

SWEETPOTATO TIPS

PLANTING INFORMATION AND PRODUCTION FROM USDA

Planted acreage for California is estimated to be the same as last year, near 10,000 acres. Production last year was 213,000 bins, putting us a close third for total production. Average price received in 1998 was \$25.80 per hundred-weight, or \$10.32 per box, down almost a dollar from 1997. A summary of how we compare to other states is shown in Table 1.

There are no official estimates for this year's yields here in the state, but it seems to be an average crop. The usual assortment of disease problems (Scurf, Pox, Stem Rot) were found. Leaf miners came in strong in some fields at the end of the season, but late enough so that control was not necessary. Harvest went well thanks to a long and dry fall.

Table 1. Sweetpotato area planted, production, and prices received by state, 1997 – 1999.

State	Area Planted 1000 Acres		Production 1000 cwt		Prices rec'd \$ per cwt	
	1998	1999	1997	1998	1997	1998
AL	3.8	3.8	540	629	20.50	15.10
CA	9.7	9.7	1,989	2,134	28.00	25.80
GA	0.8	0.7	120	70	15.40	16.50
LA	21.0	22.0	3400	2,200	14.40	14.40
MS	9.8	9.8	1,092	1,358	18.50	17.50
NJ	1.1	1.0	116	105	20.40	21.50
NC	33.0	34.0	4,960	5,440	10.80	11.00
SC	1.1	1.0	121	81	15.40	12.50
TX	6.4	5.6	899	252	16.20	16.40
VA	0.5	0.5	90	113	11.60	12.30
US	87.2	88.1	13,327	12,382		

Source: USDA NASS and ERS, July 1999.

FLOODING IN NC AFFECTS PRICE

Shipping prices in the area were a little better this Thanksgiving, in part to the unfortunate flooding from storms that soaked North Carolina this fall. The unofficial word is that most farmers lost some of the crop, but how much varies from 5 to 50%, depending on field location. The unanswered question is what will happen in storage. Here is an excerpt from the USDA, Vegetables and Specialties Summary:

'In September, Hurricane Floyd hit eastern North Carolina, causing extensive damage to the sweet potato crop. Rains and flooding from the hurricane and again later from Hurricane Irene inundated the major eastern sweet potato growing counties in the State. Although a fifth of the crop had already been harvested prior to the flooding, most of the unharvested area had standing water on it for varying periods of time. As of November 8, f.o.b. shipping-point prices for 40-pound cartons of cured U.S. number one medium sweet potatoes from North Carolina were about \$14.50 per carton up 38 percent from the low levels of a year ago. This season through November 13, shipment volume from North Carolina was down slightly from a year ago.'

In this issue:

- 1999 acreage and production
- NC crop report
- Research summary
- FYI: storage, seed potatoes, and disease
- CA Sweetpotato Council cleans up 2 varieties
- Nat'l Sweetpotato Conference and Tour

**Happy
Holidays!**

Dec., 1999

RESEARCH SUMMARY

We had a busy year with research in 1999. Here is a brief summary of the results to date. Not all of the data are in and analyzed yet, and some data will be generated during the winter storage period. Look for further coverage on these projects at the annual winter meeting in January.

- **Collaborator's Trial.** This is the trial where we evaluate new breeding stock that is developed in other states. These are then compared to some varieties we already grow in the area. Yield results are shown in Table 2 below. NC93-17 and Diane did exceptionally well, while 8633 (an older, released variety) yielded poorly in this trial.

Table 2. Collaborator's Trial yield results.

Variety	40 lb Box/A			
	No.1's	No.2's	Jumbos	Total yield
NC93-17	409.9	258.9	152.5	821.2
Diane	352.7	287.4	192.6	832.7
W352	264.1	230.2	62.1	556.3
Beauregard	235.5	136.5	160.2	532.2
W337	230.2	130.7	177.9	538.8
W334	194.4	168.8	78.5	441.7
L94-96	191.1	221.2	87.9	500.3
W317	166.1	127.1	74.2	367.4
W336	159.3	147.7	62.9	369.9
8633	106.2	94.2	61.3	261.6
Average	230.9	180.3	111	522.2
LSD (0.05)	150.7	80.4	93.05	191.3
CV (%)	61.4	49	74.3	47.3

- **Virus Tested Trial.** In this trial, we compared virus tested plants (plants that have grown and tested to be virus-free) to old seed that contained viruses that cause such problems as Russet Crack and Internal Cork. We were a little disappointed with the results, but we did see an increase in number 1's with the virus tested plants, especially in Beauregard (Figure 1).
- **Slip planting evaluation.** In conjunction with the virus-test trial, this was done to get a feeling for the number of times field plants could be clipped and replanted and still make seed roots. We reduced yield 10 – 15% in the original clipped

plants (planted May 26) as compared to uncut plants. The late planted slips (planted June 28 and July 9) yielded about half of the original mother plants (Table 3).

