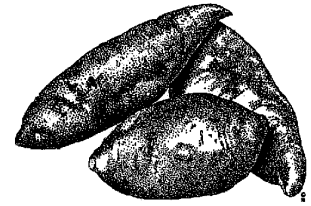




# University of California Cooperative Extension

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## SWEETPOTATO TIPS

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**December, 2004**

### 2004 USDA ACREAGE AND 2003 PRODUCTION ESTIMATES

State	2004 Area planted 1000 acres	2003 Area planted 1000 acres	2003 Yield boxes/A	2003 Production 1,000 boxes	2003 price \$/box	2003 Value 1,000 dollars	2003 \$/A
Alabama	2.5	2.5	475	1,188	\$ 10.16	\$ 12,065.00	4,826
California	11.5	10.7	750	8,025	\$ 10.08	\$ 80,892.00	7,560
Louisiana	19.0	18.0	437.5	7,875	\$ 8.00	\$ 63,000.00	3,500
Mississippi	14.7	13.6	437.5	5,950	\$ 8.32	\$ 49,504.00	3,640
New Jersey	1.1	1.1	312.5	344	\$ 10.32	\$ 3,547.50	3,225
North Carolina	44.0	42.0	350	14,700	\$ 5.80	\$ 85,260.00	2,030
South Carolina	0.8	1.0	375	375	\$ 5.00	\$ 1,875.00	1,875
Texas	3.3	3.2	350	1,120	\$ 7.60	\$ 8,512.00	2,660
Virginia	0.4	0.5	300	150	\$ 4.88	\$ 732.00	1,464
United States	96.3	92.6	430	39,818	\$ 7.68	\$ 305,802.24	3,302

In: Vegetables and Melons Outlook/VGS-306/December 16, 2004. Economic Research Service, USDA

The figures above are current as of December, 2004. USDA estimates the values of California sweetpotatoes (FOB packed) at almost \$81 million for the 2003 crop (crop estimates for 2004 are unavailable). This is due mainly to a very generous average yield estimate of 750 boxes per acre. The most revealing and troubling part of above table is that NC, SC, and VA appear to report farm gate value, while AL, NJ, and CA report FOB packed value. Another interesting part of the table, which is new to USDA, is the \$/A production estimate. California is probably a little high, by about \$1000/A, while all the other states with the exception of Alabama are underestimating their costs.

### PACKER STATS

Some interesting information from The Packer surveying retail food sellers. 41% of customers purchased sweet potatoes within the past 12 months. 36% were high school graduates, while 45% had college degrees. (My comment: nutrition education is making a difference, as better educated people know that sweetpotatoes are a healthy food choice). As far as consumer perception of price, \$0.60 per lb was deemed too inexpensive and customers assumed poor quality, \$0.80/lb was the expected price, and \$1.35/lb was considered too expensive.

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## FALL WEATHER AND STORING THE CROP

You probably have heard more about this than me, but I have been told by others in the Extension Service in North Carolina

and Louisiana that all those hurricanes that hit the east coast last fall did not hurt the sweetpotato crop. The hurricanes simply missed eastern NC, and actually did Louisiana some good as it brought much needed late summer rains.

But our October rains did impact the crop here. I estimate 10% of the acreage was still in the ground when we received about 4" in rain in October and early November. Everything was harvested, but cold rains like that always increase the potential for problems in storage. Even if your potatoes did not receive chilling injury, the wet soil on the roots can lead to increased rotting before they're packed.

There is little that can be done to reduce your rotting potential. Beauregard's from these fields should be sold first. Golden Sweet will probably still store adequately. Maintain proper storage conditions (60° F and 80-85% relative humidity), but keep free water from forming.

Keep an eye out for Scurf, which could appear in storage even though it wasn't obvious at harvest. Scurf will grow in storage, though slowly at cool temperatures.



## ROUNDUP REGISTRATION

This past summer, I learned that certain formulations of Roundup (glyphosate, Monsanto Co.) are labeled for in-season

use with sweetpotatoes. The original Roundup label had use limited to a pre-plant burn-down application, but Roundup UltraMax and WeatherMax both specifically allow use up to 14 days before harvest.

