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## IN THIS ISSUE:

- ✓ February 15, 2022 meeting agenda
- ✓ DPR units requested: 1.0 hours L&R and 1.5 "other". 3.0 CCA units.
- ✓ Production notes.
- ✓ Telone monitoring

### **Special Note:**

*This is an in-person meeting! But because of COVID rules, masks will be required.*

*Heavy metal sampling project in 2021 showed very good results, plan to repeat in 2022.*

*There will be a Metam stewardship class from 2:00 - 4:00 pm on Thursday, Feb 15 (class required by CAC for growers using metam products)*

# 56<sup>th</sup> (because of COVID) Annual SWEETPOTATO MEETING

Tuesday, February 15, 2022

8:00 am - noon

UCCE Classroom

2145 Wardrobe Ave., Merced

- |         |   |
|---------|---|
| 7:30 am | Signing in, coffee, and Jantz Sweetpotato muffins   |
| 8:05    | Scott Stoddard, Farm Advisor. Summary of 2020 - 21 variety and pest management research: Collaborators trial and ALT, nematicide trials, IR-4 herbicide evaluation, fungicides for the control of southern blight, and potassium fertilizer trials. |
| 9:00    | Sean Runyon, Assistant Merced County Agriculture Commissioner. DPR regulations update: Telone and chlorpyrifos restrictions and label changes.  |
| 9:50    | Brian Hegland, Teleos Ag Solutions. Telone good stewardship practices; availability, monitoring and registration updates.   |
| 10:20   | Coffee break  |
| 10:40   | Jill Silverman Hough, jillhough.com. The Sweet Potato Council of California marketing review.   |
| 11:00   | Robert Drozdowski, AgriControl Technologies. NHV systems for California sheds: Can it be done?  |
| 11:45   | Darren Barfield. SPC Board nominations and Convention wrap + DSA recognition.   |
| Noon    | Lunch   |
| 1:30 pm | The Sweet Potato Council of California business meeting (library).  |

January, 2022

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## PRODUCTION NOTES

During the winter of 2020 - 2021 Merced County recorded 7.65 inches of rainfall, which is 65% of average. Much of this came in January, then there was very little after that. Spring was dry and windy, and much of the snow in the mountains simply evaporated before it could come down stream. The end result? Very low reservoir levels, low soil moisture, and epic forest fires once again. The summer was very hot in the San Joaquin Valley in 2021 — there were at least 33 days over 100 F in the Livingston area, and July 10 set a record high of 111 F. This was by far the hottest summer I can remember since moving to the area in 1998. Governor Newsom announced in mid summer that California was once again under an extreme drought, which surprised no one.

Coupled with high heat was bad, smoky air from numerous wild fires surrounding Merced County. Bad air stresses people and plants. Both melon and sweetpotato fields grew funny, depending on when they were planted. Vining, where the plants grow vertically like beans instead of horizontally, was commonly observed. Anecdotally, I was told by many that yields were down for all varieties, with Murasaki being especially bad in 2021. This really isn't supported by my Collaborators Trial data, however (Table 1). **Note: the huge increase in Vermillion and Bellevue yield in 2021 was likely a result of switching to new seed.** Overall, I estimate yields to be down about 10% compared to the 5 year average, to around 32 bins per acre.

**Table 1. Total marketable yields, boxes/A, from the Collaborators Trial 2018 - 2021.**

	2018	2019	2020	2021
<b>Cov.</b>	812	890	984	1084
<b>Diane</b>	829	1162	1054	937
<b>Bonita</b>	661	954	783	623
<b>Vermillion</b>	548	1006	851	1285
<b>Bellevue</b>	921	889	807	1436

The main production problems in 2021 were largely abiotic: wind and labor shortages. Spring and fall wind storms were persistent and damaging. The wind storm on Oct 10 - 12 was especially bad, with frequent gusts over 40 mph. And for the first time in many years, we experienced an October rain on the 22, with about ½" recorded. Because of harvesting delays, there was still many acres in the ground. Cold fall rains are always problematic for the stored crop. Breakdown in storage is always increased when the crop is harvested wet.

