

THREE RIVERS AG NEWSLETTER-SPRING 2022

Volume 1 / Issue 1

**BE SURE TO CHECK US
OUT AT OUR WEBSITE!**

<https://www.threerivers-ag.com/>

Aaron Phelps / 785.493.2418
aaron.phelps@plantpioneer.com



WHAT TRAITS YIELD

What soybean traits have the best yield? I continue to hear from growers and competitors that this soybean trait or that soybean trait has yield drag. My question was, where is the yield data to go with said knowledge? You either have or don't have Xtend Flex or Enlist and my guess is the bulk of the "yield drag" claims come from one camp or the other. I decided to do a bit of research myself trying to find yield trails where Xtend Flex soybeans were paired against Xtend and Enlist soybeans. With the amount of information on the internet, it's easy to do our own research. I did some searching and came up with the exact results I expected.

First, we'll look at the Maryland State Variety trials of 2021 ([Field Trials](#)). There were four locations for the mid group 3 trials and 22 varieties in those trials. Of those 22 varieties there were 3 Xtend, 2 Xtend Flex, 12 Enlist, 3 GT (Balance GT) and 2 Liberty Link. Of those 22 varieties, 9 exceeded the average yield. 1 Xtend, 2 Xtend Flex, 4 Enlist and 2 GT. 33.3% of the Xtend, 66.6% Xtend Flex, 33% Enlist and 66.6% GT soybeans entered exceeded mean yield. Mean yield across the trials was 52.3 bushels.

Next was the mid group 4. 21 varieties were entered across four test locations. Average yield was 62.5 bushel. Of the 21 varieties there were 5 Xtend Flex, 3 GT and 13 Enlist. 3 Xtend Flex and 7 Enlist exceeded mean yield. 60% of the varieties with Xtend Flex and 54% of the Enlist varieties exceeded mean yield.

The last that I was interested in was the late group 4. Larger sample with 36 varieties of which 11 Xtend Flex, 14 Enlist, 2 GT, 5 Conventional, 1 RR2 and 3 Extend. There were 4 locations, and the average yield was 62.5 bushel. 21 varieties exceeded average yield which were the following: 6 Xtend Flex, 9 Enlist, 1 GT, 1 Xtend and 4 Conventional. Looking at percent of varieties entered that were above mean yield was 54.5% Xtend Flex, 64.2% Enlist, 50% GT, 33.3% Xtend and 80% Conventional.

Next, I pulled up 2021 Kentucky Soybean Variety Performance Test ([Performance Test](#)). I'm going to summarize this one even more. These tests were conducted in eight different locations and there were way too

many varieties for me to count. For the soybeans from 3.0-3.9 entered in the tests, 83% of the Enlist, 26% of the Xtend Flex and 100% Conventional exceeded the average yield. Average yield for those trial sites was 72 bushels with 40 varieties entered. For the 4.0-4.5 soybeans, 61% Enlist, 38% Xtend Flex, 83% Xtend and 100% Conventional soybeans exceeded

mean yield. The mean yield for those sites was 76.3 bushel and there were 44 varieties entered. For the 4.6-4.9 maturity range, 50% Enlists, 65% Xtend Flex and 100% Xtend exceeded mean yield. Those plots had 53 varieties entered with an average yield of 78.9 bushel.

There are yield trials from Missouri, Arkansas, Illinois and individual seed companies to help decide for yourself. Looking at just these state trials, over half of the varieties entered of Xtend, Xtend Flex and Enlist exceeded the mean yield for those test plots.

What is my conclusion? Plant breeders across all companies are incredible at bringing new technologies to farmers with increased levels of yield. You can feel confident planting the technology that best fits your farm without concern of “yield drag”.

LIBERTY BEST MANAGEMENT PRACTICES

Both Enlist and Xtend Flex soybeans now allow for over-the-top application of Liberty (glufosinate) herbicide. To get effective control with Liberty requires more management and certain environmental conditions that were not needed for glyphosate. The cost of Liberty has also increased substantially, and the availability is also limited. Last June, I quoted Liberty at \$70/gal. I quoted some here in March for \$109/gal. A 36 oz application rate of just chemical would run a grower \$30.65. If you're going to run Liberty at those prices, you'll definitely want to use the best management practices.

