

# Commercial Crop Production: Sweet Potato

## Sweet Potato

### Integrated Sweet Potato Disease Management

Successful management of sweet potato diseases requires the same strategies as other vegetables (see Chapter viii). Using resistant varieties, starting with clean seed stock and good sanitation practices are essential to minimizing diseases of sweet potatoes.

**Use disease-resistant varieties.** Select resistant varieties (Table 1) based on the disease profile for your production region.

**Use virus-tested foundation seed.** A combination of aphid-transmitted viruses commonly infect sweet potatoes and can significantly reduce yields by up to 25%-40% even though the symptoms they induce may be very mild. It is not yet possible to totally prevent virus infections in sweet potato but using virus-tested foundation seed and a good on-farm seed program can minimize their effects on yield. The LSU AgCenter Sweet Potato Research Station produces virus-tested foundation seed through the [LSU AgCenter Foundation Seed](#) program. To learn more, contact:

#### Sweet Potato Research Station

LSU AgCenter  
130 Sweet Potato Road  
Chase, LA 71324

Phone: 318-435-2155  
Fax: 318-435-2110

For most growers, it will be necessary to go through a one-year on-farm increase of planting materials from the foundation seed. The foundation seed should be bedded and the seed crops produced should be kept as far away from older virus-infected sweet potato crops as possible to reduce the rate of re-infection with viruses.

**Use good sanitation practices.** Several bacterial and fungal pathogens that cause sweet potato diseases (bacterial root rot, Fusarium root rot, black rot, foot rot, scurf, as well as root-knot nematode) can be carried in the roots and transmitted onto slips. The use of routine sanitation measures is an essential part of an integrated management program for controlling sweet potato diseases caused by bacteria and fungi. The following sanitation tactics should be used for disease prevention.

1. Select seed free from disease or nematode cracking.
2. Cut transplants at least one inch above the soil rather than pulling slips.
3. Bed in problem-free area and avoid repeated bedding in the same site.
4. Rotate beds and production fields on a regular basis.

**Foliar fungicides.** Data are lacking to suggest that fungal leaf diseases cause any significant effect on sweet potato yields in the southeastern United States. Thus, while some fungicides (Table 2) may be labeled for controlling these foliar diseases, they have not been evaluated for efficacy or crop tolerance on sweet potatoes in Louisiana. Fungicide sprays for black rot at transplanting are only recommended if black rot was observed on “seed” roots or previous year crop. To avoid the buildup of pathogens with fungicide resistance, fungicides should be alternated with fungicides with a different mode of action (see Chapter iv).

**Table 1. Sweet potato variety reactions to common diseases in Louisiana.**

**Table Legend**

Reaction	Abbreviation
Susceptible Reaction	S
Resistant Reaction	R
Intermediate Reaction	I
Unknown Reaction	-

Variety	Rhizopus Soft Rot	Southern Root-knot Nematode	Guava Root-knot Nematode	Soil Rot	Fusarium Wilt	Sclerotial Blight	Fusarium Root Rot	Bacterial Root Rot
Bayou Belle	R	I-R	S	I-R	R	-	-	S
Beauregard	R	S	S	R-I	R	I	R	S
Bellevue	I	HR	S	R	R	-	-	S
Bonita	S	R	S	I	I-R	-	S-I	S
Burgundy	-	R	-	I-R	R	-	-	S
Centennial	-	S	R	S	I-R	I-S	I	R
Covington	I	I-R	S	I-R	R	-	-	-
Evangeline	R	HR	I-S	I-R	R	-	R	S
Hernandez	I-S	R-I	S	R-I	I-R	-	I	R
Jewel	I	I-R	R	S	R	I	I	I
Murasaki-29	R	HR	R	I-R	R		R	
Orleans	R	S	S	R-I	R	-	R	S
Porto Rico (Unit 1)	-	I-S	-	S	S	S	R-I	R

**Table 2. Recommended pesticides, rates and pesticide use restrictions for Bacterial Root Rot (*Dickeya dadantii*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Sodium hypochlorite (chlorine)		100-150 ppm <sup>5</sup>		1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Maintain free chlorine between 100-150 ppm, pH 6.5-7.5. Replace wash water as often as possible or when it becomes obviously dirty.

**Table 3. Recommended pesticides, rates and pesticide use restrictions for Black Root Rot (*Ceratocystis fimbriata*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Mertect 340-F	Thiabendazole (seed root dip only)	1	107 fl oz/100 gal <sup>5,6</sup>		1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Treat seed roots for 1-2 mins and plant immediately. Replace wash water as often as possible or when it becomes obviously dirty.

<sup>6</sup> Do not use treated roots for food or animal feed.

**Table 4. Recommended pesticides, rates and pesticide use restrictions for Foot Rot (*Plenodomus destruens*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Mertect 340-F	Thiabendazole (seed root dip only)	1	107 fl oz/100 gal <sup>5,6</sup>		1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Treat seed roots for 1-2 mins and plant immediately. Replace wash water as often as possible or when it becomes obviously dirty.

<sup>6</sup> Do not use treated roots for food or animal feed.

**Table 5. Recommended pesticides, rates and pesticide use restrictions for Fusarium Root Rot (*Fusarium* spp.) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Proper curing at harvest, good sanitation practices, use of high-quality seed roots and prevention of wounding by controlling nematodes and insects are the most effective strategies for reducing Fusarium root rot.				

