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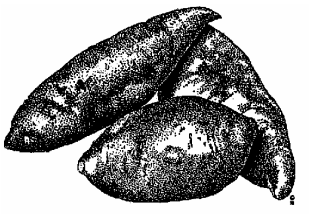

SWEETPOTATO TIPS

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CDFA SWEETPOTATO PRODUCTION ESTIMATES

According to the California Department of Food and Agriculture and the National Ag Statistics Service, 2003 was a big year for sweetpotato production, both here and the U.S. California produced 7.8 million boxes from 10,400 acres with an average yield of 750 boxes per acre. National production is estimated at 39.8 million boxes, up 24% from 2002 and the largest crop since 1962. These production levels were attributed to both an acreage increase and record high yields.

According to the report, the yield increases in California were due to "…increased use of drip irrigation and wider availability of fumigants...". It will be interesting to compare these figures with the county estimates due out later this spring. It is my opinion that these figures are overestimated.

State	Harvested Acres		Yield, boxes/A		Production Million boxes	
	2002	2003	2002	2003	2002	2003
Alabama	2700	2600	450	475	1.22	1.24
California	**10,400**	**10,400**	**660**	**750**	**6.89**	**7.80**
Louisiana	15,000	18,000	310	435	4.69	7.88
Mississippi	12,300	13,600	400	435	4.92	5.95
New Jersey	1200	1100	310	290	0.38	0.32
North Carolina	37,000	42,000	325	350	12.00	14.70
South Carolina	1100	1000	275	375	0.30	0.38
Texes	3300	3200	450	400	1.50	1.28
Virgina	500	500	525	535	0.26	0.27
U.S.	**83,500**		**385**	**430**	**32.2**	**39.8**

Winter Sweetpotato Production Meeting

Feb 25, 2004
9:00 – 11:00 am
UCCE Classroom

SELECTING SEED

The seed you use for your 2004 crop should come from fields that you harvested early and were free of disease. Avoid seed from fields infected with Pox, Scurf, stem rot, russet crack, and/or nematodes, all of which can be carried into this year. Tip the end of some roots to check for color, especially on Dianes. Consider replacing Beauregard seed more than three years old with virus tested plants through the Sweetpotato Council of California. Beauregard quickly becomes infected with the feathery mottle virus, and yield and quality decline after 3 years.

2003 RESEARCH SUMMARY

The full report for these trials is available at the Merced office and at the county website at http://cemerced.ucdavis.edu.

Fumigation Trial. Shanked Mocap, Vapam, and a tank mix combination were compared to Telone and an untreated area. Market yield and cull weights are shown in Table 1. All treatments except for the 2 gpa Mocap treatment significantly increased #1 yields and total market yield over the untreated control. The Telone and Vapam treatments had the highest marketable yields. Culls caused by grubs and wireworms were significantly reduced in all treatments as compared to the untreated control.

Collaborators Trial. The sweetpotato variety trial. Yield results are shown in Table 2. Yields in general were extremely good. All B14 and B63 (Beauregards) varieties in this trial had statistically similar #1 yields, followed closely by MS 152 and Diane. California Beauregard had reduced #1 and total marketable yields compared to the others, probably because the seed is 3 years old and showing signs of russet crack disease. W375 and Koto Buki yielded significantly less than the other varieties.

Herbicide Trial. Different rates of Devrinol and Dacthal were compared in a late season seed field. Redroot pigweed weeds were significantly reduced by all treatments as compared to the untreated control. Better control was obtained with the high rates of Devrinol and Dacthal. Combining the two in a tank mix did not improve weed control in this trial (Figure 1). Some phytotoxicity was observed in the Dacthal plots at the high rate.

Iodomethane Fumigation Trial. A new, unregistered material similar to methyl bromide is iodomethane (trade name MIDAS). Three different rates were compared to Telone and an untreated control. Highest total marketable yield (TMY) was found for Telone and the low rate of iodomethane. As the iodomethane rate increased, however, yields declined (Figure 2), which probably indicates that the rate was so high that the system was over-dosed. There were no differences between treatments in the amount of cull potatoes produced.

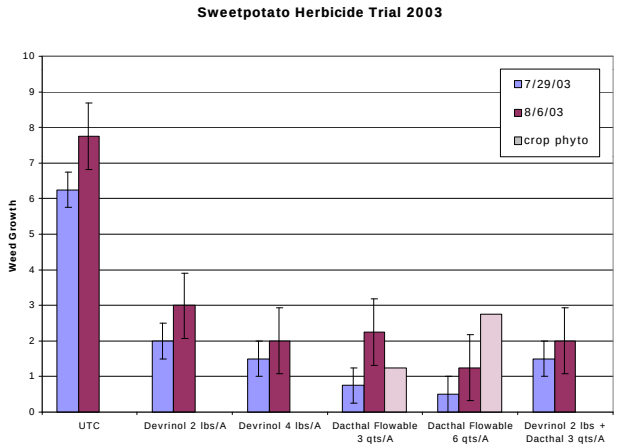

Figure 1. Weed growth ratings on 7/29 and 8/6 by herbicide treatment.

