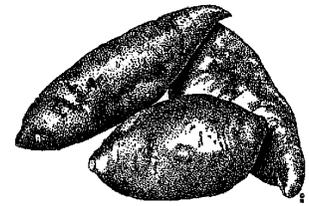




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## SWEETPOTATO TIPS

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March, 2001

### TWO NEW CHEMICALS REGISTERED FOR SWEETPOTATOES

It doesn't happen that frequently in this industry, which is why it came as a pleasant surprise to learn that **Success** (Spinosad), from Dow AgroSciences, and **Dacthal** (Chlorthal-dimethyl) from Amvac Inc., are registered for sweetpotatoes in California. Actually, Dacthal has had an active registration all along, but it hasn't been manufactured for a number of years. **Dacthal** is a pre-emergence herbicide for control of some common annual and broadleaf weeds such as crabgrass, foxtails, nightshade, chickweed, purslane, lambsquarters, pigweed, and sandbur. **Success** is a selective insecticide for worms (armyworm, tomato fruit worm), leaf miners, and thrips. It is applied to the foliage when pests appear. Success is similar to Bt (Dipel, Javelin) formulations in that it has little impact on non-target insects. It is *not* labeled for organic production.

Both Dacthal and Success are caution materials, which means they are relatively safe to use. Like all pesticides, always read and follow label directions. Both of these materials should be available at your local agriculture services dealer (Simplot, Western Farm Services, etc).

#### Registered Insecticides:

- |           |               |              |
|-----------|---------------|--------------|
| • Temik   | • Thiodan     | • Diazinon   |
| • Azatin  | • Mocap       | • PennCap-M  |
| • Bt's    | • Safer Soap  | • Pyrethrins |
| • Sevin   | • Lannate     | • Mycotrol   |
| • Lorsban | • Metaldehyde | • Success    |

#### Registered Herbicides:

- Dacthal
- Devrinol
- Fusilade
- Poast
- Roundup

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### HOT BED/COLD BED TEMPERATURE

*The ideal soil temperature in your hot beds is 70 to 85° F. Much hotter than this and you run the risk of increased seed decay and plant stress. On sunny days, be sure to check the temperature of your hot beds to make sure they aren't getting too hot under the plastic.*



## TWO NEW VARIETIES FROM SOUTH CAROLINA RELEASED

Dr. Janice Bohac, the sweetpotato breeder with the USDA-ARS in South Carolina, has released two new sweetpotato varieties: Ruddy and Patriot. Ruddy is a red-skinned, orange-fleshed variety that combines good yield potential with high insect and nematode resistance. Patriot is a copper-skinned, orange-flesh variety that sacrifices some yield potential for multiple resistance to diseases and pests.

Ruddy was tested in the Collaborators Trial here in California in 1997 and 1998 as W287. In our trials, it had dark red skin, and was smooth with good shape. It yielded 88% of Beauregard in 1997, and 138% in 1998. The resistance to nematodes, wireworms, and grubs is similar to Regal, a variety that was released in 1985.

We did not taste-test Ruddy in our trial, and so we do not have information on its eating and baking qualities.

Patriot is a variety that may have a fit in organic production because it is claimed to have very high resistance to insects (grubs, wireworms, flea beetles), wilt, and root knot nematodes. However, its yield potential is only about 80% of Beauregard. Patriot is also a mid to late season variety.

Patriot was not tested in California. We plan to enter it in the Collaborators Trial this year to see how it performs in our conditions.

For more information about these varieties, contact Dr. Janice Bohac, USDA-ARS Vegetable Laboratory, Charleston SC 29414-5334. Also, remember that any sweetpotatoes brought in from South Carolina for propagation purposes are subject to strict quarantine rules by the State Department of Agriculture. Proper permits are required. Contact the Merced County Agriculture Commissioner office for more information at 385-7431.

### TO KEEP OR NOT KEEP GARNET....

The Sweetpotato Council of California has decided to keep up the virus-indexed maintenance on the Garnet variety for one more year, with FPMS in Davis. This was decided after an initial motion to drop it, because of the maintenance fees.

