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Managing early- and late-planted soybean

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In a follow-up study, farmers are comparing their usual management to that associated with higher yields through the multi-state survey analysis project described in this article. The above field in Ohio was planted with test strips of soybean at different planting dates. Some strips will receive foliar fungicide, and others will not. Photo by Laura Lindsay, Ohio State University.

Soybean yield is generally greater in fields that are planted earlier, and optimum management varies by growing environment and yield potential. Although producers are aware that early planting is ideal, it is often delayed due to wet weather conditions. Producers cannot control the weather, but they can manage for late-planting scenarios.

In an article recently published in *Agronomy Journal*, researchers used survey data from producers in 10 north-central U.S. states to identify management decisions that increase yield in either early- or late-planted scenarios. In-season management decisions were related to yield using conditional inference trees within each environment and planting time frame. Across multiple environments, herbicide application timing and tillage intensity were associated with higher yield for late-planted fields. Artificial drainage, insecticide seed treatment, and lower seeding rates were associated with higher yield in some early-planted situations. No single management decision consistently increased yield across the entire study region, so decisions should be specific to both region and planting date.

These results confirm the importance of and continued need for locally driven data from which research-based best management practices can be developed. They also suggest that the use of producer survey data can complement and expand the interpretative reach of in-field replicated research.

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Matcham, E.G., Mourtzinis, S., Conley, S.P., Rattalino Edreira, J.I., Grassini, P., Roth, A.C., … & Lindsey, L.E. (2020). Management strategies for early- and late-planted soybean in the north-central United States. *Agronomy Journal*, *112*, 2928–2943.

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