No consistent advantage for planting soybean early

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Planting soybean on the optimum date produces maximum yield and profit without increasing production costs. Unfortunately, the optimum planting date is hard to indentify, because it varies from year to year, depending on the weather and how much it rains and when it rains.

"Planting date has been a favorite topic of researchers ever since soybean was introduced into the United States, so there is a large database of experiments in the literature. A combined analysis of this database will provide a clearer picture of the average response than any single experiment," explains Dr. Dennis Egli, University of Kentucky, Lexington.

Dr. Egli and colleagues at the University of Kentucky analyzed the combined results of planting date experiments and published their findings in the March-April 2009 issue of the Agronomy Journal.

The scientists analyzed combined results of planting date experiments from the Midwest (NE, ND, IA, IL, IN, and OH), the Upper South (AR, KY, MO, and TN), and the Deep South (AL, FL, GA, LA, MS, and SC). Planting dates varied from mid-April (early April in the Deep South) to July. The experiments included several varieties and several row spacings, but none were irrigated.

In spite of the differences in environmental conditions and varieties from the Midwest to the Deep South, the response of yield to planting date was remarkably consistent across the three regions. Average yield

did not change as planting was delayed from mid-April until late May or early June. Thus, there was no evidence that April plantings produced higher yields in any of the three regions. Early April plantings were included in the Deep South and average yields decreased for these ultra-early plantings.

A previous study published in the *Agronomy Journal* [Vol. 101:131-139 (2009)] concluded that April and early May plantings in Indiana consistently produced the highest yield. But our results, based on the combined analysis of 28 experiments, show no significant advantage for such early plantings from the Midwest to the Deep South.

While the results of this analysis show no consistent yield advantage for planting early, there was also no consistent yield loss (except for ultra-early plantings in the Deep South) associated with early plantings.

"If the soil is ready for planting in April, producers should feel free to plant, but they shouldn't expect higher yield," advises Egli.

Planting into cold, wet soils, however, can reduce seedling emergence and stand, which may require replanting to avoid yield loss. Unacceptable stands may be more common if seeding rates are reduced to the minimum to reduce seed costs.

Average yield declined rapidly when planting was delayed after 30 May in the Midwest, 7 June in the Upper South, and 27 May in the Deep South at rates ranging from 0.7 (Midwest) to 1.1 (Upper South) and 1.2 (Deep South) percentage points per day. At these rates, delays of just 2 weeks will reduce yields by approximately 10 to 20%.

There may be no particular advantage for early planting, but there was a clear disadvantage for planting late, after the critical date in late May or early June. Soybean producers can maximize their yield and profits by

making sure planting is completed before the critical date.

More information: View the abstract at agron.scijournals.org/cgi/content/full/101/2/330

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