## COLLABORATORS MEETING AND NATIONAL SWEETPOTATO COUNCIL MEETINGS WELL ATTENDED

The National Collaborators Meeting was held January 27– 28, 2001 at Ft. Worth Texas. This is the meeting where we get together with researchers from other sweetpotato producing areas to go over current research and developments in the industry. It is especially important for California, because it is here where we learn about potential new varieties coming from the breeders in the other states. There were several presentations of practical application to California growers, including:

- We will test L94-96 one more year in our trial. This could be the Beauregard replacement. Eats and yields like it, but with better nematode resistance.
- NCSU study showing 50% defoliation needed before significant yield reduction occurs.
- Virus tested seed work. Not only do virus decrease yield, they also make Beauregard skinnier.
- Beauregard has no nematode resistance.
- Most storage rots from *Rhizopus* will hit 100 to 150 days into storage.
- The other states have Admire registered for grub and wireworms. Possible work to get us on the label?

The Alabama Sweetpotato Council put on a very good national convention this year in Gulf Shores, AL. Good food and great hospitality. The weather was pretty good as well. Next year, California will be hosting the convention at the Napa Marriott. Contact Bob Weimer at 358-1685 for more information about this important event.



## 2000 RESEARCH SUMMARY

Last year was a busy year for sweetpotato research at the Extension office. Below are brief summaries for each of the trials we performed last season. For a complete report, contact Bill Weir or Scott Stoddard at the Extension Office at 385-7403.

- Collaborators Trial. Wide range of results, with Beauregard still near the top. L94-96 will be tested one more year. Couple of new lines from South Carolina look promising.
- Fertilizer Trial. Somewhat of a disappointment, because we saw little response to N or K. No yield or storage response. We plan to continue in 2001.
- Virus-Tested Seed Trial. Large increase in yield from VT seed as compared to old seed, but trial was compromised because of slip condition.
- Goal Herbicide Trial. Application of Goal pre-plant incorporated gave excellent weed control and best yields. (Note: Goal is not registered on sweetpotatoes).
- Devrinol Herbicide Trial. Good weed control and yields at two locations.
- Albion Foliar Fertilizers. Small yield increase with added potassium and foliar Zn, Cu, and B.
- Fumigation, Cover Crop Trial. Telone worked better than cabbage for control of nematodes and best yield, but best treatment was the combination of the two.
- World Virus Decline Project. No data first year, will continue this project in 2001.
- Sweetpotato Degree Day Evaluation. Preliminary results suggests a degree day model based on cotton could be developed.

### SEPARATE VARIETIES IN HOT BEDS

Remember to keep your varieties separated if you are using seed that is of different generations. Older seed will invariably harbor more disease and viruses than new seed. If you mix some old Hanna with some clean Beauregard seed in the same bed, for example, aphids and leaf hoppers will quickly transmit virus from the Hanna to the Beauregard. According to researchers at North Carolina, viruses start to reduce yield as quickly as three years. Also



note this occurs even if the seed does not show signs of virus infection like Russet Crack. So if your seed source is older than three years, don't bed it with your new clean seed.

Certain varieties should be planted early for best results. Garnet is one of them. Research done by Bob Scheurman showed substantial yield increases when Garnets were planted in early May as compared to late May. Also remember that Garnets should be harvested early in the fall so that they don't get chilled—another reason to plant them early in the spring.

### CUT SLIPS TO PREVENT DISEASE

You all know this but it bears repeating: to limit the spread of disease such as Scurf and Pox from bed to field, cut your slips about ½ - 1" above the soil line in the bed.

Dipping slips in a solution containing a fungicide may help with diseases such as Scurf, Black Rot, *Pythium*, *Phytophthora* (one of the damping off organisms), and Fusarium Wilt (sometimes called Vine Wilt or Stem Rot). Benlate (Benomyl), Mertect (Thiabendazole), and Ridomil Gold (Mefenoxam) are registered for sweetpotatoes and can be used in this way. Solution strengths and dipping times vary with the chemical, so be sure to read the label.

Unfortunately, Pox cannot be controlled by using the fungicides listed above. The best controls for Pox are soil fumigation, good sanitation, field rotation, and maintaining a soil pH below 5.5.