*The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by UCCE is implied.*

With proper use, this could be a huge development for controlling those troublesome weeds that always grow under the drip tape (e.g., Pigweed and Barnyard Grass). A properly timed application could eliminate a hand hoeing while improving weed control. Furthermore, the tape would not need to be moved, saving more time. It also opens up the possibility to bury the drip the tape and eliminate cultivating the bed middles after transplanting.

Either UltraMax or WeatherMax should be used with a hooded sprayer as a banded application up to about lay-by, or when the vines start to run. Smaller weeds are controlled more effectively. The product is safe to spray directly onto the tape, but could cause crop damage if it contacts the foliage. For this reason I suggest equipping the spray rig with some lifter bars to move any long vines up and out of the way in front of the spray hood. Also remember to reduce spray pressure and/or increase nozzle size to prevent fuming. The UltraMax label recommends using low pressure 80° flat fan nozzles with 20 – 30 gallons per acre water volume.

Remember that a 12" band is 15% of the total width of the bed. Because you are not making a broadcast spray, you will reduce the amount of product accordingly. For example, a 20 oz/A application works out to be only 3 oz/A when banded.

Roundup UltraMax and WeatherMax are caution materials. Their formulations differ slightly, as do the required PPE. Be sure to check the label for safety and rate information.

## FUSARIUM ROOT ROT

Fusarium Root Rot is a decay of the cortex of the root and requires a wound for infection. It is distinct from Fusarium wilt, which is caused by a host specific vascular pathogen. Fusarium wilt is caused by *Fusarium oxysporum f. sp. batatas*. It infects early, causing the vine to yellow and collapse mid-way through the season. Fusarium root rot is caused by a complex of *Fusarium oxysporum* and *F. solani*. It can infect at harvest, and cause rotting in storage, or it can infect earlier in the field and cause potatoes to rot in the ground

before they are dug. Fusarium root rot is considered to be a post-harvest disease of sweetpotatoes, yet in the past couple of years it has shown up as problem in the field.

The real zinger about Fusarium root rot is that you don't know you have it until you stick the digger in the ground. With drip irrigation, the vines will still look healthy. The roots, however, may be completely black and rotted. Or they may have a dark sunken spot on one side and be black in part of the interior. The rotting is typically dry, with lens-shaped cavities. Sometimes there is secondary rotting which will cause a soft rot, and maggots may be found. Frequently, the rotting starts at the end of the root. In response, the plant sends out secondary feeder roots above the lesion. These feeder roots keep the canopy alive and hide any obvious signs of a problem.

Fusarium root rot is more of a problem with the Japanese, Hannas, and Golden Sweets than the yam types, though I have seen it in Beauregard and Diane too. Based on my observations, this disease is getting worse: four years ago I could walk through a harvested field and not see this problem, this year I noticed it in at least six fields.

Fusarium root rot can come from the field, where the disease is able to persist for many years, and from infected transplants. Since it is usually considered a post harvest problem, there is little information about the disease epidemiology in the literature. Complicating matters is that some types of Pythium can cause very similar symptoms.

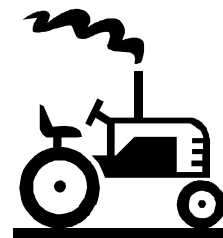
A combination of control methods may be needed to control root rot. Carefully select disease-free seed roots; treat seed with Benolate or Mertect; fallow fields that have previously had this problem; cut plants in the bed above the soil line; plant Koto Buki, Hanna, and Golden Sweet in fumigated field areas and avoid those areas with past problems with these varieties. If you use transplant dips, make a fresh batch every day. Do not save old transplant dip solution, as this may spread the problem to healthy plants. It is also important to not over irrigate, as this can make the rot worse and increase the chance for pythium disease problems.



Figure 1. Fusarium root rot on Golden Sweet.

## IR-4 PROJECTS

IR-4 is the USDA program that helps register new pesticides for “minor” crops. All vegetables and fruits fall into this category. Some new materials that are currently being tested on sweetpotatoes include the fungicide Pristine for control of molds in the beds; the insecticide Admire for aphid control; Goal herbicide for weed control; and Ethephon as a harvest aid.



