LSU AgCenter Research & Extension

Louisiana Sweet Potato News

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Sweet Potato Crop Update

Tara Smith, Assistant Professor and Sweet Potato Specialist, LSU AgCenter

The 2009 production season is off to a good start and producers are pleased with what they are seeing thus far. Some early plantings were delayed due to wet weather in May but progressed on schedule during the last month. Over 85 % of the 2009 crop was planted by June 22, 2009.

The majority of the acreage remaining to be planted is in the northern production area and producers there can irrigate to stay on schedule when necessary. Soil moisture was ideal for many early plantings and as a result, producers are reporting a good stand over most of their crop.

James Deshotel, a producer with James Deshotel Produce in Avoyelles Parish completed planting in late May. Mr. Deshotel indicated that, "Everything looks good so far. We have a good stand, 80-100% across all of our production acres." "Moisture is gone now though, it will turn into a drought situation quickly if we do not get some rain." Larry Fontenot, a producer with E&L Produce in Evangeline Parish echoed some of the same sentiments. "The season started off reasonably well. We had excessive rainfall early in the beds and as a result some of the beds got out of hand and we had to deal with some less than ideal transplants. We were delayed for the first couple of weeks with wet weather, but the first half of our crop looks really good. We have some reduction in stand on the mid 25% of our plantings and we are still working on the last 25%. We are not in a drought stress situation yet, but we need some rain to finish up planting."

Venoy Kinnaird, a producer in Morehouse Parish was very optimistic about what he was seeing thus far. "I and several others up this way have the best looking crop for this time of year that we have seen in several years, in my opinion." "The potatoes took off and never looked back, we just want to end on a good note this year."

Plant beds performed well across the state, especially considering the quality of seed that was bedded in many cases. Most producers harvested a percentage of their seed crop in 2008, but supplies were reduced and of lower quality across the state due to adverse weather conditions experienced during the harvest season.

Disease incidence has not been a widespread problem. Beauregard seed performed on par in most cases, though a few producers did indicate more rot and breakdown in the beds than normal.

Evangeline seed beds also did well this year. Producers that pre-sprouted their seed and delayed bedding operations until soil temperatures warmed, experienced positive results. Incidence of sclerotial blight was reduced this year compared to 2008. Research on sclerotial blight in Evangeline is ongoing. Several fungicide efficacy plots are being evaluated across the state and results are forthcoming.

Temperatures have climbed in recent weeks and rainfall has been scarce. Many producers have reported a delay in their second cutting and are waiting on plants to finish planting their crop.

It is estimated that Louisiana producers will plant approximately 15,000 acres of sweet potato in 2009. Beauregard remains the predominate variety planted in Louisiana but producers are expected to increase the acreage planted to the Evangeline this year to around 1,500 - 2,000 acres.

As you move forward into the field season, remain diligent in managing insects and weeds. Detailed insect and weed management guides are available to assist you in making pest management decisions. Please contact me or your respective county agent for more information. The guides can be accessed online at www.lsuagcenter.com/sweetpotato.

Variety Update

Dr. Don Labonte

We have several lines coming through the program that are looking promising. ***05-111*** is an advanced selection we are testing widely this year. Yield has been strong throughout the state, and combined with a very consistent shape, this may translate into more fresh market quality roots per acre. Plant beds of this variety performed very well this year. A high number of plants were produced even from roots coming from hurricane impacted fields. Eating quality is comparable to Beauregard. A decision on release of this variety will be made at the earliest time possible after the harvest season is complete.

Evangeline will be planted on approximately 1,500 acres this year in Louisiana. This variety is also being tested this year under Material Transfer Agreements in Mississippi and Arkansas. This permits the growers in these locations to evaluate the variety but restricts them from using the seed for a future crop.

Our goals in doing the above are twofold. We want to provide an outlet for Louisiana certified seed growers and also generate revenue for the LSU AgCenter. Generating funding for research programs is critical and many of the sweet potato research programs in the AgCenter will benefit from Evangeline royalty fees. In addition, one producer in West Carroll parish intends to certify a portion of his Evangeline seed production and will have that seed available for purchase in 2010.

We have several breeding trials out around the state and will provide updates on the performance of different lines in future editions of the newsletter and at the winter production and advisory meetings.

Market Outlook

Tara Smith

Louisiana producers are waiting on the 2009 crop. The 2008 crop packed out earlier than usual due to crop losses experienced last year. Producers are hoping that the early 2009 crop will bring a strong price. There is still residual supply in other production states at this time, so the price at harvest will partially depend on the remaining cured product in those areas.

