

By Eric Probstko

Soybean growers turn toward conventional

enzyme in plants known as acetolactate synthase. The ALS enzyme is needed for the formation of specific amino acids (leucine, isoleucine and valine). ALS-inhibiting herbicides include such products as Accent, Cadre, Classic, Envoke, FirstRate, Permit, Pursuit, Sandea, Scepter, Staple, Strongarm and many others.

■ **PPO**: an acronym for an enzyme in plants that is essential in the formation of chlorophyll. When this enzyme is inhibited, rapid plant cell desiccation and death occurs. Examples of PPO-inhibiting herbicides include the following: Aim, Cobra, ET, Reflex, Valor and Ultra Blazer.

■ **EPSP**: an acronym for an enzyme in plants that is needed for the formation of other specific amino acids (tyrosine, tryptophan and phenylalanine). Glyphosate is the only EPSP-inhibiting herbicide.

The good news is that you do not have to be a scientist to recognize and understand herbicide modes and mechanisms of action. The weed science community has tried to make this as straightforward as possible by assigning a number to a particular mode or mechanism of action.

This information can be obtained at the following Web site: mulch.cropsoil.uga.edu/weedsci/Herbicide_Modes_of_Action.pdf.

In this chart, herbicides with the same number have the same mode or mechanism of action. Thus, it should now be very easy for you to recognize them.

For the 22% of you out there who say you are not overly concerned about herbicide resistance, I would like to quote the radio personality Earl Pitts by saying: "Wake up, America."

Herbicide resistance was first discovered in the early 1960s. According to the International Survey of Herbicide Resistant Weeds, there are now more than 322 weeds that have developed resistance to herbicides around the world. In the U.S., 123 weed species have developed resistance to herbicides. If herbicide resistance were an Olympic event, Team USA would easily win the gold medal!

Herbicide-resistant weeds are a reality. One of the best ways that you can delay or prevent their spread is by knowing and understanding herbicide modes and mechanisms of action. As always, good weed hunting!

Probstko is an Extension weed scientist for the University of Georgia.

By CECIL H. YANCY JR.

THE incentives point to an increase in conventional soybean acreage in the Mid-South this year.

As much of 5% to 7% of the soybean acreage in Arkansas could go to conventional varieties this year. Similar percentages could pop up in other Mid-Southern states.

The reasons include financial premiums for non-GMO soybeans, technology fees for transgenic varieties and weed-resistance issues, says Jeremy Ross, University of Arkansas Extension soybean specialist.

"I've had questions from Missouri, Mississippi, Kentucky and Arkansas about conventional soybeans," Ross says.

No. 1 reason

The No. 1 reason for the move to conventional soybeans is the 75-cent-to-\$1.25 premium on top of the Chicago Board of Trade price. "Some companies are paying a premium to have non-GMO soybeans," Ross says. "There will always be a niche for conventional soybeans."

The second reason is weed resistance. "For bigger farmers, Roundup Ready varieties have made it a lot easier to plant and spray without having to worry

Start and stay clean

TIMELY herbicide application is the key to growing conventional soybeans, says Jeremy Ross, University of Arkansas Extension soybean specialist.

Applying a preplant herbicide early is the key, Ross says. "Farmers just have to go back to the way it was 20 years ago when they were planting nontransgenic soybean varieties. You may have to pull the row cultivators out of the weeds."

The best way to set up conventional varieties for success is to start clean. "If you've got grasses, we've got herbicides to control them," Ross says. "I'd stay out of fields that have vines and sickle pods with soybeans. Broadleaf control is iffy with the herbicides available."

Key Points

- Conventional soybeans are gaining ground.
- Premiums, resistance issues, lower costs drive the increase.
- Be timely with herbicide applications and preplant.

about it," Ross says. "Now growers are looking at weed resistance." Continuous use of Roundup has led to weed resistance problems with marehail, Palmer amaranth and others.

This season, growers will have another option, LibertyLink soybeans, which are resistant to Ignite herbicide. "But many farmers will wait to see how the system performs for others before trying it," Ross says.

A third incentive is the lower seed costs of conventional soybeans compared to transgenic varieties. With transgenic varieties, growers have to pay technology seed fees each year and cannot save seed from one year to the next. With public, conventional varieties, farmers can save seed from the first year's crop to plant the next year.

While Roundup Ready soybean varieties have gained a lock on the market over the past 15 years, conventional breeding programs at land-grant universities have continued. Checkoff funds support these efforts. A handful of private companies also continue to offer conventionally bred varieties for sale. "There are not as many conventional varieties out there compared to transgenics," Ross says. "For example, in two different tests in Arkansas, we have 350 Roundup Ready varieties as compared to 25 con-



START CLEAN: Jeremy Ross, University of Arkansas Extension soybean specialist, says timely application of herbicides is important in conventional soybean production.

ventional varieties. Some of those conventional varieties are experimental."

In recent years, the University of Arkansas has released conventional soybean varieties under plant breeder Pengyin Chen. Osage, which was released in 2007, had the highest yield among conventional varieties in 2008 performance tests in Arkansas and Tennessee and tied for the highest yield in Mississippi.

The Ozark and UA 4805 varieties also perform well under growing conditions in Arkansas, Chen says.

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