## RESEARCH SUMMARY

Collaborators Variety Trial. The California Beauregard selection trounced all others in the trial, mostly because it had a good stand from G1 seed (Figure 2). My three year old seed had half the yield of the G1, and was already starting to show signs of russet crack. Some notable mentions are L-01-29, which has dark red skin and white flesh similar to Koto Buki, L-99-35 which has better color than Beauregard, is sweeter, and has some nematode resistance, and NC-98-608, which is very attractive Beauregard type but sweeter. This one is already being grown commercially in North Carolina.

Beauregard clean seed project. In collaboration with the Sweetpotato Council of California, new Beauregard selections have been made and are being virus tested for evaluation next year. This is

to correct the “twining” problem exhibited in the current selection.

Fungicide trials. Two fungicide trials were done on Japanese and Golden Sweet to evaluate control of Stem Rot. Treatments included Benolate, Mertect, Botran, Topsin, Quadris, and Chlorox. No disease problems were seen in either trial, so no efficacy evaluations could be made, but there was no impact on yield.

Scythe and Roundup Herbicide Trial. Scythe (pelargaonic acid, Dow AgroScience) is a contact herbicide with a current label for use in sweetpotatoes. It literally “burns” weeds back—results are seen in just a few hours—but has no residual control. When combined with a little Roundup, weed control was excellent, giving season long weed control from only one application. Both the 0.4% and 0.8% concentrations of Roundup with 3% Scythe gave significantly better weed control than the untreated check plots more than one month after application (Figure 3). Treatments were post directed in a band made to Garnets at vining, over the top of the drip tape. Roundup now has a label for sweetpotatoes.

## UPCOMING MEETINGS

UCCE Vegetable Crops Meeting, West Side Research and Education Center, Five Points, CA. January 21, 2005.

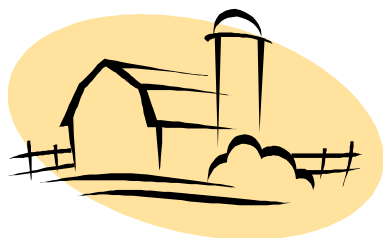
National Sweetpotato Meeting, Tunica Mississippi. January 23 – 25, 2005.

**40<sup>th</sup> Annual Sweetpotato Meeting, UCCE classroom, Merced. February 2, 2005. 9:00 am – noon. 3 CE credits requested. Lunch served.**

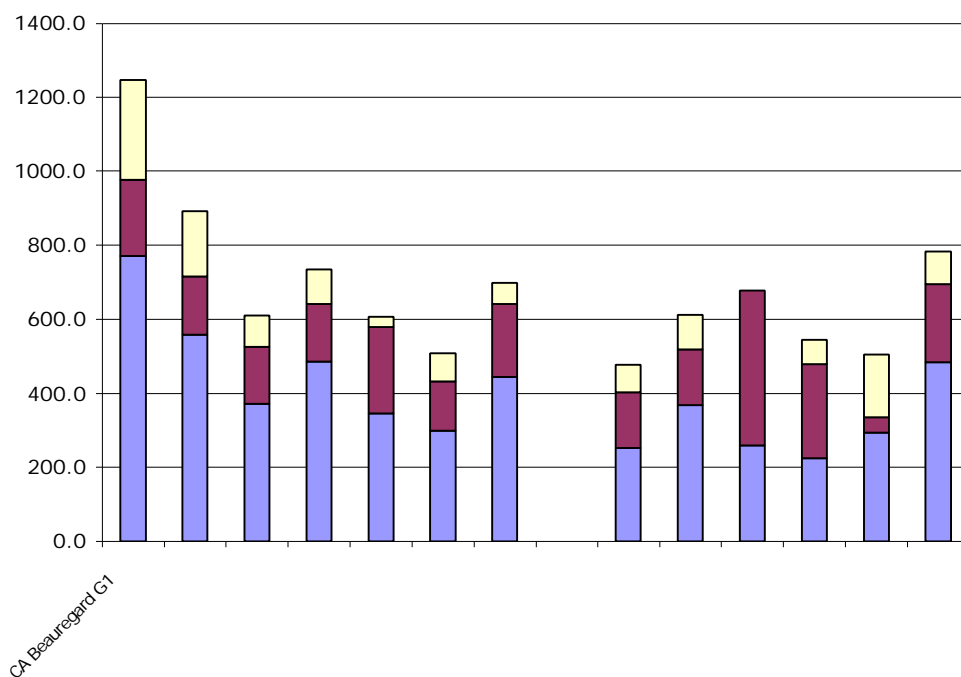
National Collaborators Meeting, Little Rock, Arkansas. February 4 – 6, 2005.