Table 3. Slip planting evaluation.

Treatment	lbs per 20 feet of row			Total yield
	No.1's	No.2's	Jumbos	
Uncropped	33	19	17	69
Clipped mother plants	46	14	0	50
1 st planting	10	8	0	18
2 nd planting	12	5	0	17

Note: trial was not replicated.

- **N and K Fertilizer Trial.** Yield as affected by different rates of nitrogen and potash. Nitrogen went from 0 to 300 lbs/a, and potash went from 0 to 400 lbs/a (Figure 2). Unfortunately, the data are not very "clean". We got a slight response to nitrogen, but not potassium. Best overall yields occurred at 300 lbs N/a and 100 lbs K₂O/a, but there was little difference between 75 and 300 lbs of N. We'll continue to take data from roots in winter to see if potassium helps with storage.
- **Row spacing evaluation.** Slips were planted in rows 40", 30", or 20" apart. Yields were best with the 40" configuration, but this may have been mainly to harvest method. Jumbos were reduced as the rows narrowed. An added plus with the closer spacing was quick bed coverage which reduced weeding.
- **Foliar application of fertilizer.** Potassium, zinc, copper, and boron were sprayed three times during the growing season to see the effect on leaf analysis and yield. We were able to increase the levels of these nutrients within the plant, but yields were unaffected by the treatments.
- **Matrix herbicide evaluation.** Matrix (Rimsulfuron, by DuPont) is registered for Irish potatoes, but not on sweetpotatoes. In our evaluation, we saw significant crop injury and yield loss with an over-the-top post application. Directed sprays down the side of the bed yielded the same as the untreated control.

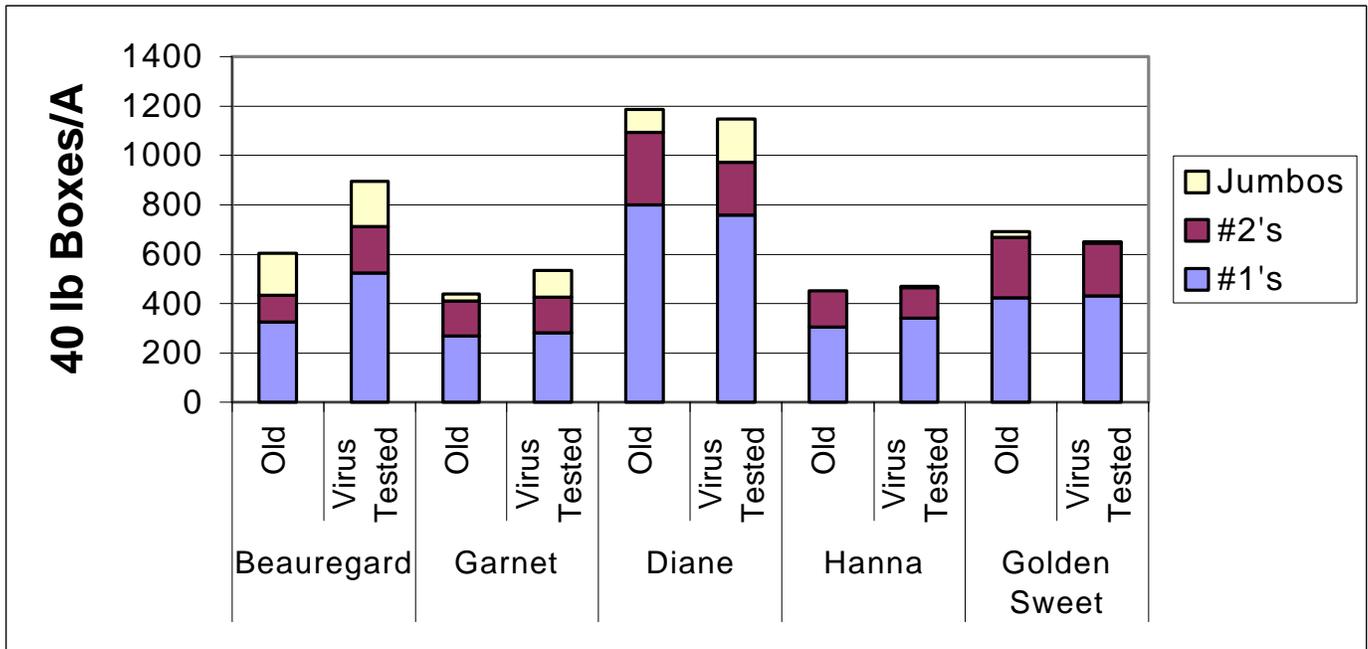


Figure 1. Yield of Sweetpotato varieties depending on seed source.