With the Enlist technology, Enlist One (2,4-D choline), ammonium sulfate, Liberty and Roundup (glyphosate) can all be tank mixed and applied together. This would be expensive and only used in the event of a complete trainwreck. With Xtend Flex Technology Liberty, AMS and glyphosate can be applied but in a separate application from the Engenia/Xtendimax (dicamba) application. Neither Engenia nor Xtendimax may be applied after June 30th. Liberty can't be applied with Engenia or Xtendimax. Liberty can be applied with Enlist One. Enlist One may be applied after June 30th.

Some keys to getting effective control from Liberty.

- 1) Coverage. Think paraquat here. High gallonage, minimum 15 GPA and preferable 20 GPA with medium sized droplets.
- 2) Weed size. Just like every single herbicide now pigweed needs to be less than 4" tall!!!!
- 3) Ammonium Sulfate. 2-3# per acre.
- 4) Time of day – SUNNY!!! Liberty needs sunshine to work well. Don't run early in the morning or late in the day.
- 5) Temperature and Humidity. 150 Rule!!! Temperature plus humidity equal to or above 150.

I was asked why I'm not a fan of Liberty. Consistency. I have not gotten consistent control out of Liberty. I think is mainly because of the heat and humidity factors. We need plenty of heat and humidity to get Liberty to work. We usually have a very narrow spray window. When Xtend beans first came out, we decided to plant Liberty beans on the fields close to Salina. It was at the beginning of the harvest, and we were shorthanded, so I hopped in one of the sprayers to go run the Liberty on those fields. Weeds were small, I'd say the largest pigweed was 2-3" tall with the bulk being a quarter to half dollar size. I ran 20 GPA, 36 oz Liberty, Twin Turbo T nozzles with a medium droplet and 3# ammonium sulfate per acre. The first day we had high humidity (over 150), sunshine and temperatures in the mid-90s. By midafternoon, a high pressure had moved in with strong winds, so I had to shut down until the next day. That high pressure brought our typical harvest weather, low humidity and 100 plus degrees. I am guessing the humidity was 130-140. Next day I completed the Liberty work. You could see to the line the two application dates. Excellent control out of day one work and marginal control out of day two work. Liberty is finicky and we do not always have the heat and humidity they do in a just a couple of counties to the east. Average heat plus humidity for Salina in July is 152.9, for Topeka 161.8 and for Hays 147.4. We are right on that line where we have consistent weather factors for Liberty to work. I feel Liberty is currently overpriced compared to what we could run in other chemistries and achieve comparable results. I'll keep Liberty in my tool kit but I'm not going to bet all my weed control on it.

HERBICIDE PRICING

Those who don't apply chemical themselves may not realize how much the price of herbicides has gone up. I will list out some sample herbicide programs with pricing between what I was quoted last year and what I've been quoted this year. This does not include any ammonium sulfate, crop oil, drift reduction agents or burndowns. Get ready for a little sticker shock.