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<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

**Table 6. Recommended pesticides, rates and pesticide use restrictions for Rhizopus Soft Rot (*Rhizopus* spp.) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Botran 5F	Dicloran	14	0.6 qt/100 gal		1 app <sup>5</sup>
Scholar SC (in-line dip only)	Fludioxonil	12	16-32 fl oz/100 gal		1 app <sup>5,6</sup>
Scholar SC (spray application only)	Fludioxonil	12	16 fl. oz/200,000 lb of sweet potatoes		1 app <sup>7</sup>
Bio-Save 10 LP		NA	1.1 lb/30 gal		

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> For postharvest disease control. Dip sweet potatoes for 5 to 10 seconds in a well-agitated suspension. Do not expose treated roots to direct sunlight.

<sup>6</sup> To apply as a spray use 16 fl oz/200,000 lb of sweet potatoes. Refer to label for application directions. Do not recirculate suspension where black rot is a problem.

<sup>7</sup> Ensure Scholar SC remains in suspension by using agitation. Ensure proper coverage of the sweet potatoes. Mix 16 fl oz of Scholar SC in an appropriate water, wax/oil emulsion, or aqueous dilution of a was/oil emulsion.

**Table 7. Recommended pesticides, rates and pesticide use restrictions for Sclerotial Blight (*Sclerotium rolfsii*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Botran 5F	Dicloran (seed root dip only)	14	0.6 qt/7.5 gal <sup>5</sup>		1 app
Botran 5F	Dicloran (spray <sup>8</sup> application only)	14	5.73 oz/14 gal <sup>6</sup>		1 app
Quadris Flowable	Azoxystrobin	11	0.4-0.8 fl oz <sup>6</sup>	0	120 fl. oz./A/yr
Satori	Azoxystrobin	11	0.4-0.8 fl oz <sup>6</sup>	0	120 fl. oz./A/yr
Willowood Azoxy 2SC	Azoxystrobin	11	0.4-0.8 fl oz <sup>6</sup>	0	123 fl. oz./A/yr
Aprovia Top	Difenconazole + benzofindiflupyr	7+3	10.5-13.5 fl oz <sup>7</sup>	14	27 fl oz/A/yr

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Dip seed roots for 10-15 seconds in a well-agitated suspension. Drain and bed immediately. Prepare a fresh suspension daily.

<sup>6</sup> Rates are per 1,000 linear feet of row on a 42-inch plant bed. Refer to the label for modes of application.

<sup>7</sup> No more than two applications of Aprovia Top Fungicide may be applied on a 7-day interval. All other applications must be applied no closer than a 14-day interval.

**Table 8. Recommended pesticides, rates and pesticide use restrictions for Scurf (*Monilochaetes infuscans*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Botran 5F	Dicloran (seed root dip only)	14	0.6 qt/7.5 gal <sup>5</sup>		1 app
Botran 5F	Dicloran (spray <sup>8</sup> application only)	14	5.73 oz/14 gal <sup>6</sup>		1 app
Mertect 340F	Thiabendazole (seed root dip only)	1	107 fl oz/100 gal <sup>7,8</sup>		1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Dip seed roots for 10-15 seconds in a well-agitated suspension. Drain and bed immediately. Prepare a fresh suspension daily.

<sup>6</sup> Rates are per 1,000 linear feet of row on a 42-inch plant bed. Refer to the label for modes of application.

<sup>7</sup> Treat seed roots for 1-2 mins and plant immediately. Replace wash water as often as possible or when it becomes obviously dirty.

<sup>8</sup> Do not use treated roots for food or animal feed.

**Table 9. Recommended pesticides, rates and pesticide use restrictions for Seed-borne and soilborne fungi that cause decay, damping off or seedling blight in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Dynasty 0.83F	Azoxystrobin	11	0.10 to 0.38 fl oz per 100 lb of propagating roots <sup>17</sup>		1 app
Maxim 4 FS	Fludioxonil	12	0.10 to 0.38 fl oz per 100 lb of propagating roots <sup>17</sup>		1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Apply uniformly to roots as a water-based slurry.

**Table 10. Recommended pesticides, rates and pesticide use restrictions for Soil Rot or Pox (*Streptomyces ipomoea*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Resistant varieties (Table 1) should be used. Soil pH should be maintained below 5.2 to minimize disease severity if a susceptible variety is used.				

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<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

**Table 11. Recommended pesticides, rates and pesticide use restrictions for White Rust (*Albugo ipomoeae-panduratae*) in sweet potato crops.**

Consult the current specimen label for further information on each product.

Product Choices <sup>1</sup>	Chemical Name	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Quadris Flowable	Azoxystrobin	11	6.0-15.5 fl oz	0	120 fl. oz.
Satori	Azoxystrobin	11	6.0-20.0 fl oz	0	120 fl. oz.
Willowood Azoxy 2SC	Azoxystrobin	11	6.0-15.5 fl oz	0	123 fl. oz.
Reason 500 SC	Fenamidone	11	5.5-8.2 fl oz	14	16.4 fl oz
Cabrio EG	Pyraclostrobin	11	8-16 fl oz <sup>5</sup>	0	48 fl oz

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Do not make more than one (1) application of Cabrio before alternating to a labeled non-Group 11 fungicide with a different mode of action.