## ACRES

USDA has revised their estimates for production acres in California:

2018: 21,000

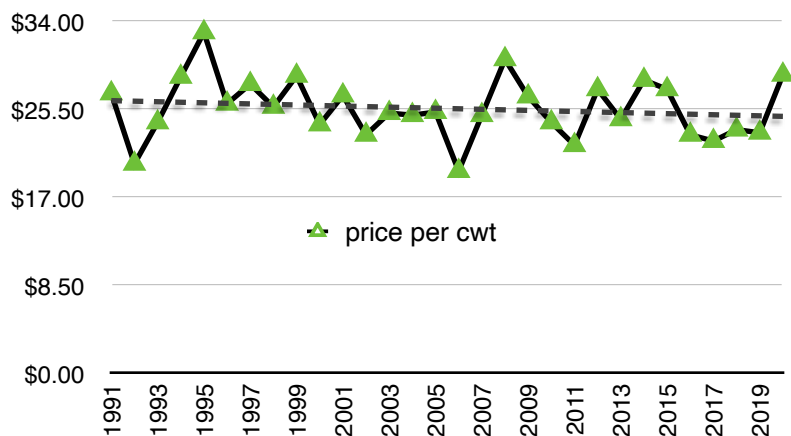
2019: 21,500

2020: 22,000

2021: nothing official yet, but my guess is 22,500



**The October windstorm stripped the upper 6" of soil from the plants and caused sand-blasted skins on exposed roots.**



**Figure 1. Average sweetpotato price per 100 lbs as reported by USDA-NASS for California growers, 1991 - 2020. This is ~ \$10/box.**

Assuming 32 bins and 22,450 harvested acres, total production this year is around 718 million pounds, about 700,000 lbs less than the previous 3 years.

While production is slightly down this year, what is more troubling is the long-term price trend for this crop. According to USDA, over the past 30 years prices received by growers have stayed the same to slightly declined (Figure 1). In 1991, the average price was \$25 per hundred wt — about the same as it is in January 2022 as I write this newsletter. 2022 production costs are expected to be significantly higher as well — fertilizer is up 81% over last year, for example.

**Vermillion (formerly coded L-13-81) is characterized by a good shape and tough red skin, but is nematode susceptible. Production looked good in 2021 in Livingston with virus tested seed.**

#### VIRUS TESTED SEED TRIAL

In 2021, I evaluated three varieties for the impact of new compared to old seed. “New” seed was from virus-tested plants that were grown for one year in the field (G1 seed); “old” seed was seed that I had been using in my variety trials for several years in a row, and was at least 5 years old (G5+). Plants were grown under hotbed conditions typical for California, then transplanted May 24 into a grower’s field. Plots were 1-row by 50 feet, and were replicated 4 times

**Table 2. Sweetpotato root yield as affected by age of seed source. Merced County 2021.**

variety	age	TMY lbs/A	40 lb box/A adj			adj TMY box/A	total bins/A	No. 1's #1%	Culls cull%
			No. 1's	Meds	Jumbos				
Beauregard	G2	30922	325	98	195	618	30.9	52.7%	21.9%
	G5+	20702	224	47	143	414	20.7	54.0%	53.2%
Bellevue	G2	71803	723	257	456	1436	71.8	50.6%	5.0%
	G5+	39257	390	122	273	785	39.3	50.5%	27.3%
L-13-81	G2	64241	736	198	350	1285	64.2	57.6%	4.9%
	G5+	33407	330	108	230	668	33.4	48.4%	20.9%
<b>Variety LSD 0.05</b>			83.1	43.0	75.2	166.9	8.4	ns	8.3
<b>age p test</b>			***	***	**	***	***	ns	***
<b>Variety x age p test</b>			**	ns	ns	*	*	ns	ns
<b>CV, %</b>			17.2	29.1	26.1	18.0	18	13.4	34.9

