UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE
Cooperative Extension Service

SOYBEAN NOTES

University of Arkansas Division of Agriculture

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Production

Jeremy Ross – Extension Agronomist

It's a new growing season and a new look for the *Soybean Notes*. I hope everyone is ready for soybean planting. I'm ready for planting season after traveling the entire state for production meeting this winter. A lot of excellent information was presented at these meeting on soybean production. The hot topics discussed this past winter were soybean rust, the RoundUp resistant weed problem, insecticide seed treatments, and the soybean seed quality problems. We will touch on these four items in this issue of the *Soybean Notes*. I have also had several questions on when soybean seed inoculants should be used and the use of molybdenum with inoculants. This topic will also be discussed below.

Seed Supply

As everyone knows by now, there is a very tight supply of soybean seed for this soybean planting season. The reason for this shortage is that many seed companies are having quality issues with many of their MG IV and early-V soybean varieties. The reason for the poor quality can be traced back to the very hot conditions that many states had from the middle of July through August of 2007. As of last week, the Arkansas State Plant Board (ASPB) had examined 643 regulatory seed samples for germination. Approximately 14% of these samples had germinations below 79%. The ASPB has issued more stop-sales and advisories for germination problems this year than in any other year for the last five years. Because of the quality problems, soybean growers need to take a few steps to ensure good germination and emergence of soybean seed:

- Reduce the stress placed on this year's soybean seed. Planting into cold, wet soils is one major stress to avoid.
- Calibrate your planter or drill to maximize seed placement uniformity.
- Take care to reduce the physical damage on soybean seed at each point of handling.
- Consider fungicide and insecticide seed treatments to reduce pest stress.

It will be important to check the seed size (seed/lb listed on bag tag) carefully when switching lots or varieties, and adjust drills and planters accordingly. Much of this year's soybean seed are smaller and have a wider seed size range than we have seen in past years.

Because seed of many of the popular soybean varieties will not be available, seed companies are substituting many

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soybean varieties that have not been tested in the University of Arkansas Soybean Variety Trials. It is still important to know characteristics such as disease reactions, lodging and shattering scores, chloride sensitivity, and other ratings which may determine where these varieties will best perform on your farm. This information should be available from the seed companies or from surrounding states where these varieties have been tested.

On the subject of insecticide seed treatments, Dr. Gus Lorenz presented at many of the County production meetings his data on Gaucho and Cruiser seed treatments. These trials have been conducted for the last five years, and both insecticides have shown a probability of net returns of 71% and 85% for Gaucho and Cruiser seed treatments, respectively. Because of these results, we are recommending an insecticide seed treatment on soybean seed. Many times, we have seen better emergence and early plant growth where these insecticide seed treatments were applied compared to the results found in untreated plots.

Soybean Seed Inoculants

With the significant number of fields going into soybean this year that historically have not been planted to soybean, I have had numerous questions about inoculants. Any inoculant for soybean should contain the nitrogen (N)-fixing bacteria *Bradyrhizobia*. These bacteria form the round nodules commonly seen on soybean roots. These bacteria are not native to Arkansas soils and are introduced by inoculating the seed. The bacteria take gaseous N from the atmosphere and fix it into N compounds required by the soybean plant. Molybdenum (Mo) is a micronutrient required by the bacteria to fix the atmosphere N. When the soil pH is below 7.0, Mo becomes fixed and unavailable. The current University of Arkansas recommendations are to 1) apply inoculants to soybean seed when soybean will be grown on land that has not been planted to soybean within the past 3 to 4 years or where previously grown soybean plants did not have adequate populations, and 2) a seed treatment of the micronutrient Mo at a rate of 0.2 - 0.4 oz/A should be applied in acid soil to enable the N-fixing bacteria to function properly.

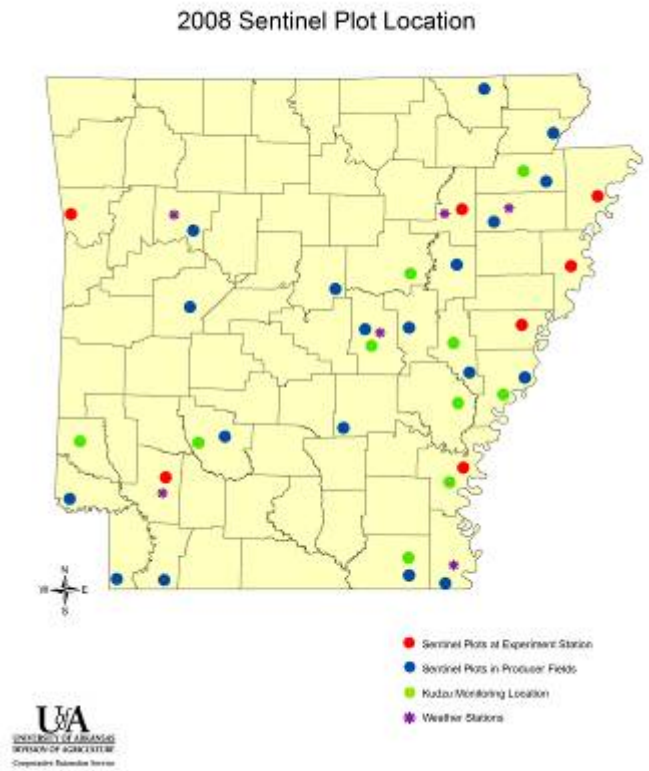
Soybean Rust Update

Amy G. Carroll – Program Associate

Soybean rust monitoring will soon begin for the 2008 growing season. Sentinel plots will be planted in the next week or two, depending on weather. There will be a total of 27 plots (see map below) around the state that will consist of three maturity groups (MG 4, MG 5, and MG 6). These plots will be monitored weekly for soybean rust. There will also be at least 11 kudzu monitoring locations. Leaves will be collected from these locations weekly. All samples for Asian Soybean Rust are to be sent to the Lonoke Health Clinic. There, they will be diagnosed and entered in to the USDA public PIPE website (http://www.sbrusa.net/cgi-bin/sbr/public.cgi).

