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Tips for Successful Double-Crop Soybeans

With small-grain harvest well underway, producers may turn their thoughts back to planting: double-crop soybeans offer the opportunity for additional cash-flow and enterprise diversification in an intensive crop rotation. To maximize the agronomic and economic efficacy of the crop, we thought it appropriate to provide some thoughts on the matter:

Soybean variety selection is key in maximizing economic returns; ensure the maturity group selected provides a long enough window for maturity after planting, keeping in mind the first frost. Note that our average first frost date in Frederick typically ranges from October 21st to November 1st, and soybeans mature in 90 days plus roughly another 7 days for adequate drydown.

Whether or not the farm-operator decides to bale the straw, the drill or seeder needs to "chase the combine out of the field". Try to minimize the planting window after harvest as soybeans mature relative to the duration of nighttime hours, with the minimum occurring at the summer solstice, June 21st. In the Mid-Atlantic, we observe a ½ a bushel/ acre decrease in soybean yield for every day unplanted after June 21st. Research suggests that soybeans planted on July 10th have 60% yield potential of their full-season counterparts. Additionally, achieving a standing plant population of 180,000 plants/acre with narrow row spacing (7.5-15") provides the greatest opportunity for canopy development before the soybeans reach R1 (beginning bloom, first reproductive stage), shading out some weeds. Finally, where possible, fields planted at a 15° angle relative to the wheat stubble do not experience the "hair-pinning" effect of the straw as the seed openers slice through the residue, thus improving seed to soil contact for effective germination.

On the fertility side, managing for a high-yielding wheat crop provides enough residual fertility for an adequate soybean crop when planting soybeans without baling the straw. Wheat straw/chaff on average contains roughly 12 pounds of nitrogen, 3 pounds of P_2O_5 and 24 pounds of K_2O/ton of straw. Though the nitrogen and phosphorus require microbial decomposition for their release, the potassium is plant available. With rain, the potassium and other nutrient cations (Calcium, Magnesium, etc.) are leached from the straw and into the soil–available for use in the next crop. However, the residue provides a greater benefit in: soil moisture retention, soil temperature moderation, and the potential for increasing soil organic matter. With these factors in mind, yield trials have reported 2 to 8 bushels/acre increase with soybeans planted through wheat straw relative to planting after straw harvest. If one does bale the straw, plan on replacing the nutrients removed by the wheat crop to ensure adequate fertility for the soybean crop.

"Start clean, stay clean" is a rather apt adage of weed control in double-crop soybeans. An effective burndown application pre-plant provides the greatest yield benefit, though post-emergence herbicide applications reduce the impact of yield-robbing weeds. Herbicide selection should match crop traits, weed pressure, and local environmental conditions including: wind-

speed, temperature, humidity, and distance to sensitive crops or alternative enterprises. Regarding pest and disease management, crop scouting informs an operator's management. Timely application (stage R3-4) of foliar fungicides containing multiple modes of action, paired with an insecticide–when a pest pressure has reached economic threshold–generally provides the most economically efficient control.

There are certainly many more management options available, though the general thought-processes outlined in this article, we hope, will provide a farm operator with enough for a start on a healthy, profitable soybean crop following small grain harvest.

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