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Special Note:

October 2011
Happy Harvesting



FIELD MEETING OCTOBER 18, 2012, WITH LSU PLANT BREEDER DR. DON LaBONTE

Join me at noon on October 18 for a brief field day to see harvest of the Advanced Line Trial (ALT). This is the variety trial I have conducted with Dave Souza and Don LaBonte, LSU Plant Breeder. The main emphasis of the trial is to evaluate new red yam varieties, but there is usually one or two sweets and yams to look at as well. Notable entries: Bonita (sweet), Evangeline (yam), 06-52 (yam), 07-190 (red yam), 08-124 (red yam). Don will also be there to take notes on the new entries and answer your questions. Lunch provided.

ALT Harvest Field Day

Tuesday, Oct 18, 12:00 noon

South-east corner of Atwater Jordan and Sultana Rds, east side of field

Lunch: tacos and baked sweetpotatoes (come taste the new entries)

Special Guest: Dr. Don LaBonte, LSU

Other Meetings:

There will be a Speciality Crops Research Initiative (SCRI) progress and planning meeting at the National Convention in Dana Point on Tuesday afternoon.

GENERAL NOTES

Merced received 1.1 inches of rain last week from the storm that came through October 3 - 5. Concurrently, the soil temperature at 6" dropped about 5° F, to 64° F. This will probably impact the long-term storability of roots, as even with the return of sunny weather it is unlikely that the soil temp will increase. Remember last year? We had a similar storm on October 24 which also resulted in 5° drop in soil temperature. It is the temperature drop, more than the actual rain, which increases the chances of problems in storage. There is little that can be done

October, 2011

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in the field at this time to compensate for this storm's impact. Fertilization should be stopped, as late applications of N may further increase storage problems. Irrigation can probably also be stopped, as irrigating further cools the soil.

Ideal storage conditions are 57° F at 90% relative humidity — something that is very difficult to achieve accept during December, January, and February. Realistically, relative humidity of 80% gives good results, is much easier to maintain, and results in far less condensation. Airflow is another important component, as this is used to regulate CO₂ in the sheds. Some studies have indicated that elevated CO₂ (2 - 3%) may improve long-term storage, but we have a lot more research to do on this. Current airflow recommendation is 36 ft³ per minute per ton.

Of the three, temperature is the easiest and most cost effective way to maintain good root quality for up to 12 months. A constant cool temperature, where the temperature fluctuates less than 5° F, is the best way to avoid premature breakdown and excessive weight loss.

RESEARCH RESULTS

This year I continued my USDA ARS sponsored methyl bromide alternatives evaluation with 6 different cooperators: Nathan Mininger, Bob Chad, Brad Nightengale, Matt Alvernaz, Tom Dallas, and Armajit Kandola. Different rates of chloropicrin, from 250 - 650 lbs/A, were compared to standard MeBr, metam sodium (Vapam), solarization, or untreated beds. The pic was used with new Raven Vapor-Stop TIF (totally impermeable film) plastic and applied by Tri Cal Inc. On top of the fumigation treatments, I also compared the herbicides Devrinol, Dacthal, and Valor at 1.0 and 1.5 oz/A. Treatments were then evaluated for weeds, disease, nematodes, and plant production.

As in previous years, nematodes were sampled by taking a 500 cc soil sample from each of the main plots in February before the beds were installed and again at plant harvest in May. No root knot nematodes (*Meloidogyne incognita*) or other plant parasitic nematodes were found at either sampling event. Similar to nematodes, the soil analysis for potential root rotting pathogens showed no significant differences among treatments. *Pythium* populations were extremely low in all plots.

