nematode-free roots, cleaning soil from machinery before using it at different locations, and crop rotation with non-host crops are the best preventative measures against nematodes.

Consult the Commercial Vegetable Production Guide (456-420) for nematicide recommendations.

References

Alexander, S.A., Caldwell, J.S., Hohlt, H.E., Nault, B.A., O'Dell, C.R., Sterrett, S.B., and Wilson, H.P. 2000. Virginia Commercial Vegetable Production Recommendations (456-420). Virginia Cooperative Extension (pg. 148-150).

For further information, contact your local Extension agent.