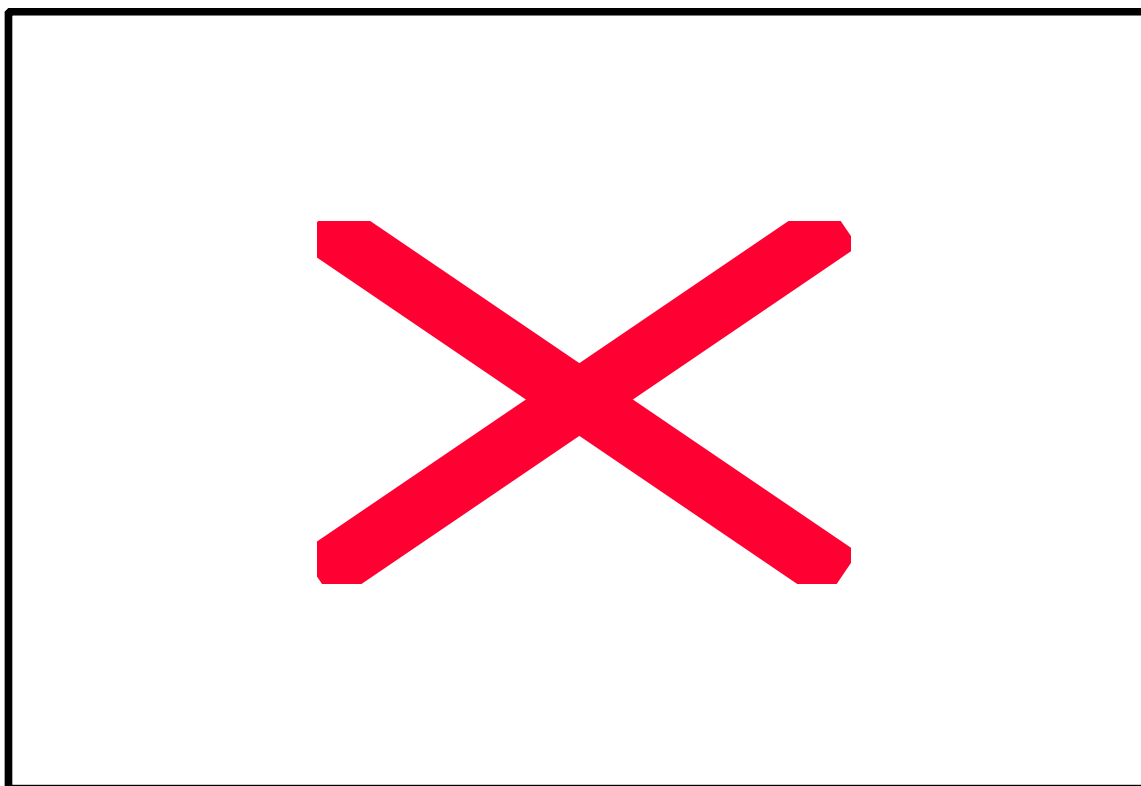
Farm Advisor



### 2004 Collaborators Trial



**Figure 2. Collaborators Variety Trial yield results. Height of each column shows total market yield. Columns with the same letter are not significantly different.**



**Figure 3. Weed pressure one month after Scythe and Roundup treatments. Error bars show LSD. There was no significant difference in nutsedge control between the treatments.**

