

HIGH OLEIC SOYBEAN WEED CONTROL STRATEGY

START EARLY, MIX UP MODES OF ACTION



Photo courtesy of United Soybean Board.

Early limitations to available seed varieties left some farmers concerned about high oleic (HO) Soybean production. Even with premiums that today potentially deliver five-figure revenue improvements to farms' bottom lines, there are still objections to producing this high value crop that are now unwarranted.

Genetic improvements and an industry focus on a multi-faceted weed control strategy has alleviated many of the concerns farmers may have for HO Soybean production. Farmers had become accustomed to trait stacks with weed control like glyphosate tolerance, so when those traits weren't available in early high oleic soybean varieties, the weed control hurdle prevented skeptical farmers from integrating them into their production system. It was simply easier to raise conventional soybeans using crop management practices to which they were well-accustomed.

Today's options

That was 2014. Seven years later, high oleic soybeans have caught up. Yield potential is on par with conventional beans and broadening seed variety choices and weed control options mean Plenish high oleic soybeans from Corteva now offer the same bushel potential, only with higher per-acre revenue potential with premiums like those ranging from \$0.90 to \$1.25 per bushel in the Delmarva peninsula region.

With eight varieties and multiple weed control options available now, the high oleic soybean sector is similar to the advancement of comparable herbicide traits in corn in the 1990s, according to Christopher Scuse, Smyrna, Delaware-based Territory Sales Manager Pioneer Seed at Corteva Agriscience.

"We've come a long way in the seven years we've been selling high oleic soybeans. Now, in our area, we have varieties with maturity ranging from

2.5 to 4.8, whereas we started out with one variety with a 3.4 maturity that wasn't ideal for our geography," Scuse said. "They are A-series, our newest genetics. There's a misconception that XtendFlex® or Enlist E3™ are the newest genetics, but those herbicide traits have nothing to do with the genetics. We have released new Plenish varieties every year since 2014, so growers have the right number of options. Our highest-selling ones are in the 3.7 to 4.8 range and we just released a new 3.6-maturity variety this year that's going to be a good one."

Overcoming challenges

Weed control is in fact the area in which high oleic soybeans have improved the most in the last seven years. Achieving your yield goals, just like with conventional soybeans, requires attention to your specific weed pressures and sticking to the right herbicide program. For Scuse's customers in Delaware,



"RESISTANT WEEDS ARE GETTING WORSE AND CHANGING UP MODES OF ACTION IS KEY TO MAKING SURE WE KEEP THEM AWAY"

Maryland and Virginia, Palmer amaranth and marestail are two common weeds that have increasingly shown glyphosate resistance, nullifying the popular herbicide's efficacy. So, when addressing weed control options with his customers, Scuse typically starts with one question: Do you have glyphosate-resistant weeds? That typically steers the conversation to a common foundation to starting out the crop and controlling weeds season-long.

"If you don't have resistant weeds, there's no real point in spreading a dicamba product over the top. You need to make sure you're applying a pre-emergence product before planting on those beans coming up. No matter what herbicide-resistant weeds you have, having a pre-emergence herbicide is key to starting that crop out strong and making sure those weeds don't even exist in the first place," Scuse said. "Start that field out as clean as you can and keep it that way for as long as you can." **See more weed control options.**

Scuse estimates around one third of the growers in his area apply an effective pre-emergence herbicide, and many of those use lower-cost

options that typically lack residual efficacy. He recommends not only applying a pre-emergence product, but also rotating products to mix up the modes of action and prevent the future advancement of weed herbicide resistance.

"Resistant weeds are getting worse and changing up modes of action is key to making sure we keep them away. If we use the same herbicide over and over, Mother Nature will adapt," Scuse said. "I think many growers are starting to realize that they need to spend money upfront or change their modes of action regularly. Palmer can grow up to three inches a day, so even with a dicamba or Enlist product, you get a six-inch-tall weed out there, it's all of a sudden off-label. And that can happen in two days. It's tough to stay on top of those weeds without a good pre-emergence program."

Know your traits, herbicide options

While a weed-free Plenish high oleic soybean crop depends on a pre-emergence program just as much as conventional beans, there are occasional differences the grower must be attentive to when it comes to application windows at key times.

All Plenish varieties are glyphosate resistant.

"We can use the same chemistries with Plenish soybeans as any other bean out there. But if you are using a dicamba or Enlist product, you do have to wait two weeks before planting to use it for burndown," Scuse said.