Kudzu monitoring should begin when the first green leaves are spotted. Please feel free to collect these leaves and send them in to the Lonoke Plant Health Clinic.

The sample submission address is:
Amy Carroll
Lonoke Extension and Research Center
P.O. Box 357
2001 Hwy 70 East
Lonoke, AR 72086



Map of the locations of sentinel plots and kudzu monitoring locations for 2008.

Weeds

Bob Scott – Extension Weed Scientist

Starting off with a good burn-down program in soybeans is a must these days. In many systems and areas, it is the most important decision that is made for the whole year, at least from a weed control standpoint. Weeds have evolved, especially in reduced tillage systems that are complicating many burn-down scenarios.

Glyphosate-resistant horseweed has now been identified in almost every delta county in Arkansas. Horseweed and other difficult to control weeds, such as cutleaf evening primrose, wild garlic, flowering winter annuals, eastern black nightshade, pokesalad, common ragweed, and giant ragweed are making for some hard decisions early in the growing season. In the case of horseweed, if it is not controlled on the front end with a good burn-down program, then there are few good options to come back with POST.

Most burn-down programs for horseweed will begin in late February or early March. University of Arkansas research and the work of others has shown that 8 oz/A of Clarity (dicamba) herbicide in a tank-mix with glyphosate is the best choice for control of this weed. From an economic standpoint, glyphosate is still in the mix to control other weeds at burn-down. This tank-mix is also effective on cutleaf evening primrose and other tough broadleaf weeds. My second option is to substitute 1 quart per acre of 2,4-D for the dicamba. It is typically less than $1 per acre cheaper, but can work if everything is right.

Gramoxone and Ignite are pretty good, if the horseweed is very small. Neither product has a rotational issue with soybeans; however, both need dicamba in the tank in order to be real good. Other products just do not perform as well as dicamba and 2,4-D on emerged horseweed. As mentioned before, you need to get them the first try. Adding 2,4-D will usually pick up the other winter annual junk present in the field, and I prefer it to dicamba if flowering winter broadleaves like henbit and buttercups are the main target. You can also do combinations of reduced rates of dicamba and 2,4-D to approach fields with mixed populations of weeds that include horseweed.

Burn-down treatments with dicamba or 2,4-D need to go out an absolute minimum of 14 days prior to planting soybean. These dates assume at least one inch of rainfall. So, the way the plant-back interval works is to: spray your burn-down, wait until you get a rain and then start counting. After 14 days with dicamba, you can plant your soybeans. These are University of Arkansas recommendations and labels vary by product, so as always read the label.

Another area of concern with these treatments is application. It is essential to get good coverage for good control. I

recommend a minimum of 10 gallons per acre by ground. Speed, boom height and tip selection can play a part in getting spray on as much of the horseweed plant as possible. Last year, common mistakes made at application were: spraying in high winds and boom height being too high for effective coverage. There is less concern about herbicide drift this time of year, but it is still important to "keep it in the field." If the application is going out by air, be sure to talk to your aerial applicator about what his best configuration is for this application. Commercial applicators must understand the importance of this treatment and do everything they can to make it work.

In areas where horseweed is bad or where pigweed is a problem, many soybean growers are adding Valor, Synchrony XP, or Canopy EX, or another residual component to their dicamba + glyphosate burndown programs. These treatments looked good in our trials over the past few years. Valor can be applied up through planting, so your only restriction is on the dicamba plant-back. Plant-back intervals on the other residual treatments vary by product. Consult the label or the MP-44 for more information.

Another burn-down consideration is Palmer amaranth (pigweed). Using Valor Pre-plant is an excellent start to a program approach for pigweed, especially for later planted soybeans. It has a newer mode of action and glyphosate, SU and DNA resistant pigweed are susceptible to Valor. If you do not need the dicamba or 2,4-D adding Valor (or one of the Valor pre-mixes like Gangster or Envive) to your burn-down applied 10 – 14 days ahead of planting can get you pigweed control a couple of weeks into the season. This helps avoid Valor injury to soybeans, and is a good option for conventional soybeans or where glyphosate resistant pigweed is suspected.

Remember, if you miss horseweed early or it comes up and needs treatment in-season in soybean the best thing that I have looked at is a full rate (0.3 oz/A) of FirstRate. Unfortunately, this is really a payback, suppression type treatment. It will not completely kill the horseweed. You can make two applications of FirstRate per season and that can help, but I would rather have it controlled up front with the burn-down. The MP-44 and a podcast on soybean burn-down can be found at www.uaex.edu.

Contact Information

Please contact you local County extension agent in Arkansas, or the authors by e-mail at jross@uaex.edu, bscott@uaex.edu, or agreenwalt@uaex.edu if you have questions or comments regarding the newsletter.

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