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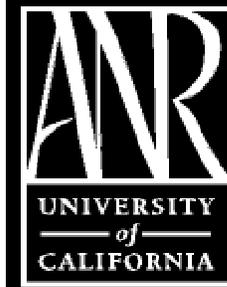
## COOPERATIVE EXTENSION

University of California – Yolo, Solano & Sacramento Counties

# South Sacramento Valley

## Field Crops Report

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### *2008 Wheat Crop*

After a slow wet start, this season's wheat crop is starting to look fairly good. In the heavy soil and low-lying rice ground, we had some early losses due to flooding. Many areas turned fairly yellow from water-logging. Most of these areas are now greening up. Herbicides were applied with few problems and some additional nitrogen has been flown on. I would caution everyone to think hard before applying additional nitrogen this season; I doubt you can recover the cost of the application at today's high fertilizer prices.

It looks like a late start on wheat diseases this year. So far, **stripe rust (SR)** has been found on the UC Davis campus within a very susceptible variety in the disease nursery, in a Yecora Rojo field at Dan Best's (Co. Rd 14), and in Summit and Solano in my variety trial there. This Yecora Rojo field is the location of The Best Show on Tracks tractor show coming this summer. It is just east of his shop and north of my variety trial. Kevin Gash, Growers Ag Service, gets the prize for finding this disease loci. Yecora Rojo is a SR susceptible wheat variety and is NOT recommended for production in the Sacramento Valley. Most of the wheat acreage planted is with varieties that have the new 2-trait stripe rust resistance. We are hoping to get 5+ stripe rust free years out of those varieties. Summit, Blanca Grande, Solano and PR1404 are the commercial varieties that we still need to watch. It is very important that you let me know if you see stripe rust in Cal Rojo or Blanca Furete.

**Quick Note:** We have confirmed finding stripe rust in Cal Rojo. Jerry Schmerier and I have checked on the seed source and are confident that it is stripe rust that we are seeing. So much for having a break, keep a sharp eye out!

**Septoria** leaf blotch is slow developing this year thanks to the dry weather we have been having. A new wheat variety, Joaquin, which was developed for the San Joaquin Valley where Septoria is not a problem, was planted in several fields Yolo County. Jerry Schmierer and I have established a Septoria fungicide trial in one of those fields to see if we can find a way to control this disease. To date, I have yet to see a successful fungicide application to control this disease. If it works we will have a field meeting to show you the methodology.

Aphids are just now showing up in numbers, so barley yellow dwarf virus (**BYDV**) will not be a problem this season. It is really too early to know about the other foliar and stem diseases, we will just have to wait and see.

### *Wheat Variety Trial Locations*

Come on out to see my variety trials. All are staked with the variety names on one end.

Locations:

Best Ranch – just east of his shop north side of Co CR 14, east of Hwy 113

Gnos Ranch – Stevens Bridge Rd 0.2 miles north of Severs Rd on the east side

Hunn Merwin – east end of N. Courtland Rd. and Z Line, SW corner

Mello Farms – SW of his shop 2rd road to the south 2<sup>nd</sup> field in

I am happy to meet you at any one of the locations. Please call 530-666-8733 to schedule a meeting date and time, or if you need directions.

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## ***Mid Season Nitrogen Fertility Management in Wheat and Barley***

*Doug Munier, Steve Wright, Alan Fulton, Jerry Schmierer, Kent Brittan, & Lee Jackson*

(I'm reprinting this in case you missed it in the California Wheat Commission's weekly newsletter.)

The total nitrogen recovered by a wheat crop in season can range from 60 to 250 lbs N/A depending on the final grain yield. A high yielding and high protein wheat crop (3-3.5 tons/A above 13 % protein) will require about 150 to 225 lbs/A of applied nitrogen in a season. Residual nitrogen in the soil from previous crops will provide the difference between the nitrogen provided with fertilizers and the nitrogen which is recovered by the crop. Barley will require less applied nitrogen than wheat (about 125 lbs N/A) in a season because it is lower yielding and grain protein is not a concern.

A good guideline is to have at least one-half, but no more than two-thirds, of the seasonal nitrogen fertilizer requirement applied preplant to establish a vigorous crop with maximum yield potential. The remainder of the nitrogen fertilizer requirement should be supplied with one or two supplemental nitrogen applications during the crop season. The timing of the first post plant N applications should occur during tillering before the wheat starts elongating. The second postplant N application for increasing wheat quality should occur between boot and flowering. Barley or oats do not require an N fertilizer application after the boot stage.