"We have a lot of different pre-emergence chemistries that you can use with high oleic beans just like any other soybean out there. And most farmers are already accustomed to that two-week timeframe if they've applied Enlist or any other 2-4D formulation."

When selecting your herbicide program for Plenish soybeans, Scuse recommends rotating three modes of action and starting the crop clean with a pre-emergence herbicide with strong residual activity. And while it's tempting to seek out the latest herbicide tolerance traits, consider what your specific field conditions call for in balancing those traits with the herbicides you apply.

"There are a lot of growers out there who want the newest Enlist or Xtend-Flex soybeans and don't even need them, but they're the new, shiny thing out there," Scuse said. "Growers need to ask themselves if they need to pay for that herbicide trait. With Plenish soybeans, not only do you get the premium price at the end of the season, but they're also less expensive than XtendFlex beans."

"Just make sure you are using a pre-emergence residual herbicide program, no matter what trait the beans have in them," Scuse added.

"Make sure you have that residual activity and use multiple modes of action to make sure every weed is covered."

PLAN YOUR WORK, WORK YOUR PLAN

"After harvest, a farmer should know what weed spectrums were most troublesome during the growing season and they can begin to piece together the puzzle on what worked, what didn't and how should I prepare for next year," says Dwight Lingenfelter, Extension Weed Scientist, Penn State University. "It's also a great time to assess what weed pressures need attention on those fields you rotate into beans the following spring."

If timing and weather conditions allow for it, Lingenfelter points out that planting a thick cover crop like cereal rye can suppress annual weeds and offer other benefits to the seed bed too. And in some geographies, planting cereals in a double-crop approach can make a lot of sense as well.



Photo courtesy of United Soybean Board.

Lingenfelter believes the goal is starting out with a clean seed bed. This means knowing your weed pressure and creating a balanced approach to controlling weeds into the critical 5- to 7-week window after planting.

WHETHER YOU CHOOSE TO PLANT HIGH OLEIC OR CONVENTIONAL SOYBEAN VARIETIES, THE FIRST LINE OF DEFENSE FOR YOUR CROP IS DEVELOPING A COMPREHENSIVE WEED CONTROL STRATEGY. AND A GREAT TIME TO START BUILDING THAT PLAN BEGINS IN THE CAB OF THE COMBINE.



Photo courtesy of United Soybean Board.

"A burndown program is the key, especially when dealing with resistant species like marestail, waterhemp and Palmer amaranth," Lingenfelter notes. "Glyphosate and ALS inhibitor-resistance is on the rise, so mixing effective modes of action against these problem-weed species can enhance a burndown treatment's performance." (Editor's note: A good resource to reference for resistant weed management is the Take Action website – <https://iwilltakeaction.com>.

Lingenfelter adds that this process is not without some challenges, and one big mistake often made is putting too much pressure on a one-pass treatment. Several applications may be appropriate to tackle tougher weed problems such as marestail, since the post-emerge options aren't as effective or don't have the residual strength to handle escapes or late-germinating flushes.

"Indeed, having many different herbicides in the tank can provide a clean seed bed, but the useful residual activity of those products is impacted significantly, if all the burndown and PRE herbicides are applied in one pass, say, a couple weeks ahead of planting," Lingenfelter notes. "That is two weeks of 'wasted' herbicide residual activity. Once the crop is planted, it needs to have as much residual herbicide available, for as long as possible, to provide the weed-free environment

required to increase the crop's growth and development for optimal yield."

Most residual herbicides provide effective control for about 4 to 5 weeks; if applied too early, the crop may experience two weeks or so of weed control before the herbicide dissipates and weeds begin to emerge and compete with the crop. At that point, additional weed control tactics may be required.

Lingenfelter notes that if Palmer amaranth, waterhemp and/or marestail are present, length of residual control once the crop is planted is even more critical, as residual products tend to provide more weed control value when applied at planting.

"To summarize, there's really four critical elements that make up a quality weed control strategy," Lingenfelter says. "It starts with an effective burndown program, handling resistant weed species appropriately with foliar and residual herbicides (as well as cover crops in some cases), paying attention to weed coverage when spraying using adequate spray volumes (i.e., gallons/acre) and including quality adjuvants to optimize foliar herbicide performance; and managing weed pressures when rotating out of corn or cereals into soybeans.

"With what a farmer invests in his seed and fertility costs — and with premium opportunities that come with high oleic varieties — keeping these elements in mind will help tip the scales in your favor for a successful crop."