



University of California Cooperative Extension

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SWEETPOTATO TIPS

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COOPERATIVE
EXTENSION WORK IN
AGRICULTURE, HOME
ECONOMICS, AND 4-
H, U.S. DEPARTMENT
OF AGRICULTURE,
UNIVERSITY OF
CALIFORNIA, AND
COUNTY OF MERCED
COOPERATING.

HOTBED PROBLEMS?



How are your plants doing this year? All the cloudy wet weather may be starting to cause problems in the beds like damping-off and rootlet rot. These are the names for a disease caused by a variety of different root-nibbling pathogens like *Phytophthora*, *Pythium*, and *Rhizoctonia*. For sweetpotatoes, *Fusarium* may also be involved.

Symptoms are often indistinct, but often there is a general decay on the roots and stems in the beds. Rootlets may become light brown to dark black, and the cortex (outer portion of the stem)

may be sloughed, leaving a relatively undamaged stele (inner core of root and stem). You'll first notice areas in the beds where leaves are wilting or becoming chlorotic, and plants are stunted or die.

The damping-off pathogens require cool soil temperatures and free standing water for disease development. These are the conditions in the beds when the plastic is not removed on most days. Whenever fresh air can't get to the plants, there is an increase in the potential for disease problems to develop in the beds.

We all know that the reason for keeping the plastic on this year: since the beds have been put in, there have been few days when it hasn't been cloudy or rained. Merced has received more or less average rainfall this season, but most has come since mid-February (Figure 1). Cloudy days with no rain also hurt the beds. Solar radiation is significantly less this spring than normal as well (Figure 2).

Management. Open the beds to get air to the plants as often as possible, but if this is not possible (very likely) or the problem worsens, you may need fungicides. Please note: the following is a discussion of fungicides registered for sweetpotato production to control one or more damping-off organisms; I have not evaluated them for efficacy.

- ◆ Ridomil Gold EC. Even tho this fungicide should control *Pythium* and *Phytophthora*, it is not a good choice to use now that the plants are up. Tho the use guidelines do not really fit sweetpotato culture, the label recommends pre-plant soil applications or spraying on the soil surface followed by water incorporation before plant emergence. Foliar applications are not recommended.

Merced Precipitation and Solar Radiation 2006

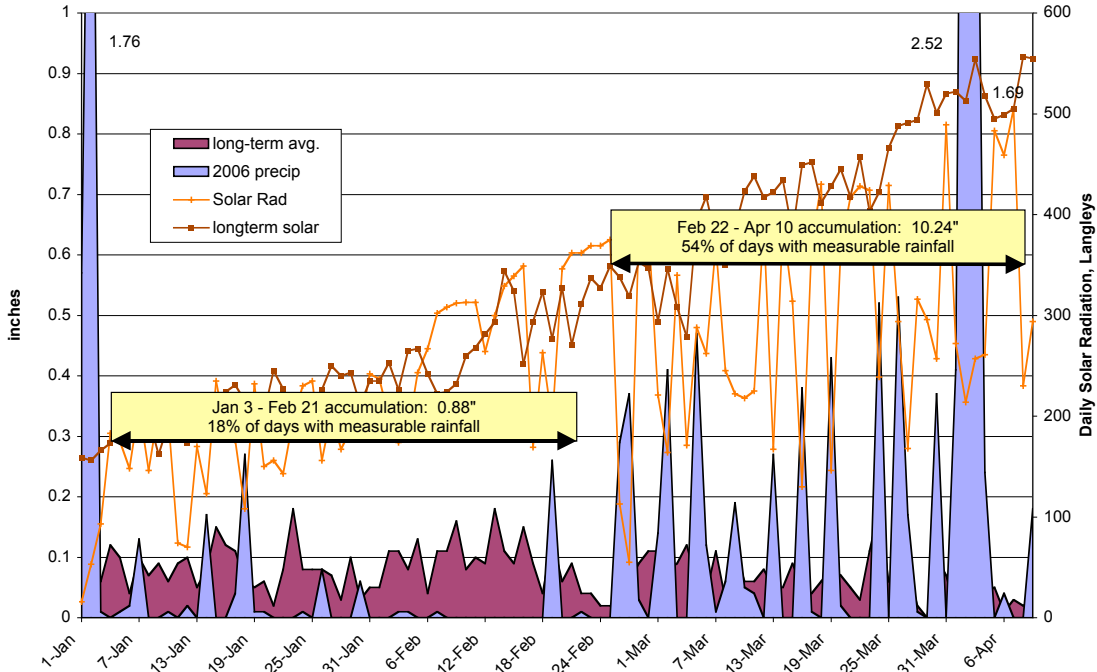


Figure 1. Daily precipitation and solar radiation (sunshine) for Merced from January 1 through April 10, 2006. Values are compared to long-term averages. Compared to an “average” year, our rainfall has come much later, and solar radiation is much less.

