

## Universities Focus National Effort on Soybean Best Management Practices

You've all heard the saying, "April showers bring May flowers". Well, it looks like April showers will additionally bring some anxiety to local farmers. The forecast may not look good to accomplish much field work, but it is not as bad as the spring blizzard in North Dakota and Montana. They have been in a severe drought for several months and now the only moisture they get is measured in feet of snow and blizzard conditions. One of my biggest concerns for those folks is the livestock. There are several beef producers throughout that region and many are in the heart of calving season. Keep those farm families in your thoughts as we locally enjoy our Easter weekend.

Since field work is currently limited, one might consider pre-planting soybean decisions. These decisions can be extremely important to set-up the crop for success. Laura Lindsey, Ohio State University soybean specialists along with soybean Extension Specialists from across the U.S. have been working together on the *Science for Success* initiative (funded by United Soybean Board) focused on leveraging local expertise to provide national soybean best management practices. Recently, this group of experts have focused on soybean planting date, row spacing, and seeding rate.

Lindsey shares the following information from this national effort as it relates to Ohio soybean production.

***Soybean Planting Date.*** Soybean planting date has a large effect on yield. In Ohio, yield reduction because of late planting ranges from 0.25 to 1.0 bu./acre/day. In our small plot research in Clark County, Ohio, soybean yield reduction in 2013 and 2014 was approximately 0.6 bu./acre/day for each day planted after early to mid-May (Figure 1). Although early planting is important to maximize soybean yield, deciding on when to plant should be based on field suitability and soil temperatures at the time of, and following, planting as well as frost forecast. Soybean can germinate and emerge when soil temperatures are at or just below 50°F. At soil temperatures between 50-60°F, soybean plants typically take about 15 to 20 days to emerge following planting. Planting into a wet seedbed or following too much tillage can result in compaction and soil crusting which could reduce stand establishment. At the same time, planting into extremely dry soil can also be detrimental to stand establishment due to insufficient soil moisture for germination and/or emergence.

For Ohio, in general, we recommend soybean be planted any time after April 15 in the southern portion of the state and any time after the last few days of April in the northern portion of the state *IF* soil conditions are satisfactory.

***Row Spacing.*** In Ohio, soybean is generally grown in narrow rows (7.5 to 15-inch row width). Soybean plants grown in narrow rows generally produce more grain than soybean grown in wide rows (30-inch row width) because they capture more sunlight energy, which drives photosynthesis. Across the U.S., soybean grown in  $\leq 15$ -inch row width has a yield advantage of 1 to 4 bu./acre compared to  $>15$ -inch row width. However, these yield advantages are typically greater with later planting dates, earlier maturing varieties, and high temperatures, all of which reduce the time from VE (emergence) to R3 (initial pod set).

**Seeding Rate.** Soybean plants are incredibly flexible at adjusting to a wide range of plant populations. Soybean plants in low populations will produce more branches, more pods, and more seeds per plant. Soybean at higher populations will grow taller, produce fewer branches, pods, and seeds per plant. Because of this flexibility, soybean can often produce similar seed numbers per acre and similar yields over a wide range of plant populations. In Ohio, for a crop planted in May, a final plant population of 100,000 to 120,000 plants/acre is generally adequate for maximum yield. Final population is a function of seeding rate, quality of the planting operation, and seed germination percentage and depends on such things as soil moisture conditions, seed-soil contact, disease pressure, fungicide seed treatments, etc. Ensuring maximum yield requires farmers to plant at rates higher than the minimum required plant population. As a general rule, seed about 25% higher than the target plant population. For example, for a target plant population of 100,000 to 120,000 plants/acre, you may want to seed 125,000 to 150,000 seeds/acre.

For more information on “*The Best Soybean Planting Date*”, please see this Science for Success article: [https://soybeanresearchinfo.com/wp-content/uploads/2022/01/2700-002-20-Planting-Date\\_Science-for-Success22\\_TRV2\\_12-22-21.pdf](https://soybeanresearchinfo.com/wp-content/uploads/2022/01/2700-002-20-Planting-Date_Science-for-Success22_TRV2_12-22-21.pdf)

For more information on “*How To Pick The Right Soybean Row Spacing*”, please see this Science for Success article: [https://soybeanresearchinfo.com/wp-content/uploads/2022/01/2700-002-20-Row-Spacing\\_Science-for-Success-copy\\_updated12-22-21.pdf](https://soybeanresearchinfo.com/wp-content/uploads/2022/01/2700-002-20-Row-Spacing_Science-for-Success-copy_updated12-22-21.pdf)

For more information on “*Soybean Plant Population Density*”, please see: [https://soybeanresearchinfo.com/wp-content/uploads/2022/01/2700-002-20-Seeding-Rate\\_Science-for-Success\\_updated12-22-21.pdf](https://soybeanresearchinfo.com/wp-content/uploads/2022/01/2700-002-20-Seeding-Rate_Science-for-Success_updated12-22-21.pdf)



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