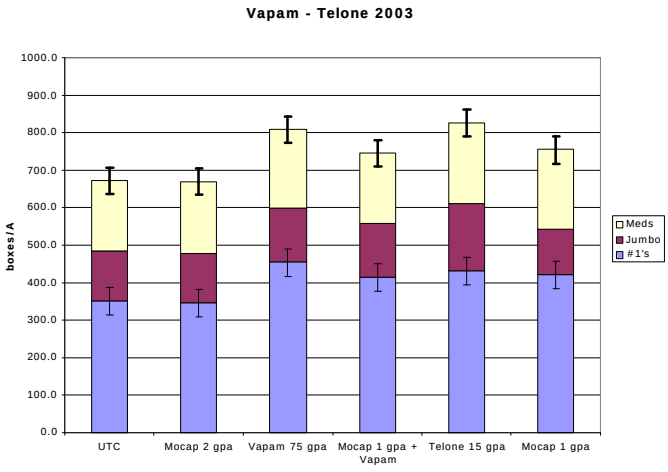

Figure 2. #1, medium, and jumbo yield as affected by fumigation treatment. Height of bar equals the total market yield.

Table 1. Soil fumigation trial on sweetpotatoes, 2003. Market yield and cull weights

plot	treatment	40 lb boxes/A #1's	Jumbo	Meds	culls nematodes	culls grubs/wireworm	culls other	Total Culls boxes/A	TMY boxes/A	bins/A	
1	UTC	350.9	133.8	187.4	3.7	106.0	19.7	129.3	672.0	26.9	c
2	Mocap 2 gpa	345.3	131.3	192.0	9.0	27.5	29.5	66.0	668.6	26.7	c
3	Vapam 75 gpa	454.1	145.0	208.4	7.4	52.1	18.5	77.9	807.5	32.3	ab
4	Mocap 1 gpa + Vapam	413.0	145.4	186.0	0.0	23.1	13.0	36.1	744.4	29.8	b
5	Telone 15 gpa	431.6	179.8	214.9	0.8	23.0	25.1	48.8	826.4	33.1	a
6	Mocap 1 gpa	421.1	123.0	209.7	1.6	14.8	44.2	60.6	753.8	30.2	b
x	Mocap + Vapam 18"	393.7	121.7	215.7	0.0	51.2	46.9	98.1	731.1	29.2	
	Average	402.7	143.1	199.7	3.7	41.1	25.0	69.8	745.5	29.8	
	LSD 0.05	73.1	NS	NS	NS	38.1	NS	41.7	71	2.8	
	CV (%)	12.1	32.4	21.4	245	61.5	94.7	39.6	6.3	6.3	

Cull potatoes were separated based on whether the damage was due to nematodes, grubs and/or wireworms, or something else.
TMY = total market yield = #1 + Jumbos + Mediums
LSD 0.05 = Least significant difference at the 95% confidence level. Means separated by less than this are not significantly different.
NS = not significant.
CV = coefficient of variation, a measure of the variability in the experiment.

The Mocap + Vapam 18" treatment was shanked on an 18" spacing in one rep only, and is not included in the statistical analysis.

Table 2. National Sweetpotato Collaborators summary of yield data, 2003

STATE AND LOCATION REPORTING: Livingston, CA
DATE TRANSPLANTED: May 16. DATE HARVESTED: Oct. 22. No. GROWING DAYS: 159
DISTANCE BETEEN ROWS (in): 40. DISTANCE IN ROW (in): 9
PLOT SIZE: NO. OF ROWS: 1 LENGTH (ft): 40 NO. OF REPS: 4
IRRIGATION: drip irrigation. 1.5 to 2 inches per week during summer.
FERTILIZER: with the drip system. About 125-75-125 NPK

	-------	40 lb boxes/A		-------	1000 lb	%	boxes/A
SELECTION	**US #1'S**	**CANNERS**	**JUMBOS**	**MKT YIELD**	**BINS/A**	**US #1'S**	**CULLS**
B14 (G1)*	772.3	172.0	552.5 ab	1496.9	59.9	51.9	19.5
B63 (G2)	768.1	157.6	745.2 a	1671.0	66.8	46.3	177.1
B14 (G2)	763.4	270.8	362.8 c	1397.0	55.9	55.1	38.5
MS I52	720.8	243.4	383.5 bc	1347.8	53.9	53.6	33.1
Diane	685.6	300.5	364.4 c	1350.5	54.0	50.4	28.3
Cal Bgard	597.3	270.0	429.8 bc	1297.2	51.9	45.6	69.1
W375	498.1	240.6	269.7 c	1008.4	40.3	49.6	35.5
Koto Buki	294.0	179.4	134.4 d	607.8	24.3	46.4	33.6
Average	637.5	229.3	405.3	1272.1	50.9	49.9	54.4
LSD 0.05	180.3	97.3		295.8	11.8	NS	NS
CV, %	19.2	28.9	15.4	15.8	15.8	13.9	28.1