Cultural Practice Research Update: *Using sweetpotato crop phenology for optimizing preplant and early-season management activities in Louisiana*

Dr. Arthur Villordon, LSU AgCenter Sweet Potato Research Station

Phenology is defined as the development, differentiation, and initiation of organs. In other crops, phenology is used to schedule or optimize management activities to achieve optimum yield. For example, it has been demonstrated that water stress during the tuber initiation period reduces the final number of tubers in Irish

potatoes. The identification of a specific phenological stage associated with yield facilitates the correlation of specific environmental and management variables with the yield outcome. Recent research has led to the development of a simple phenology scheme for 'Beauregard' sweetpotatoes grown in Louisiana (Table 1). **See Table 1. on last page**. In this scheme, storage root initiation is defined as the appearance of anomalous cambium, i.e., anatomical features that are associated with storage root initiation. Under a well defined production environment, anomalous cambia can be detected as early as 13 days after transplanting (DAT). Adventitious roots with detectable anomalous cambia do not start to be visible as thickened structures (about 0.25 inch) until approximately 27 DAT.

It should be noted that in this scheme, the sequence of phenological phases does not start at the appearance of anomalous cambia (storage root initiation), rather at the emergence of adventitious roots (3-5 DAT). In other words, the consistent and uniform appearance of adventitious roots (Figure 1) is integral in determining storage root set and consequently, storage root yield. Under optimal conditions, 90% of adventitious roots present at 5-7 DAT become storage roots and the majority of the yield potential (storage root set) can be determined at 30 DAT. Newly-initiated storage roots compete for resources and this ability to act as a resource "sink" helps determine its final size and weight, i.e., the number of US#1 vs. canner-sized roots. One theory that helps to determine a storage root's ability to compete is its node's location (proximity to the surface) and its ability to accumulate starch early on (a function of its order of initiation).

How can this phenology-based scheme be used to support real world management decisions? A consistent SR1 presupposes that transplants are provided the necessary environment for successful and uniform establishment. In this context, we define establishment as the appearance of adventitious roots. Several variables contribute to consistent and uniform adventitious root initiation including but not limited to transplant attributes, air and soil temperature, relative humidity, and soil moisture. Ideally, transplants should have minimal damage and at least three nodes should be covered at transplanting (adventitious roots generally arise from the nodes; some roots arise from the cut end).

Management of soil moisture plays a critical role in uniform SR1. Under field conditions, we observed consistent adventitious rooting when transplants were watered-in and prevailing soil moisture was at 30%-50% of field capacity. Adventitious rooting became inconsistent with poor soil moisture and the existence of a soil moisture gradient (upper 2-4 inch of the soil profile significantly drier than the lower profile). The conditions at SR1 directly impact SR2. At SR2, adventitious roots confront two mutually exclusive fates: storage root initiation or lignification. Lignification renders the adventitious root incapable of becoming a storage root and lignified roots are visible as "strings" or "stringy roots" at harvest. Therefore, the proportion of initiated roots vs. lignified roots in part determines final storage root yield. If an environmental or management variable becomes limiting at SR1 and SR2, the proportion of lignified roots will increase relative to initiated roots, resulting in sub-optimal yield outcomes. At SR3, 90% of potential yield will have been determined although some "late set" is possible.

For example, if the soil moisture drops below the wilting point threshold (varies with soil type) at SR1 and SR2, the potential yield will have been drastically reduced, even with subsequent rainfall events and soil moisture becomes sufficient for the remainder of the season. It has also been shown that excessive nitrogen can slow down anomalous cambium development and favor lignification. Other possible SR1/SR2-specific limiting variables, including chemical injury, are currently being actively investigated.
The phenology scheme described previously needs to be calibrated and validated for specific soil types. However, previous studies involving different varieties in other

locations appear to support the time frame that we have identified for 'Beauregard.' Preliminary results from ongoing studies also suggest a similar time frame for 'Evangeline.' This phenology scheme can be used to design research studies that might focus on associating specific variables or combinations of variables with adventitious root initiation, storage root initiation, or lignification (reduced yield). Similarly, the phenology scheme can also be used to modify existing management practices in order to enhance or improve the consistency of storage root yield as well as perform "troubleshooting" when yield outcomes are deemed sub optimal.

Industry News

Pre-Harvest Sweet Potato Workshop: August 11, 2009, LSU AgCenter Scott Center

A pre-harvest workshop will be held in Winnsboro, La. at the LSU AgCenter Scott Center on August 11, 2009. The meeting will cover a variety of topics including: Pre-Harvest management decisions that can affect yield, GAP and GMP compliance and certification and post-harvest diseases. More information on this meeting will be mailed out in the near future. Please mark your calendars now and plan to attend.