Merced Max and Min Temps 2006

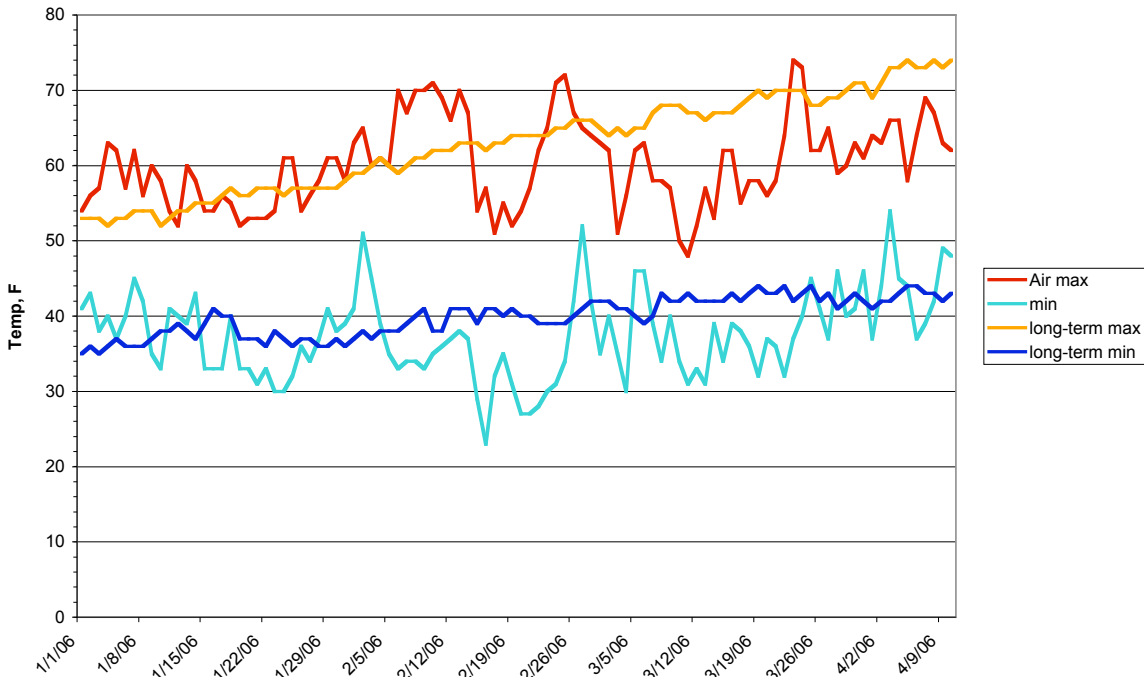


Figure 2. Daily temperatures for Merced compared to long-term averages. Since mid-February, both high and low temps have been less than normal.

- ◆ Mertect. Controls Scurf, Black Rot, *Fusarium*, and *Sclerotinia*, but would probably be ineffective on the damping-off fungi. Save it for your plant dip.
- ◆ Benlate. Can control a variety of fungal diseases, but not these in the damping-off category. Save your stock for dipping the transplants.
- ◆ Botran. Like Benlate, this fungicide won't help damping-off. Needs to be applied on the seed potatoes before covering.
- ◆ Apron XL and Maxim. Both are registered to control Pythium and Phytophthora in sweetpotatoes, but only as a seed treatment. It's too late to use these.
- ◆ Promax (Thyme Oil). A broad spectrum fungicide that is also OMRI certified for organic production. May help suppress damping off in the plant beds. Use at a rate of 1 gal per 100 gallons of water.
- ◆ Quadris Flowable (azoxystrobin). Probably the best and only registered fungicide that would work at this point in time. Quadris is labeled for post emergence and foliar applications for control of various fungal diseases, including damping-off. It can even be used through the sprinklers, tho I do not recommend this method because not all of the bed needs to be treated. Apply to the area with damping-off as a directed spray to the soil, using one or more nozzles, making sure to get thorough coverage of the lower stems and soil surface. This fungicide works better as a preventative, so be sure to include the surrounding healthy plants to keep them from being infected. Suggested rates are 0.4 to 0.8 fl oz per 1000 ft of row, which for hot beds is basically 1 fl oz per 100 ft of bed. Make sure you use enough water that the fungicide gets down through the foliage to the bed surface.

Estimating Harvest Dates

The following table may prove helpful in determining when your crop will be ready based on plant date.

Transplant date	Seed	No. 1's	Jumbos
	900 DD	1500 DD	1800 DD
April 15	July 5	Aug 5	Aug 23
May 1	July 10	Aug 11	Aug 29
May 15	July 16	Aug 17	Sept 5
June 1	July 26	Aug 28	Sept 17
June 15	Aug 4	Sept 8	Oct 2
July 1	Aug 18	Sept 28	not likely

Based on cotton degree days (DD) with Beauregard and long-term weather data for Merced.

Cost of Production Study

The first sweetpotato cost study in over 25 years, the final report should be done soon, which gives cost estimates to grow and store a sweetpotato crop. It will also serve as a quasi production manual. Bottom line: about \$5600 per acre, which includes cash and non-cash overhead costs but does NOT include packing charges. Other notable points:

- ➔ Total costs: \$5627/A.
- ➔ Hot beds cost about \$17.50 per linear ft.
- ➔ Weed control costs are about \$300 per acre for hand hoeing and cultivation; a banded Roundup application down the middle of the bed is about \$7 per acre. Roundup is registered--you should use it.
- ➔ With a marketable yield of 32 bins per acre, your break even costs amount to \$8 per box (average), or \$12 per box FOB shed.

Research

The 2005 research progress report is available in our office or you can view and download it from our website at <http://cemerced.ucdavis.edu>. (Click on the Vegetable Crops link). Planned 2006 research:

- Collaborators Trial. New lines of interest include a Japanese type (red skin/white flesh), a red yam, and a purple/purple.
- Hot bed fumigation trial (started late 2005).
- Hot bed solarization demonstration.
- Fungicide dip evaluation.
- Armyworm insecticide trial.
- Devrinol chemigation rate trial.

Sunny days will return soon, so I wish you a productive season. Please call if I can be of assistance.



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