US #1's	Roots 2 to 3.5 inches in diameter, length 3 to 9 inches, well shaped and free of defects.
Canners	Roots 1 to 2 in diameter, 2 to 7 inches in length.
Jumbos	Roots that exceed the diameter and length requirements of above grades, but are of marketable quality.
Mkt Yield	Total marketable yield is the sum of the above three categories. Bin weight = 1000 lbs.
% US #1's	Weight of US #1's divided by total marketable yield.
Culls	Roots greater than 1" in diameter that are so misshapen or unattractive as to be unmarketable.
*	B14 plants arrived as cuttings.
	CA Beauregard from 2001 virus tested seed.
LSD 0.05	Least significant difference. Means separated by less than this amount are not significantly different.
	Cull and jumbo LSD performed on transformed data to assure homogeneity of variances.

ARE WE REALLY ROLLING IN THE DOUGH?

Last summer, Charles Walker, the editor for the national Sweetpotato newsletter, wrote an article about the value of the sweetpotato crop in this state versus the others. It was titled "Can You Believe It?" and pointed out that according to USDA statistics, the production value of California sweetpotatoes in most years exceeds that of LA, MS, and NC combined. He then went on to pose the questions: "How are California growers able to convince receivers to pay twice as much per pound for the same product [as the other states]; and "How can eastern growers produce sweetpotatoes so cheaply?"

Charles is not the first to puzzle over this apparent discrepancy. I once saw an economist give an entire presentation, complete with in-depth statistical and market trends analyses and come to the conclusion that "California's getting all the money". He was not happy with me when I told him that his analysis was based on flawed data.

Anybody who has attended a National Meeting knows that the California price is about the same (and sometimes even less) than the shipped box price from any other state. This information is presented to everyone at the convention during the state update sessions. Typically, prices for USDA Beauregard #1's packed 40 lb box are quoted around $10 - $14.00. Sometimes a little more, sometimes a little less. For some reason, people forget this when they see the USDA numbers.

The USDA National Agriculture Statistics Service computes the value of the sweetpotato crop by multiplying the yield by the price. There is no doubt that our yields are about twice that of the other states, and this doubles our production value per acre. But then, our production costs are also about double the other states. The USDA, however, estimates the price received at about $0.30 per pound for California sweetpotatoes, while for the other states it is around $0.13 per pound.

Wouldn't it be great if all the California growers were getting $300 per bin for Beauregards? (1000 lbs x $0.30 per lb). The more important question is why the USDA is making such a preposterous and incorrect assumption. The simple answer is because our crop price is based on a packed box ($12/40 lbs = $0.30) whereas in the other states it is based on grower bin price ($130/1000 lbs = $0.13/lb).

I have also tried to talk to the USDA about this apparent discrepancy in collecting data and have been told that they use the same survey form and system for all states. To be honest, there are other reasons why our price is higher, mainly, varieties and market. The USDA makes no differentiation between varieties, thus the higher value Japanese, sweets, and reds that we grow here cause the average price, whether it be per bin or per packed box, to rise. Furthermore, as compared to the southeastern states, we sell very little (~ 5%) for processing. So a much greater percentage of the overall California crop is sold for fresh market, which has higher value.

Another puzzling detail about the USDA data is that it puts the value of the crop in the eastern states below cost of production in almost every year. For example, according to a 1999 report by Mississippi State, the total production expenses for sweetpotatoes in that state are $2316/acre. According to USDA, the total value of the crop In Mississippi has exceeded this only once in the last 15 years. So either sweetpotatoes are a very, very bad crop to grow in Mississippi, or the USDA data clearly underestimates their value.

I do not know why the other states are usually underestimated in the USDA reports. One possible scenario is that the grower reports the price as an average of processing and fresh market. For example, one bin sold for processing at $100 is the equivalent of $0.10 per lb. One bin for fresh market may sell for $160 (= $0.16/lb). Thus, the average of these two is $0.13. This is reported to USDA regardless of the percentage of the total crop that went to processing or fresh market.

To make a good survey, the USDA needs to differentiate between processing and fresh market, specify Beauregard (or similar) type only, use *median* rather than *mean* price quotes, and specify a packed or bin price. If they did this, the California price would come down, and the others would come up. And there would no longer be any big discrepancy in the value of sweetpotatoes across states.