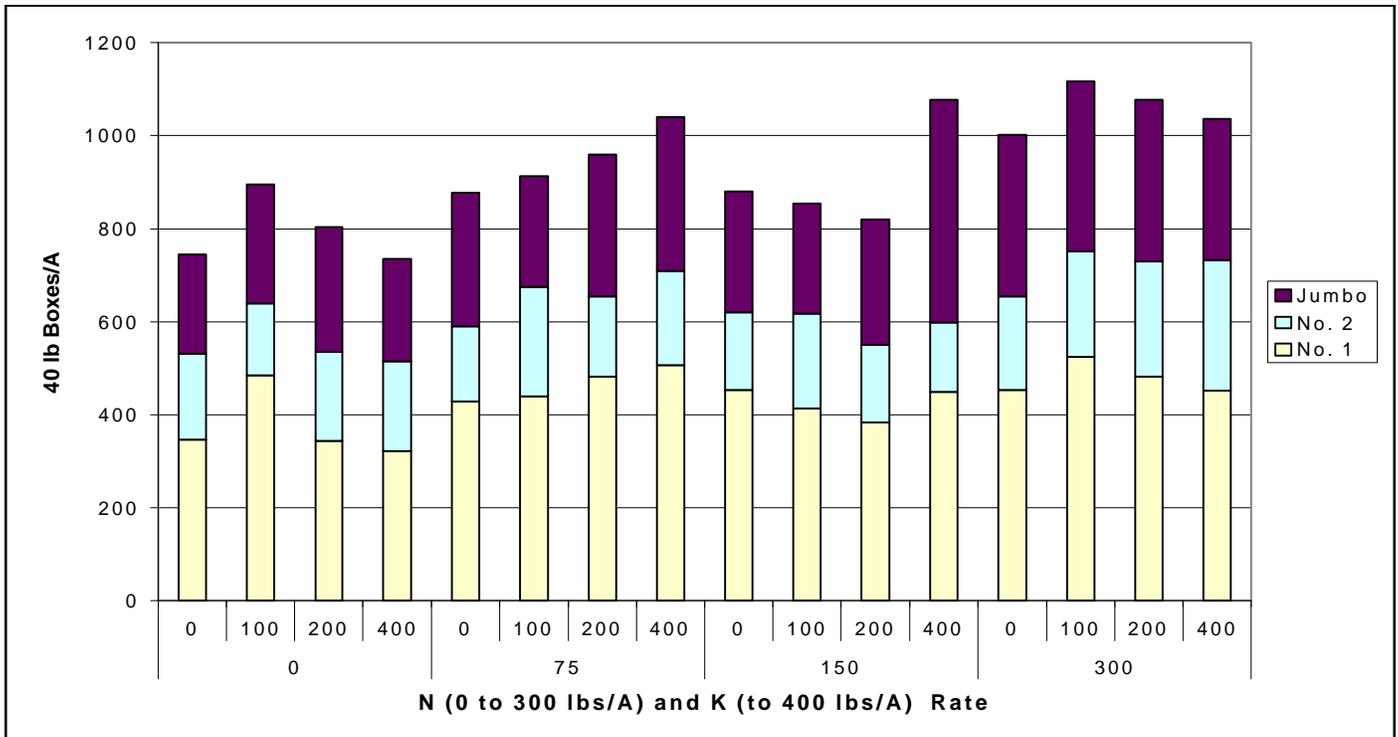


Figure 2. Yield breakdown of Beauregard sweetpotatoes depending on N and K rate

PRODUCTION TIPS

Storage. Regardless whether you cure or not, proper storage conditions are necessary to maintain the quality of your potatoes and limit shrinkage. Properly stored sweetpotatoes can be stored 9 months or more with little reduction in quality. Shrinkage occurs at 1 – 2% per month for cured potatoes, 2 – 5% per month for uncured. Pithiness may increase with storage time.