## FUMIGATION ALTERNATIVES

In part to the methyl bromide phase out process combined with Telone caps, soil fumigation became more complicated this year. Here are some short and long-term alternatives to think about:

**Rotation:** A field may be “clean” if it has been out of sweetpotato production for a few years, but be sure to get a soil sample for root knot nematodes. Also, consider what herbicides may have been used on the previous crop. This is especially important with sweetpotatoes in the Livingston area, since much of the rotational ground was previously used for permanent crops, and these herbicides can cause big problems with an annual crop like sweetpotatoes. Following is a list of common alfalfa, almond, peach, and vineyard herbicides with their plant-back restrictions:

### Common herbicides used in permanent crops.

Trade Name	Common Name	Crops	Plant-back Restrictions
<b>Surflan</b>	Oryzalin	Fruit and nut orchards, vineyards	12 months
<b>Treflan</b>	Trifluralin	Alfalfa, cotton, vegetables	5—12 months
<b>Karmex</b>	Diuron	Alfalfa, Walnuts	12 months
<b>Eptam</b>	EPTC	Alfalfa, almonds, walnuts	Problems may occur if season not normal
<b>Velpar</b>	Hexazinone	Alfalfa	12—24 months
<b>Solicam</b>	Norflurazon	Tree fruits, grapes, almonds	12—24 months
<b>Goal</b>	Oxyfluorfen	Almonds, grapes	Up to 60 days with incorporation
<b>Kerb</b>	Pronamide	Alfalfa, grapes, peaches	12 months
<b>Prowl</b>	Pendimethalin	Non-bearing orchards and vineyards	12 months

**Solarization:** Can work well under the proper conditions, but may be limited to areas for hot-beds because of time, area, and expense. To be effective, organic matter (compost, manure) should be added to *moist* soil, then tarped with clear plastic for 4—6 weeks in July—August. Solarization guides are available at the Merced office.

**Varieties:** Thinking of planting Jewel instead of Beauregard because of improved nematode resistance? Don’t forget that Pox may get you if you do. Below is a list of some common varieties and their relative resistance to diseases and nematodes.

**Sweetpotato resistance. S = susceptible, R = resistant, I = intermediate.**

Variety	Root Knot Nematode	Stem Rot	Pox
<b>Beauregard</b>	S	R	I
<b>Diane</b>	S	R	—
<b>Garnet</b>	I	R	I
<b>Eureka</b>	I	R	R
<b>Regal</b>	I	R	S
<b>Jewel</b>	I-R	R	S
<b>Hanna</b>	S	S	I-S
<b>Golden Sweet</b>	S	S	I-R
<b>Koto Buki</b>	—	R	S
<b>L94-96 (experimental)</b>	R	R	I-R
<b>Ruddy (new)</b>	I-R	R	I



**Cover Crops:** Some recent research by both the ARS and UCCE suggests that cover cropping with *Brassica* cover crops (cabbage, kale, mustards, broccoli, etc.) and then incorporating may help control soil diseases and nematodes. These cover crops release isothiocyanates when they break down—the same active chemical found in Vapam.

**Chemicals:** Research trials have shown that Telone combined with chloropicrin can be just as effective as traditional MeBr, provided you can control the weeds by some other method. Vapam (Metam Sodium) can be used through a drip system with the proper equipment, though the entire bed needs to be wetted for good results. Methyl iodide, a new possible replacement for methyl bromide, is effective, but cost prohibitive right now. For nematode control, Mocap and Temik are both registered on sweetpotatoes. Very important: Temik has a 120 day pre-harvest interval.

#### NEW PEST MANAGEMENT GUIDELINES

The following UC IPM Pest Management Guidelines have just been updated and are available for a minimal charge at the Merced Office:

- Almonds
- Cotton
- Floriculture
- Pear
- Plum
- Spinach
- Strawberries
- Sugarbeets
- Tomato

#### The following reports are available at the Merced Office:

- Fresh Market and Processing Tomato Research Progress Report
- Sweetpotato Research Progress Report
- UCCE Sample Costs to Produce Fresh Market Tomatoes in the San Joaquin Valley
- UCCE Sample Costs to Produce Processing Tomatoes in the San Joaquin Valley

#### IPM UPDATE BREAKFASTS

For those sweetpotato growers who also grow nuts or tree fruit, Farm Advisors Lonnie Hendicks and Maxwell Norton are now having their annual IPM Update Breakfasts. The next scheduled meeting is Wednesday, April 4, 7:00 am to 8:30 am at the Livingston Almond Tree restaurant. These meetings cover current weather and give a pest outlook and management alternatives. Continuing education credits are available.

#### *Sweetpotato Council of California*

The Council is now 24 years old. It is a voluntary growers organization that helps the industry through promotion, education, and funding for seed improvement and the clean-seed program. The Council recently purchased a new display booth to be used at trade shows and conferences. They are currently preparing to host the National Sweetpotato Convention in Napa in January, 2002. All growers, shippers, and supporting industry are encouraged to become members. Contact Bob Weimer at (209) 358-1685 for more information.

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