

Optimum Planting Dates

Researchers Study Best Times To Plant Soybeans In Kentucky

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A study on planting dates for soybeans was presented recently by Dr. Jim Herbek, extension grain crop specialist with the University of Kentucky located at the Research and Education center in Princeton, Ky.

"We started this study two years ago and we plan on continuing this for several years," he explained. "We have a series of seven planting dates starting in early to mid-April and plant about every 10 days to two weeks apart, weather permitting, and stretching into early July. Because of the wet spring last year, it was difficult to get my planting date goals in but I came close to what I wanted."

The planting date research is funded by the Kentucky Soybean Promotion Board. The main objective was to define the optimum planting date in Kentucky. There is some planting date research that current recommendations are based on but it's been a few years since that research was conducted.

"We want to see if these recommendations still hold. Right now we're saying that if you plant from around May 9 or 10 through the early part of June based on our older research data, that's about optimum yield potential," Herbek said.

Another objective of the study is to push the planting dates earlier. Planting date research has been conducted at various uni-

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Photo by John LaRose, Jr.

versities in the United States, including the midwest, midsouth and deep south.

"Recent research out of the midwest – Iowa, Nebraska, Indiana – is saying late April through early May planting dates are optimum yield dates for them," Herbek said. "Their research indicates you lose yield if you plant in mid- to late-May; they say you get about a half a percent per day yield loss planting after the early part of May, around May 9. So we decided to see what these earlier planting dates would do here in Kentucky.

The third objective of the trial is to define what that last optimum planting date is. Presently recommendations are early June, up to June 7.

"I don't think that holds anymore in that possibly we're starting to lose yield, but our older data showed that we could plant up to early June and still maintain our yield potential," he said. "So we want to define what that last date is, and it may be late May now. However, the purpose of this research is to determine this."

This study began in 2007 which was a dry year, particularly in late summer. The data from that year was probably influenced by the weather.

"That's one thing on these planting date studies, you can't do just one or two years because it'll vary from year to year depending on when the rain came and how much came and at what stage of growth the soybeans were," he explained. "If they were in the reproductive growth stages like podding and seed fill, drought there will hurt you more; so what we found in 2007 was that our best yields were the April and early May planting dates. After that we starting losing yields, and I know a lot of this had to do with the drought. We lost yield potential by planting the later part of May and early June; late June and, of course, early July just got worse in terms of yield loss."

The older planting date research indicated a loss of about 1.5 percent per day after early June. The current study may indicate that yield loss is occurring earlier than that.

"With plenty of rain in 2009, we will probably get different results for this year," he added. "What that indicates is that we may maintain our yield potential better at later planting dates. But again, that's just one year's data, and we will see how yields are affected this year."

2009 weather conditions wouldn't have permitted many to start in April because it was so wet. A survey was taken in Indiana a few years back of their soybean producers and over 60 percent of them indicated they were planting one to three weeks earlier than they did 10 years ago. That indicates that farmers can get a lot of work done with present technology and large equipment. If corn gets planted on time and farmers are waiting to plant soybeans maybe this research will indicate you can plant soybeans in mid- to late-April if the opportunity exists," Herbek said.

Previous research indicated that early June was the last optimum planting date for soybeans, but our current research may indicate this is not the case anymore. Irregardless, June plantings have a high probability for yield loss.

"We double crop a lot in Kentucky, so on our double crop acreage we are not able to plant

soybeans in early June, if that data still holds," he said. "Most of our double crop acres are planted in mid- to late-June, which normally results in a 20-25 percent yield loss. However, if we use earlier wheat varieties, high moisture harvest and no-till, which almost all of our producers do, we can gain back some of that yield loss. For every day we can push that planting date up in June because of using better management practices for double crop soybeans, we can gain back some of that yield loss. We might only lose 10 to 15 percent instead of 20 to 25 percent by using some of these management practices."

This trial will continue for several years so researchers can get a good foothold of what hap-



pens with planting dates. With a drought in 2008 the results indicated that the earlier plantings are going to benefit the most when it becomes dry in late summer.

With the ample moisture last year, everything looks good and there was a lot of growth on the crop. The earlier planting dates show a lot of promise and so do some of the later May into early June planting dates.

Herbek has a few recommendations for farmers.

"If we're going to plant at these earlier dates we're going to have cool soil temperatures," he cautioned. "If we start out in April we're talking about soil temperatures of probably 50-some degrees. Surprisingly, soybeans will germinate at 50 degrees but they're slow and they're not as tolerant as corn and we find it takes at least 10 days to around two weeks or more for seedlings to emerge. So that puts a very stressful situation on those soybeans and, as a result, you're not going to get as good a stand and it's going to take longer for them to come up. So if we're going to go that early we need to use high quality seed."

He said the emergence rate was only 70 percent of what was seeded so he doesn't recommend cutting seeding rates on the early planting dates.

"Our recent seeding rate research showed we could lower the seeding rate for a full season soybean crop," he said. "Most of us plant too much seed and we could reduce it and still maintain yield potential, but in the early planting situations that is not something a person should do. With some of the early planting dates you may only get a 50 percent stand, so if you start out at 120,000 seeds per acre you're only going to end up with 60,000 plants per acre, and that may hurt your yield because of the reduced stand. So use high quality seed and keep your seeding rates optimum; don't lower them in these situations until soil temperatures warm up. We like to see 65 degrees, then soybeans will emerge in six to seven days. But with early planting dates it's going to take at least 10, maybe more like 15 to 16 days to come up.

"The other thing with these earlier planting dates is that both years now we have seen bean leaf beetle infestations occur," he warned. "That's because there's very few soybeans out at that time and bean leaf beetles overwinter and congregate on these early planted fields. You have to be prepared to either spray for them or use an insecticide treatment on these early plantings."

He recommends high quality seeds with at least 90 percent germination with a high vigor rating for surviving stress conditions. Check on these characteristics when buying seed for early planting.

"Early plantings are not ideal conditions so you want to plant high quality seed that would come through those conditions better," Herbek said. "Seed treatments would also be beneficial."

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