Mississippi Sweetpotato News

Spring 2013

Mississippi Sweet Potato Crop Report

Benny Graves, Executive Director
Mississippi Sweet Potato Council

The 2013 Mississippi sweet potato crop season so far can be described with two words. "cold" and "wet" Seed potatoes bedded out during March and April have experienced a lot of cold soil temperatures and multiple heavy rains. As a result of cold, wet soil condition seed potatoes have been slow to sprout and I believe plant production will be delayed by two weeks or more. Most plant beds will not have plants ready to go until the last week of May at the earliest.

Some sweet potato plant beds will have the plastic taken off next week if temperatures warm up. Many of the later bedded seed have not yet started to sprout and a few growers still have seed to bed out. Warmer nighttime temperatures will be needed for seed to sprout and plants to grow.

Grower surveys so far indicate that planted acres will be down 2,800 acres for a total planted acreage around the 19,000 acre mark. This will be the first time in four years Mississippi plants less than 20,000 acres.

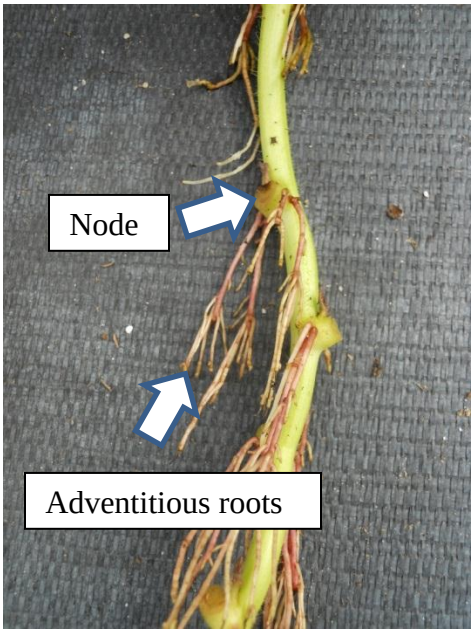
This reduction in acreage is the result of lower prices for fresh market potatoes and reduced movement of processing potatoes. Also many sweet potato processors are contracting fewer pounds of sweet potatoes from Mississippi than last year. Jumbos and processing potatoes are not generating the dollars most farms need.

On a positive note, many growers will be planting limited acres of the new variety 'Orleans' this year. We should have a good opportunity to compare this new variety to Beauregard and Evangeline this growing season. I believe Orleans has the potential to have a positive economic impact to our industry.

Slip Planting Tips

Stephen L. Meyers
Regional Sweet Potato Extension Specialist
Mississippi State University- Extension Service

In the simplest sense, sweetpotato yields are ultimately determined by the number of plants per acre, the number of storage roots per plant, and the effect of time required to "size up" roots that are set. Much research has been conducted the past 4 years at MSU and at other universities in sweet potato growing states investigating the influence of grower practices and environmental factors on the second part of that equation (storage roots per plant). The sweet potato's entire root system comes from adventitious roots formed at slip nodes (see photo at right) and from the cut end of the slip. Under ideal conditions these adventitious roots become storage roots. When conditions are not ideal or the developing root is damaged, the root becomes a fibrous root. When conditions initially favor storage root formation then become adverse, long, slightly thickened pencil roots develop. Adventitious roots begin to grow in as little as 24 hours after slip transplanting. The number of roots that become storage roots is determined in the first 2 weeks after transplanting. Here are a few things you can do to maximize your storage root set.



Slip Size:
Sweetpotato slips 10 to 12" long with a stem diameter of 0.25" or greater make the best planting material. Slips this size increase the number of nodes that can be buried below the soil surface.

Planting Depth:
Slip planting depth directly affects sweetpotato yield. Research shows increasing sweetpotato planting depth increases yields with maximum yields observed at 5" deep. There are a couple reasons increased planting depth increases yield. 1.) Deeper slip planting allows more nodes to be underground. This increases the potential number of storage roots that can be produced from each plant. 2.) Deeper planting generally

provides the slip with a more stable environment. Soil temperature and volumetric water content nearer the soil surface can be highly variable while those at greater depths are more moderate. Slip planting depth can be highly variable within a field. Individuals riding a transplanter should pay close attention to the placement of slips in order to achieve optimal planting depth.

Soil Moisture:
Ideal volumetric soil water content will depend upon the water holding capacity of the production location. However, optimal conditions are generally observed at 70 to 80% of soil field capacity. Soils above 80% of field capacity (those with water filling soil air space) are detrimental both to adventitious root development and growth. If possible, avoid planting into hot dry soils- research shows doing so can decrease yields by 20% or more.

Nitrogen:
A moderate amount of nitrogen is required for the proper development from adventitious roots to sweetpotato storage roots. However, developing adventitious roots will not "seek out" nitrogen. Therefore placement of nitrogen is important. Any preplant nitrogen applied should be evenly distributed throughout the plant bed in order to maximize contact with developing roots. It is important to note that excessive nitrogen contributes to increased foliar growth of sweetpotato plants and reduces root yields. Excessive nitrogen rates have also been linked to reduced storage root development and increased pencil and fibrous root development.

Other Reminders:
Cut sweetpotatoes above the soil line to reduce the chance of carrying soil borne pathogens from the plant beds to the production field.