Nitrogen fertilizers for increased yield are most effective during tillering, but are also effective in the jointing stage. Nitrogen applied after boot stage will have a minimal effect on grain yield (at most a 200 to 300 lbs/A yield increase due to plumper kernels and higher bushel weight), but will increase grain protein. Rates of 30 to 50 lbs N/A topdressed, followed by significant rainfall (0.5 inches) or irrigation should be sufficient. Water run applications should be limited to 25 to 30 lbs N/A to minimize volatilization of the fertilizer.

The use of stem nitrate-nitrogen tissue tests is an effective way to monitor the nitrogen status of a wheat or barley crop. Table 2 provides critical stem NO<sub>3</sub>-N levels for wheat and barley as the crop develops from the third and fourth leaf stages up to the early boot stage (late March to early April). This test is not effective for managing late season N fertility in wheat after heading when the goal is to produce high grain protein.

Proper tissue sampling procedures are necessary to attain a valid and informative analysis. Collect 20 to 40 stems at random from the field in question. Cut off the roots and plant tops and send the bottom 1 to 2 inches of each stem to an agricultural laboratory for analysis. Be certain the stem tissue sample is not contaminated with soil or old leaves. Submit the tissue sample the same day that it has been collected.

**Table 2: Wheat and barley stem NO<sub>3</sub>-N analysis critical levels during vegetative growth.**

<b>Growth Stage</b>	<b>Approx. Date</b>	<b>Deficient Level</b>	<b>Desired Range</b>	<b>Excessive Zone</b>
3-4 leaf	Jan. 25	<7,000	7,000-12,000	>12,000
Tillering	Feb. 1 - March 5	<6,000	6,000-11,000	>11,000
Jointing	March 5 - March 25	<5,000	5,000-10,000	>10,000
Boot	March 25 - April 1	<4,000	4,000-9,000	>9,000

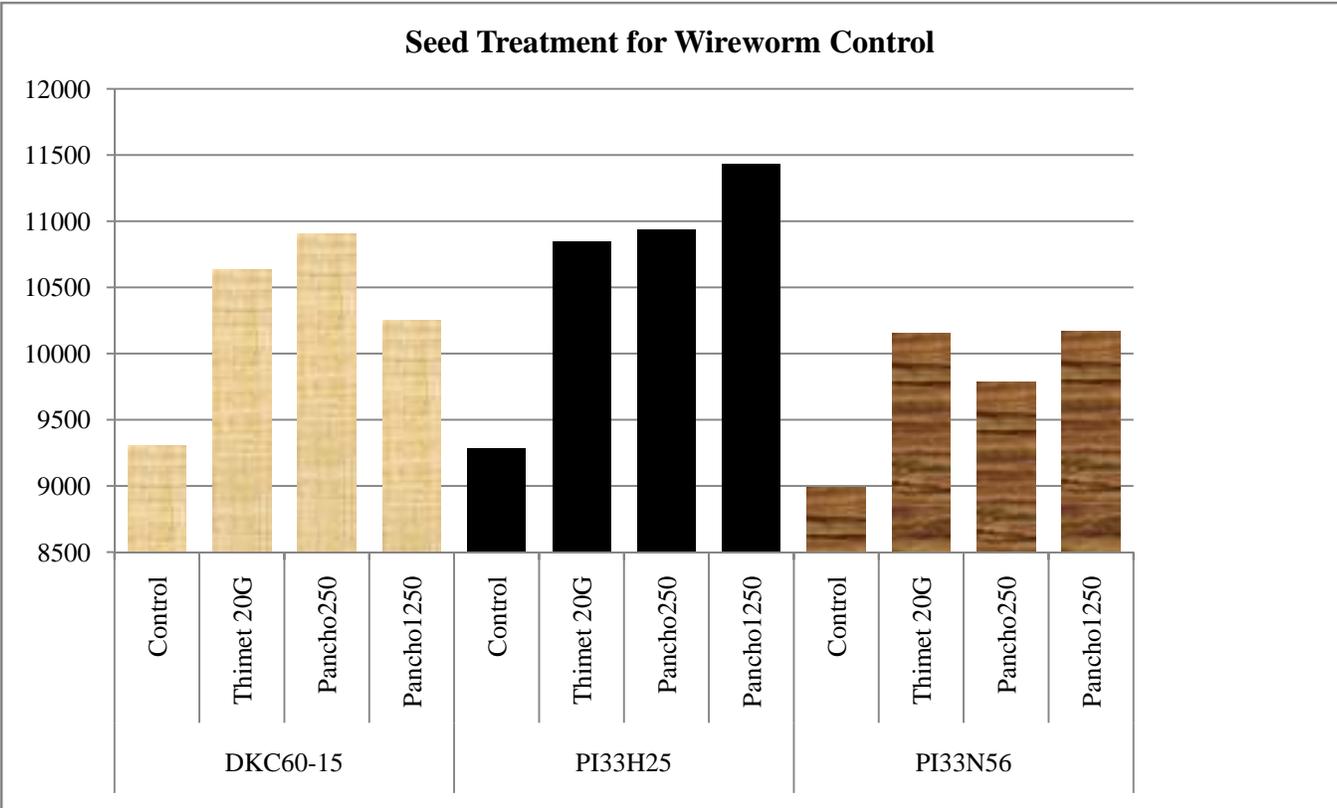
Choice of fertilizer material used to manage a crop will depend on the current weather conditions, weather forecasts, and costs. In the cooler and wetter areas, like the Sacramento Valley, ammonium sulfate (21-0-0 24S) may be the preferred form of nitrogen fertilizer. Plants growing in cool wet soils do not utilize sulfur as readily as in dry warm soils. Also, lighter textured soils have less available sulfur and wheat may benefit from additional sulfur applied in the spring. Urea (46-0-0) is the highest analysis and usually the cheapest form of dry fertilizer. Either ammonium sulfate or urea are effective forms of nitrogen when broadcast and followed by at least 0.5 inches of rain within 5 days after application. Urea must be converted to nitrate nitrogen by soil microorganisms, so it is released over a longer period of time and thus, less prone to leaching from the root zone. However, the urea form of nitrogen is relatively unstable once it has been broadcast; volatilization losses can occur.