Storage temperature is very important. Keep the storage area at 55° to 60°F with a relative humidity of 85% to 90%. Rooms should be vented so that the total volume of air is exchanged in a 24 hour period.

Seed stock. Clean seed is very important. Seed for next year's crop should come from your cleanest and earliest harvested fields. Late harvested fields may have been chilled, which makes them more susceptible to disease and/or poor sprouting. Seed stock may be cured along with the market potatoes.

Clean seed has such a big impact on next year's crop that Louisiana and North Carolina are implementing very aggressive virus-tested seed programs for their growers. Their research has shown yield and quality improvements when using seed stock where viruses have been removed. The program is modeled after what has been going on in California for many years. We encourage you to consider purchasing some virus-tested plants through the California Sweetpotato Council and use these plants to produce seed for your next crop. Five varieties are available.

Disease. It's important to realize that while virus-tested plants will help control some diseases, they are not a cure all. Fungal diseases such as Scurf (*Monilochaetes*), Stem Rot (*Fusarium*), and damping-off can still infect slips after they've been put into the ground. Pox (*Streptomyces*) is not a fungus at all, but a bacteria, and can live in the soil for several years. It too can infect after transplanting.

Some of the ways to reduce disease in your field is to use clean seed, cut your slips (as opposed to pulling them), use field rotation, maintain proper soil pH, and keep equipment and bins clean. Pox, Black Rot, and nematodes can all be transferred from one field to another on soil particles and plant debris.

Virus diseases like Russet Crack are transmitted by sucking insects including aphids, white fly, and especially important for our area, leaf hoppers. It is impossible to prevent virus transmission in the field no matter how much you spray because the virus is transmitted almost instantly from insect to plant and vice-versa. Gradually, virus symptoms build up until the seed stock needs to be replaced. Part of our virus research we are doing right now is to determine how quickly viruses come back into the fields, and how long the benefits of virus-tested seed last.

CALIFORNIA SWEETPOTATO COUNCIL CLEANS UP BEAUREGARD AND HANNA

The California Sweetpotato Council chose Beauregard and Hanna to be cleaned up by FPMS at Davis, CA, for the 2000 production year. What this means is that these two varieties will be cloned by meristem tip culture, tested for viruses, and then increased to provide plants for future cuttings. The purpose of this process is to remove viruses and improve the genetics of the plant. This benefits the whole industry by providing a source of clean seed stock and slips for a few years.

Viruses cause such problems as Russet Crack and Internal Cork. They also can cause mutations, such as "tiger striping" or off-color. They are also partly responsible for the gradual yield decline that occurs when the same seed is used for many years.

Everybody has potatoes with viruses. After a variety is cleaned, it gradually becomes reinfected once put into the field. So the cleaning up process must be done every few years to ensure that good seed is available. Another benefit of clean seed is that other diseases, such as Black Rot and Scurf, are also removed.

UCCE CONDUCTS FIELD DAY

Were you there at this momentous occasion? On October 5 we held a Sweetpotato field day that was the first in several years. About 20 growers showed up to see some ongoing research and discuss the season and harvest. We were pleased with the turnout, and plan to hold it again next year. A BBQ lunch will probably be served.

For information on purchasing virus-tested plants, contact Bob Weimer, President of the California Sweetpotato Council.

UPCOMING EVENTS

Just a reminder for those of you who have not already made plans to attend. The **2000 National Sweetpotato Conference** will be held in Tunica, Mississippi this year on January 23, 24, and 25. This is a great time to meet other people involved in our industry, have fun, and learn a little as well. Call Benny Graves with the Mississippi Sweetpotato Council at 662-325-7773 if you need conference information.

In conjunction with the National Conference, we are planning a **tour of Dawson Farms (in Louisiana)** for just us California folks. Dawson Farms is the largest sweetpotato grower in the country, and he has some very interesting things to see. We will tour his farm on Saturday, January 22. Basically, we will rent cars and head out very early in the morning, and return early evening. So far more than 20 people are signed up. If you're interested in joining, call Scott Stoddard at the Extension office at 385-7403.

Bill and Scott will attend the Collaborator's Meeting in Lexington, KY, after the National Conference. There we will present data on the variety, virus-tested, and fertilizer trials. It is here where we receive the new variety seed stock to be tested in the county.

The **35th Annual Merced County Sweetpotato Meeting** is planned for the morning of January 19, 2000. This year a lunch is planned. We will send out a meeting notice soon with information on the agenda, time, and location. We'll present the research results in greater detail, and have some discussion on methyl bromide alternatives. Plan to attend.

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Bill Weir
Farm Advisor