Insect Control in Sweetpotatoes

Fred Musser
Associate Professor
Mississippi State University- Entomology

Insect control in sweetpotatoes is challenging because the insects which are most visible (foliage feeders) are not the insects that cause the most yield loss (root feeders). I have reviewed my own data plus published insecticide efficacy data from Mississippi, Louisiana, and North Carolina from the last several years. What is obvious from these trials is that we have no chemical method available that provides consistent high levels of control against our most damaging pests of the WDS complex (wireworms, *Diabrotica* cucumber beetles and *Systena* flea beetles), white grubs, and sugarcane beetles. However, the best treatments typically reduce damage by 80-90% in high pest pressure situations. Unfortunately, the best treatments are not the same in all trials. Most trials during the last few years have evaluated pre-plant incorporated (PPI) and layby incorporated insecticide applications. A pre-plant incorporated application immediately before planting followed by a layby incorporated application several weeks later

seems to provide the most consistent control. The most consistent PPI insecticides were Belay (clothianidin), Coragen (chlorantraniprole), and Lorsban (chlorpyrifos). The best results from a layby application came from Lorsban, Belay, and Brigade (bifenthrin).

From the NMREC-Pontotoc Ridge-Flatwoods Branch Experiment Station

Dr. Ramon A. Arancibia
Assistant Research Professor
Mississippi State University-MAFES

One of the main functions of the NMREC-Pontotoc Station is to maintain the sweet potato foundation seed program in Mississippi. Virus-indexed material (G0) is kept under isolated conditions (tissue culture) and propagated in the greenhouse from November through May to provide certified planting material for certified seed stock production in the field. The seed produced is commercially available to growers as certified G1 virus-indexed foundation seed stock. Use of certified material reduces "cultivar decline" in sweet potato due to viruses and mutations which impact directly yield and income.

Selected studies conducted in 2012:

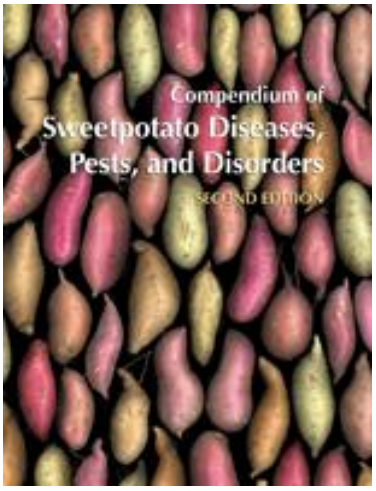
Potassium side-dressing. A trial to determine the effect of potassium side-dressing on Beauregard to increase yield and root size was conducted. Results suggest that when pre-planting fertilization is adequate, the response to potassium side-dressing is not significant.

Sustainable practices to improve skin set and reduce skinning at harvest on sweetpotatoes. The effect of preharvest defoliation, root undercutting and chemical applications on skin set and skinning resistance was investigated. Two implements (models) were designed and built for field root undercut in collaboration with the Dept. of Ag. Engineering. Results suggest that defoliation, root undercutting and some chemical applications can be useful in reducing skinning at harvest.

Virus transmission in the field. Transmission of sweetpotato viruses into *Ipomoea setosa* (virus index plant) was studied for two years in 3 sweetpotato field in North Mississippi. Infections of sentinel plants was associated with aphid flight during the season confirming the ability of aphids to transmit the most common sweet potato viruses. Studies were in collaboration with Dr. Musser at MSU Entomology Dept. and Dr. Clark at LSU.

NSCG variety trial and tip/end rot incidence. The 2012 national sweetpotato collaborators group (NSCG) variety trials were conducted at the Pontotoc and Crystal Spring experiment stations. Current commercial varieties and experimental varieties developed by breeders in NCSU and LSU were evaluated. In addition, the role of pre-harvest applications of ethephon on the emerging sweetpotato tip/end rot disease/disorder was evaluated with the NSCG varieties. Similar studies were conducted at LSU and NCSU. In summary, two new varieties developed by LSU (L07-146 and Orleans) have performed at or above the traditional variety Beauregard in yield and quality. Tip rot incidence was increased with preharvest applications of ethephon, but

the increase in end rot incidence was less evident. In contrast, optimal curing immediately after harvest reduced both tip and end rots and improved pack out efficiency.



New Sweetpotato Compendium

The new Compendium of Sweetpotato Diseases, Pests, and Disorders 2nd Edition is now available from The American Phytopathological Society Press. The compendium is full of useful information and photographs of sweetpotato insects, diseases, and herbicide injury. It can be purchased for $89 from the APS at www.apsnet.org.

Row Crops Field Day- Pontotoc Ridge-Flatwoods Branch Experiment Station

The Row Crops Field Day is scheduled for Thursday July 11th at the Pontotoc Ridge-Flatwoods Branch Experiment Station beginning at 7:30 A.M. Topics covered will include Xtend and Enlist technologies, corn and soybean varieties and production strategies, cotton production systems, and **sweetpotato weed control research**. CCA CEUs offered. For more information contact Mark Shankle at shankle@ra.msstate.edu or 662-489-4621.

Mississippi Farm Bureau Federation- Sweetpotato Meeting

There will be a Mississippi Farm Bureau Federation Sweetpotato Meeting on Wednesday July 17, 2013 at 10:00 A.M. at Penick Produce. For more information, contact Samantha Webb at swebb@msfb.org or 601-573-7913.

Sweetpotato Field Day- Pontotoc Ridge-Flatwoods Branch Experiment Station

The 2013 Sweetpotato Field Day is tentatively scheduled for the morning of Thursday August 22nd at the Pontotoc Ridge-Flatwoods Branch Experiment Station in Pontotoc, MS. You will receive more information about the field day by mail two weeks prior to the field day. For more information contact Stephen Meyers.

Do you have newsletter content?

If so, please contact Stephen Meyers via email (smeyers@ext.msstate.edu), office phone (662-489-4621), or cell phone (765-412-2908). Expect another newsletter near harvest.