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Planting depth affects corn emergence and yield

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Levi Krepischi (foreground) and Kyle Nemergut (background) verifying planting depth. Photo by Alex Lindsey.

Optimization of production on existing land is important to meet growing food and fuel demands. One key management practice that can impact production is planting depth though field characterization of temperature and moisture conditions within the furrow at differing depths is limited.

In a recent *Agronomy Journal* article, researchers reported emergence, soil temperature, and moisture at three planting depths in two soil types during the emergence window in corn. Additional plants were tracked through the season to assess per-plant yield, which could also be connected to an actual planting depth and emergence date.

While some of the shallowest-planted seeds (25 mm) emerged most rapidly, lower soil moisture content (less than 45% plant available water content) and higher soil temperatures extended the total emergence window twofold compared with seeds planted at 51 and 76 mm. Across all soil types, plants emerging within three days of the first emerged (or 86 soil accumulated growing degree units after planting) experienced minimal yield loss. Emergence more than three days later than first emerged plants resulted in a 5% per-plant yield loss per day delay.

This work highlights the importance of adequate planting depth in corn to ensure uniform emergence and helps characterize conditions in the seed furrow to improve emergence uniformity.

Dig Deeper

Nemergut, K.T., Thomison, P.R., Carter, P.R., & Lindsey, A. (2021). Planting depth affects corn emergence, growth and development, and yield. *Agronomy Journal*.

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