Commercial Crop Production
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 percent 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 provides information on purchasing virus-tested foundation seed: http://www.lsuagcenter.com/en/our_offices/research_stations/Sweetpotato/Features/misson+and+Foundation+Seed+Programs/index.htm.

Sweet Potato Research Station
LSU AgCenter
130 Sweet Potato Road
Chase, LA 71324
Phone: 318-435-2155
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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. 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).

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Table 1. Sweet potato variety reactions to common diseases in Louisiana
S = susceptible reaction, R = resistant reaction, I = intermediate reaction, – = unknown reaction.

Variety	Disease						
	Rhizopus Soft Rot	Root Knot Nematode	Soil Rot	Fusarium Wilt	Sclerotial Blight	Fusarium Root Rot	Bacterial Root Rot
Bayou Belle (L07-146)	R	I-R	I-R	R	-	-	S
Beauregard	R	S	R-I	R	I	R	S
Bellevue	I	R	R	R	-	-	S
Bonita	S	R	I	I-R	-	S-I	S
Centennial	-	S	S	I-R	I-S	I	R
Covington	I	I-R	I-R	R	-	-	-
Evangeline	R	R	I-R	R	-	R	S
Hernandez	I-S	R-I	R-I	I-R	-	I	R
Jewel	I	I-R	S	R	I	I	I
Porto Rico (Unit 1)	-	I-S	S	S	S	R-I	R

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Table 2. Recommended pesticides, rates and pesticide use restrictions for sweet potato diseases.					
Disease (Pathogen)	**Product Choices[1] and Product Mode of Action Group[2]**		**Rate[3]**	**PHI[4]**	**Maximum Use**
Bacterial Root Rot (*Erwinia chrysanthemi*)	Sodium hypochlorite (chlorine)		100-150 ppm[5]		1 app
Black Rot (*Ceratocystis fimbriata*)	Thiabendazole (**seed root dip only**)				
	Mertect 340-F	1	107 fl oz/100 gal[6,11]		1 app
	Azoxystrobin + difenconazole	11,3	8-14 fl oz	14	55.3 fl oz/A/yr
	Quadris Top (**foliar/soil spray at transplanting only**)				
Foot Rot (*Plenodomus destruens*)	Thiabendazole (**seed root dip only**)				
	Mertect 340-F	1	107 fl oz/100 gal[6,11]		1 app
Fusarium Root Rot (*Fusarium* spp.)	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.				
Rhizopus Soft Rot (*Rhizopus* spp.)	Dicloran				
	Botran 5F	14	0.6 qt/100 gal		1 app[10]
	Fludioxonil	12	16-32 fl oz/100 gal		1 app[10,11]
	Scholar SC				
Sclerotial Blight (*Sclerotium rolfsii*)	Dicloran (**seed root dip only**)				
	Botran 5F	14	0.6 qt/7.5 gal[7]		1 app
	Dicloran (**spray[8] application only**)	14	5.73 oz/14 gal[9]		1 app
	Botran 5F				
	Azoxystrobin	11	0.4-0.8 fl oz[9]		123 fl. oz./A/yr
	Equation	11	0.4-0.8 fl oz[9]		123 fl. oz./A/yr
	Quadris Flowable	11	0.4-0.8 fl oz[9]	14	123 fl. oz./A/yr
	Satori	11	0.4-0.8 fl oz[9]	0	123 fl. oz./A/yr
	Willowood Azoxy 2SC			14	
				14	
Scurf (*Monilochaetes infuscans*)	Dicloran (**seed root dip only**)				
	Botran 5F	14	0.6 qt/7.5 gal[7]		1 app
	Dicloran (**spray[8] application only**)	14	5.7 oz/14 gal[9]		1 app
	Botran 5F				

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Table 2. Recommended pesticides, rates and pesticide use restrictions for sweet potato diseases.					
Disease (Pathogen)	**Product Choices[1] and Product Mode of Action Group[2]**		**Rate[3]**	**PHI[4]**	**Maximum Use**
	Thiabendazole 4L ST (**seed root dip only**)	1	107 fl oz/100 gal[6,12]		1 app
Soil Rot or Pox (*Streptomyces ipomoea*)	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.				
White Rust (*Albugo ipomoeae-panduratae*)	Azoxystrobin				
	Quadris Flowable	11	6.0-15.5 fl oz	0	123 fl. oz.
	Satori	11	6.0-20.0 fl oz	14	123 fl. oz.
	Willowood Azoxy 2SC	11	6.0-15.5 fl oz	14	123 fl. oz.
	Reason 500SC	11	5.5-8.2 fl oz	14	16.4 fl oz

[1] 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.
[2] Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).
[3] 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.
[4] Preharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.
[5] 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.
[6] Replace wash water as often as possible or when it becomes obviously dirty.
[7] Dip seed roots for 10-15 seconds in a well-agitated suspension. Drain and bed immediately. Prepare a fresh suspension daily.
[8] Sprayed onto seed roots and soil after seed roots are laid out in the beds.
[9] Rates are per 1,000 linear feet of row on a 42-inch plant bed. Refer to the label for modes of application.
[10] For postharvest disease control. Dip sweet potatoes for 30 seconds in a well-agitated suspension. Do not expose treated roots to direct sunlight.
[11] To apply as a spray use 16 fl oz/100 ton of sweet potatoes. Refer to label for application directions.
[12] Do not use treated roots for food or animal feed.

The sweet potatoes section was revised October 2016 by Dr. C. Clark.