With the fumigation treatments, only MeBr provided adequate weed suppression. Even though Pic was applied at very high rates under totally impermeable film (TIF), weed suppression was negligible. Most of the weeds, with the exception of yellow nutsedge, were effectively controlled with the herbicides evaluated at each location. Application of Devrinol or either rate of Valor significantly reduced the number of weeds as compared to not treating, with Valor having the greatest efficacy on the weeds present. Dacthal prevented most weed growth, but caused substantial crop injury and cannot be recommended for use in hotbeds even though it is a registered herbicide for sweetpotatoes. No crop phytotoxicity was seen as a result of the main plot fumigation treatments, and there were no differences in plant production between any of the treatments with the exception of Dacthal.

These results, combined with the three years of previous research, indicate that we can maintain productive hotbeds without methyl bromide. My recommendations:

- Pic-chlor 60 (Telone + pic) under tarp, basically at the same time as MeBr. However, efficacy is improved when the soil is warmer in the fall. Some suppression of weeds, but expect more unless the field is very clean to begin with. Cost: \$2000 + per acre.
- Metam sodium (Vapam, K-pam, Sectagon-42), applied in the fall, either through sprinklers or shanks, but expect better weed control with sprinklers. Max rate is 75 gpa, but I have gotten good results at 45 gpa. Cost: \$500 + per acre.
- Solarization. Takes advanced planning -- you do it in July and August -- and weed control is marginal but can improve over time with repeated use each season. Requires the use of cold beds. Weed control significantly improved with herbicides. Cost: \$1000 per acre if using a custom applicator for the plastic.
- Herbicides: Valor at 1.0 to 1.5 oz/a equivalent, or Devrinol at 4 lbs/a, applied after bedding and before emergence of weeds

or sweetpotatoes and incorporated with sprinklers for 10 - 20 minutes. With Valor, you need to use only 8 grams per 1000 feet of bed, so use caution. It is difficult to accurately measure such a small amount and substantial crop phytotoxicity occurs at rates above 2.0 oz/A (10 grams/1000 ft). Nonetheless, the weed control Valor achieves in the beds is simply remarkable -- about the only thing it will not control is nutsedge. Cost: almost nothing on a per acre basis, but neither herbicide is cheap by the pound.

- Combinations of fumigation plus herbicides work well. A Telone + Vapam combination is extremely effective and you won't need additional herbicides, but this isn't easy to come by — Tri Cal does not offer this for our industry — and it doesn't resolve the issue with Telone caps.

I will weigh out Valor herbicide for any grower who would like to test this in his beds. Old film canisters work well for this. Another way is make a dilute solution. For example, if you have a postal scale that can accurately weigh 1 oz, then add this amount to a quart of water. Shake well, then use 1 cup (8 fl oz) of this solution per 1000 feet of bed. This is equivalent to 7.1 g/1000 ft. Obviously, you are adding this cup of herbicide solution to your spray tank, which you have calibrated to deliver a known amount of water.

Devrinol is a little easier since it is old chemistry and the rate is much higher. Use 3/4 lb per 1000 ft (12 oz).

Adjuvants are not needed for either herbicide, since they are applied before weed emergence.

HOTBED POST EMERGENCE GRASS

CONTROL. The herbicides Fusilade (fluaziflop) or Select Max (clethodim) can be used to selectively control grassy weeds in the hotbeds after emergence. This herbicide will not hurt the sweetpotatoes. A crop oil concentrate is needed.

FIELD WEED CONTROL

Dual Magnum herbicide for yellow nutsedge control. Dual Magnum (S-metalochlor) has a special local needs label (24(c)) for control of yellow nutsedge. Dual is an old herbicide that is used in

many crops pre-plant incorporated for control of many grasses, nutsedge, and a few broadleaf weeds. For sweetpotatoes, it also controls pigweed and nightshade, two of the more common broadleaf weeds we deal with, provided it is applied correctly. But there is also a risk of crop injury, especially in our sandy soils. I am evaluating the product for the second year.



Dual Magnum at 1 pint per acre suppressed, but did not stop yellow nutsedge emergence in this heavily infested field. The importance of proper incorporation are readily apparent in this photo, where a weed-free band can be seen next to the plant row.

Scott Stoddard,
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