Louisiana Department of Agriculture and Forestry and Louisiana Recovery Grant and Loan Program

The Louisiana Department of Agriculture and Forestry (LDAF) and the Louisiana Recovery Authority (LRA) have worked together in the development of a grant and loan program that will provide additional assistance to Louisiana agricultural producers and agribusinesses that were adversely impacted from Hurricanes Gustav and Ike. The funding for this program was approved by the US Department of Housing and Urban Development (HUD) and will come from its Community Development Block Grant funds. A total of $30 million has initially been approved and allocated for this program. An additional $25 million is expected to be allocated for the program bringing total funding up to $55 million. All of the programs will be administered through the LDAF's Louisiana Agricultural Finance Authority. All 64 parishes will be eligible for assistance. The state will be divided into 8 regions with funds being provided based on the estimated economic impact from the storms in each region. Currently, the LDAF is requesting producers and agribusiness interested in the program to pre-register if you have not already done so. Please see contact information below.

Louisiana Agricultural Finance Authority
Phone: (225) 922 - 1277
Fax: (225) 237 - 5710
Email: LAFA@ldaf.state.la.us
Homepage: www.ldaf.state.la.us

Mississippi to host National Sweet Potato Convention in Biloxi *Benny Graves, Mississippi Sweet Potato Council*

The Mississippi Sweet Potato Council is happy to be hosting the 2010 National Sweet Potato Convention. The meeting will be held in Biloxi, Mississippi at the Beau Rivage Resort. The convention dates are January 24-26, 2010, but plan to come early and enjoy the luxury of the beachside Beau Rivage Resort.

This will be a Convention you will not want to miss. Come relax and enjoy the company of your sweet potato friends from across the nation. You will be served plenty of good food and enjoy fun activities mixed in with a little business. You will not want to miss this opportunity to talk sweet potatoes with the movers and shakers of the sweet potato industry.

Mark your calendar now and reserve your room at the Beau Rivage by calling (888) 383-7073 . Ask for group code "U.S. Sweet Potato Council". Room rates are $139 per night Saturday, and $119 per night Sunday thru Tuesday.

Registration packets will be mailed out early August. But for more information go to www. mssweetpotato.org and click on 2010 Convention.

Benny Graves
Convention Coordinator
662-325-7773

LSU AgCenter *"Sweet Potato Video"* available for viewing on You Tube

A recently completed LSU AgCenter video chronicling sweet potato production is available for viewing on You Tube: http://www.youtube.com/watch?v=EGFo3bZj_SM The video provides information on all facets of production of the crop and will be a great educational tool for all ages. The video was done by AgCenter communications in cooperation with Louisiana sweet potato producers and extension personnel. Please take a moment to watch the video and share this site with others.

Louisiana Sweet Potato Industry experiences losses

Mr. Carl Ducote, a retired sweet potato farmer from Bunkie, La. passed away on May 30, 2009. Mr. Ducote farmed for over 40 years and was active in the Avoyelles and Louisiana Sweet Potato Associations. Mr. Ducote will be missed by the Louisiana sweet potato industry. Those left to cherish his memory include his wife, Mrs. Beverly Ducote, one son, Blake Ducote, and two daughters, Keisha Bergeron and Carla Juneau.

Mr. Jeff Brown passed away on April 24, 2009. Mr. Brown, the son of Mr. Billy Brown was a lifelong sweet potato farmer in West Carroll and Franklin Parishes. Those left to cherish his memory include his wife Tony and children, Logan, Holden, and Colton Brown.

Featured Recipe

Yam Dip

Ingredients:

1 pint nonfat plain yogurt
1 package onion soup mix
1/2 cup fresh yams (sweet potatoes), cooked and mashed or 1/2 (15 oz.) can yams, drained and mashed

Instructions:

Mix ingredients together and chill. Serve with fresh vegetables. Makes 2 1/2 cups.

Nutrition:

Per serving: CAL 54; FAT .3g; PROTEIN 3.3g; CARB 9.5g; CHOL .9mg

www.sweetpotato.org

LSU AgCenter Extension personnel are available to assist you with all of your crop needs. Please call on us if we can be of assistance.

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Table 1. Accumulated thermal time and proposed storage root phenology stages and their description in 'Beauregard' sweetpotato grown under field conditions in Louisiana.

Phenology stage	Accumulated growing degree days (number of days)	
Transplanting	**0**	**Transplants are flaccid**
SR1 **Presence of a minimum of one adventitious root (minimum length=0.5 cm) in each of at least 50% of transplants**	**47 (3)**	**Transplants appear turgid with at least one adventitious root initiated; terminal leaves start to open; initiation of lateral branching after SR1**
SR2 **Presence of anomalous cambium in a minimum of one adventitious root in each of at least 50% of transplants**	**220 (13)**	**7-14 new leaves; 1-4 branches; lignification of stele observed at 335 GDD**
SR3 **Presence of a minimum of one visible storage root (adventitious root with visible localized swelling, 0.5 cm at its widest section) in each of at least 50% of plants**	**460 (26)**	**21-42 new leaves; 3-4 branches**