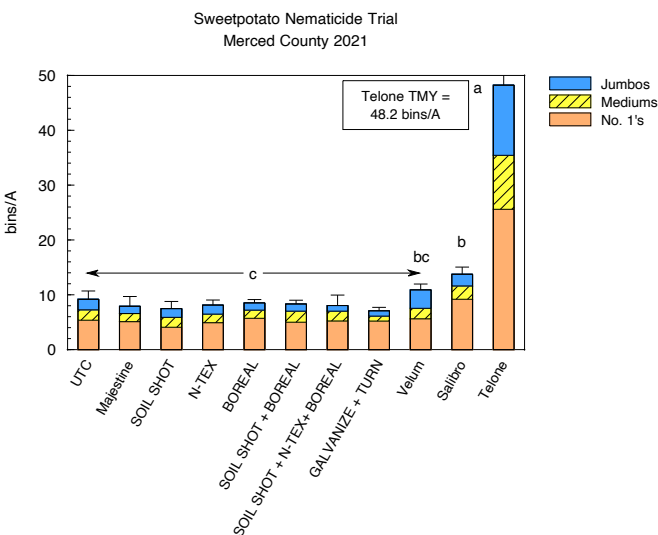
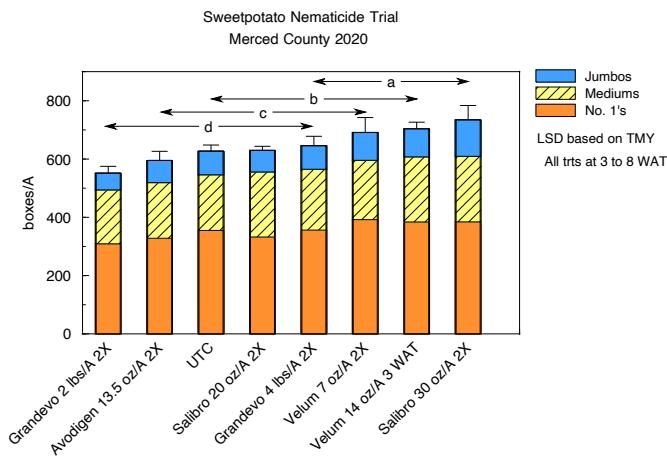
TMY = total marketable yield

using a RCB design. Harvest took place on Oct 13, 2021, using the grower's harvester and harvest crew.

Prior to bedding, roots were virus tested by Dr. Chris Clark at LSU. All roots, including G1 seed, were infected with viruses, but the old seed had greater number of infected roots as well as a much higher incidence of 2 potyviruses: 20% for G1 seed, 66% for G5+ seed. Preliminary field trial harvest results are shown in Table 2. The benefit of using virus tested seed for all three cultivars is clear: a remarkable 50% to 92% increase in yield, and a reduction in culls of 59% for Beauregard, 81% for Bellevue, and 77% for Vermillion.

### NEMATOCIDE TRIAL RESULTS

Nematode trials were conducted in 2020 - 21 in a commercial sweetpotato field in the buffer zone



where no fumigant was used. The field had been in continuous sweetpotato production for 10 years. Treatments included Velum (fluopyram, Bayer Crop Science), Salibro (fluazaindolizine, Corteva Agriscience), and several biological nematicides, including Majestine and Grandeyvo (Marrone Bio Innovations). Treatments were designed to test different rates, timings, and combination of materials. Untreated control plots were used for comparison in both years; in 2021 Telone was also used as a comparison treatment.

Nematicide treatments were applied at 3 to 8 weeks after transplanting (WAT), depending on product use guidelines, by injecting into surface drip tape. Sweetpotato variety 'Diane' (RKN susceptible) was used both years. Harvest was done using the growers mechanical digger and crew. Plots were 1 bed x 100 feet with 4 replications. Treatment design was a randomized block with four replications. Means separation was performed using Fisher's protected LSD at  $P=0.05$ .

Salibro and Velum had significantly better yields in both treatments than the biological nematicides, however, yields were still dramatically less than Telone (only 2021 data shown). In 2021, nematode pressure was severe and untreated yields were very low, less than 10 bins per acre, with very high cull%, average of 53%, or nearly half of total production was culled because of obvious nematode symptoms. In neither year were nematode counts reduced by any treatment, except Telone.

Over 5 years of testing, Salibro and Velum have increased TMY in Diane by an average 36.8% and 15.5% respectively, as compared to the untreated control. While not as effective as Telone, they are helpful for reducing the yield impact from nematodes in susceptible varieties. Note that Salibro is not currently registered in California, but is getting close. Perhaps in late 2022.

Scott Stoddard, Farm Advisor