| Herbicide | 2021 | 2022 |
|-----------------------------------|----------------------|----------------|
| 6# Glyphosate | \$16.75 / gal | \$39.99 / gal |
| Liberty | \$70 / gal | \$105 / gal |
| Paraquat | \$14 / gal | \$33 / gal |
| Metribuzin | \$12 # | \$12.50 # |
| Atrazine 4L | \$10 / gal | \$22.50 / gal |
| S-Metolachlor | \$35 / gal | \$62 / gal |
| Outlook | \$86 / gal | \$105 / gal |
| Balance Flex | \$352 / gal | \$444 / gal |
| Status | \$3.10 / oz | \$4.43 / oz |
| Enlist One | \$44.50 / gal | \$45.50 / gal |
| Engenia | \$78 / gal | \$96 / gal |
| Corn Program | 2021 | 2022 |
| 5 oz Balance Flex | \$13.75 | \$17.34 |
| Atrazine 4L 1# | \$2.50 | \$5.63 |
| 32 oz Glyphosate | \$4.19 | \$10.00 |
| 5 oz Status | \$15.50 | \$22.15 |
| 1/2# Atrazine 4L | \$1.25 | \$2.82 |
| COST | \$37.19 | \$57.94 |
| | Cost Increase | \$20.75 |
| Xtend Soybean Program | 2021 | 2022 |
| 1.67 PT S – Metolachlor | \$7.30 | \$12.94 |
| 5 oz Metribuzin | \$3.75 | \$3.91 |
| 12.8 oz Engenia | \$7.80 | \$9.60 |
| 32 oz Glyphosate | \$4.19 | \$10.00 |
| 10 oz Outlook | \$6.72 | \$8.20 |
| COST | \$29.76 | \$44.65 |
| | Cost Increase | \$14.89 |
| Enlist Soybean Program | 2021 | 2022 |
| 18 oz Outlook | \$12.09 | \$14.77 |
| 5 oz Metribuzin | \$3.75 | \$3.91 |
| 2 pints Enlist One | \$11.13 | \$11.38 |
| 32 oz Glyphosate | \$4.09 | \$10.00 |
| 1.3 PT S-Metolachlor | \$5.68 | \$10.08 |
| COST | \$36.74 | \$50.14 |
| | Cost Increase | \$13.40 |
| Enlist Double Crop Program | 2021 | 2022 |
| 10 oz Outlook | \$6.72 | \$8.20 |
| 5 oz Metribuzin | \$3.75 | \$3.91 |
| 2 pints Enlist One | \$11.13 | \$11.38 |
| 2 pints Enlist One | \$11.13 | \$11.38 |
| 32 oz Glyphosate | \$4.09 | \$10.00 |
| 32 oz Glyphosate | \$4.09 | \$10.00 |
| COST | \$37.91 | \$54.87 |
| | Cost Increase | \$16.96 |
| Xtend Flex Double Crop | 2021 | 2022 |
| 36 oz Liberty | \$19.69 | \$29.53 |
| 10 oz Outlook | \$6.72 | \$8.20 |
| 5 oz Sencor | \$3.75 | \$3.91 |
| 36 oz Liberty | \$19.69 | \$29.53 |
| COST | \$49.85 | \$71.17 |
| | Cost Increase | \$21.32 |

These are by no means recommendations; they are just for comparison. You start adding ammonium sulfate, fertilizer, crop oil, drift reduction agents and/or a burndown in and these costs increase substantially. Be informed, let your banker know and let your landlord know that the cost of doing business this year is going to be up dramatically.

SECOND YEAR SOYBEAN PRODUCTION

Due to high fertilizer prices, I expect to see an increase in continuous soybean acreage. Here are some management considerations that can help maximize productivity if growing second year soybeans.

Yield potential will likely be reduced. Research results have varied but a yield reduction of 3-5% compared to soybeans following corn is not an unreasonable expectation.

Avoid poorly drained soils due to higher risk of Pythium, Phytophthora, SDS and Brown Stem Rot.

Avoid planting the same variety in the same field two years in a row. Select varieties with a high level of disease rating. Test for soybeans cyst nematode.

Use a fungicide seed treatment to protect against diseases such as Pythium and Phytophthora which can increase under continuous soybean production. Soybeans treated with IleVO fungicide provides control of sudden death syndrome and certain soil borne nematodes, such as SCN and root knot nematodes.

Growers typically rely on carryover fertilizer. Continuous soybean may require additional phosphorus or potassium.

There are many diseases that can carryover in the soybean residue. Scout for leaf and stem diseases and apply a fungicide if warranted.

Any weed escapes from the previous year will likely result in increased weed seed bank. Applying a pre-emerge herbicide and overlaying sequential residuals with multiple modes of action will help manage weed pressure.