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Photothermal environment strongly affects maize kernel weight

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New research in Crop Science highlights the importance of the photothermal environment during grain filling in maize. Source: Flickr/Don Graham.

Maize grain yield is commonly assumed to be source limited during the flowering period and sink limited during the subsequent period of active grain growth; however, environmental restrictions during active grain filling may strongly affect final kernel weight.

In *Crop Science*, researchers in the Corn Belt of Argentina evaluated the effect of natural changes in the photothermal conditions during the grain-filling period on kernel weight of different maize germplasm across several growing seasons.

The team found that final kernel weight was closely affected by the photothermal environment explored during grain growth, particularly for seasons with a great photothermal imbalance between the flowering stage and the subsequent active grain growth period. However, the kernel weight sensitivity to the changes in the explored conditions strongly varied with different germplasm evaluated.

This study highlights the importance of the photothermal environment during grain filling on kernel weight determination as well as the dependency of kernel weight responses on the genetic background.

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Hisse, I.R., D´Andrea, K.E., & Otegui, M.E. (2021). Kernel weight responses to the photo-thermal environment in maize dent × flint and flint × flint hybrids. *Crop Science*. **https://doi.org/10.1002/csc2.20481**

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