

Soybean Row Spacing: Wide Or Narrow?

DR. EMERSON NAFZIGER

URBANA, ILL.

Just over 50 percent of Illinois soybean fields are in 15-inch rows, the most common spacing for soybeans in Illinois. Over the past decade, drilled soybeans – those with rows less than 10 inches apart – have lost ground to 30-inch rows, which now occupy nearly a third of soybean acres. Average row spacing has thus actually increased over the past decade, after narrowing for several decades before that.

Most corn planters are set to plant 30-inch rows, and 15-inch soybeans are generally planted using split-row units placed between the 30-inch rows. The increasing width of planters – many are now twenty-four 30-inch rows, or 60 feet wide – means that splitting rows with additional units makes planters very heavy. So if a producer has only one 60-foot planter for both crops, it's likely that both crops will be planted in 30-inch rows.

Another reason given for moving from drilled or 15-inch soybean rows to 30-inch rows is to decrease the severity of white mold. This disease spreads best when the ground under the crop and the leaves stay wet, and since air moves better around plants in wider rows, soybeans in wide rows may be less affected by white mold. It is also easier to drive through wide rows to spray or cultivate.

In a study over the past two years funded by the Illinois Soybean Association, we compared 15-inch and 30-inch soybean rows, at different planting dates and seeding rates, over six sites in Illinois. Excluding one southern Illinois site where stands were not adequate, we found that 15-inch rows on average yielded 1.5 bushels more than 30-inch rows. This difference varied among sites, from no advantage to nearly 4 bushels per acre.

Because late-planted soybeans tend to produce smaller plants, we had expected to find narrower rows more likely than wide rows to yield more when planting was late. However, this was not the case; response to row width was as likely with early planting as with late. Similarly, we saw little interaction between row width and seeding rate.

Based on these results, we think that choosing to plant in 30-inch rows instead of narrower rows will likely bring a small yield penalty. This doesn't mean that widening rows in order to use a larger planter is unsound, but those deciding to do this should pencil in about 1.5 bushels less yield. That amount is not very noticeable in the field, and some will conclude after making the switch that they suffered no yield loss. We know from our research that in fact such loss will not always occur. But we have also found that it can, and there's no reason to expect that it won't, at least on average.

There may be ways to decrease any yield loss from going to wider rows, but these are not well proven in recent research and may not prove to be consistent. We do not believe that changing the seeding rate is likely to help. If incidence of disease that can be controlled by fungicide is actually decreased in wider rows, then we would expect fungicide application to produce less response in wide than in narrow rows.

Choosing taller, perhaps slightly later varieties might help the crop capture light better in wider rows, but productivity of a soybean variety is by far a better basis for choosing that variety than is any trait it possesses that might provide a theoretical benefit based on growth habit. Δ

DR. EMERSON NAFZIGER: Professor/Research Education Center Coordinator, University of Illinois