Water run applications of nitrogen can be useful for nitrogen fertility. Anhydrous ammonia (82-0-0), UAN-32 (32-0-0), and aqua ammonia (20-0-0) are the primary fertilizers used for this purpose. Anhydrous ammonia is most economical because of its higher analysis. However, UAN-32 is more easily handled and the nitrate component in UAN-32 is readily available to the crop.

A final alternative to supply N to the crop is aerial applications of UAN-32 or foliar urea. Tank mixes of UAN-32 with MCPA and other herbicides are effective means of applying both herbicides and nitrogen. Nitrogen rates should be limited to less than 25 lbs N/A. If aerial applications of UAN-32 are applied when air temperatures exceed 80 ° F, considerable leaf burn and some yield loss is likely.

### ***Corn Seed Treat for Wireworm***

Some of you may remember that I was working on an alternative to Thimet at corn planting to reduce wireworm stand losses in peat soils. Three years research has shown that Pancho seed treatment is significantly better than or as good as Thimet depending on the corn variety. There is a significant difference between corn varieties and the effectiveness of Pancho. Steve Mello, at whose farm the research was conducted, feels that he can go 2 years with Pancho seed treatment and then use Thimet one year. If we can reduce the use of Thimet by one-third, I'll be happy. While Thimet is a very effective insecticide, it is one of the more toxic insecticides to humans that we use today. Please read the label and be very careful when you use it.



Three grain corn varieties are shown with the 4 treatments: Thimet 20G, Pancho 250, Pancho 1250 and an untreated control. Three replications, 4 rows/plot 875 feet long.

### ***Double Cropping***

Have you looked at sorghum/milo prices lately? How about double cropping after wheat?

Water availability is the issue for some, doubling input costs, and birds are also always considerations.

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## *Equipment Needs*

Please consider donating that nicely used combine to your local Farm Advisor. My old John Deer 95 is just about seen its last harvest. I've been holding it together with duct tape the past few years and it's pretty worn out. All donations are tax deductible and keep the applied field research program going.

Thank you for *all* your support; I could not do what I do without you.....

Submitted by,

Kent Brittan

Farm Advisor, Yolo, Solano and Sacramento Counties

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*March 11, 2008*

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