Science Societies

Predicting Grain Yield Indirectly Using Anthesis–Silking Interval

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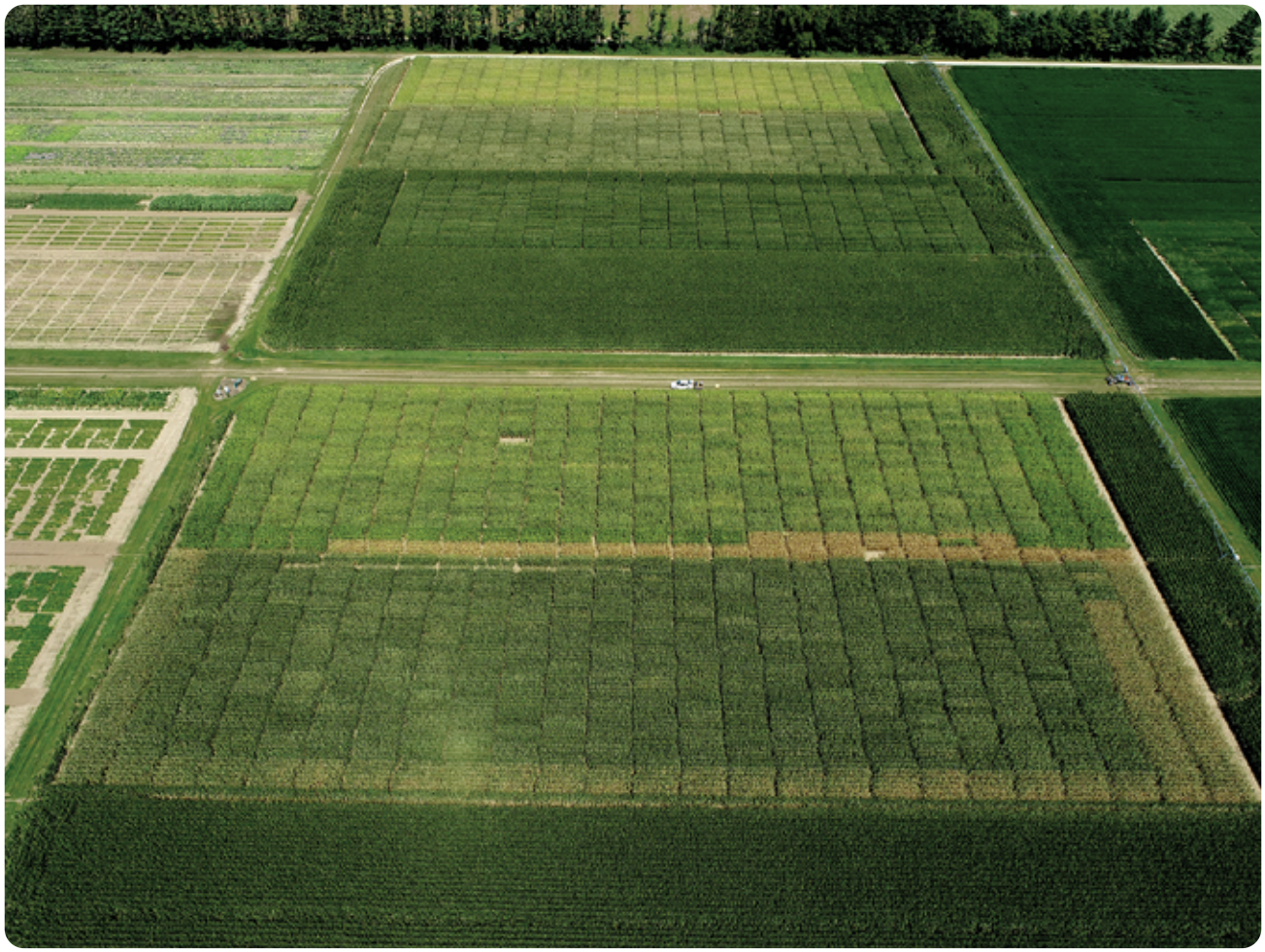

Aerial image of breeding trials for stress tolerance. Photo by Jeff Nelson/University of Wisconsin–Madison.

Water and nitrogen are critical to crop production and central players in global energy dynamics and resilience to climate change. Developing cultivars that efficiently use water will help meet global demands for food. However, breeding for cultivars under stress is challenging because reducing inputs increases the proportion of non‐heritable variation. This challenge increases when breeding for tolerance to more than one type of stress.

In a recent study in *Crop Science*, researchers evaluated breeding methods to identify hybrids tolerant to both drought and low nitrogen stress. In addition to measuring yield, the team evaluated whether they could improve breeding success by measuring the time between pollen shed and silk emergence. They found that hybrids tolerant to both drought and low nitrogen could be identified that way, supporting the notion that some stress‐tolerance traits are beneficial in the face of one or both types of stress.

As an indicator of stress, flowering time is an example of a trait that can help guide future breeding efforts. These results demonstrate that genomic prediction, a new breeding technology that leverages inexpensive genomic sequencing, could be useful for developing stress‐tolerant cultivars.

Adapted from Lima, D. C., de Leon, N., & Kaeppler, S. M. (2023). Utility of anthesis‐silking interval information to predict grain yield under water and nitrogen limited conditions. *Crop Science*, *63*, 151–163. https://doi.org/10.1002/csc2.20854