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Using kernel characteristics to predict sorghum popping

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Undergraduate researcher Sophia Arista measures the popping performance of hybrids. Inset: Differences in the shapes of popped sorghum. Photos by Mitchell Kent.

Growth in the niche market of popped sorghum has increased, and hybrids with improved popping qualities are needed. While there is a clear difference in the kernel structure between popcorn and most other types of corn, most grain sorghum genotypes have kernels with similar structure. This makes it impossible to eliminate hybrids with poor popping performance based solely on kernel structure. Consequently, screening of sorghum hybrids requires popping the grain, which is timely and labor intensive.

In a new *Crop Science* article, researchers used various methods, such as near-infrared spectroscopy, to measure physical and compositional attributes of grain samples. These measurements were then used to predict the popping performance of hybrids. The researchers found they could effectively predict performance using these measurements. They also found that models using only compositional measurements had higher prediction accuracies than those using only physical measurements. This research shows that indirect selection for popping performance is possible by leveraging multi-trait models and provides a practical way to screen sorghum hybrids for popping performance.

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Kent, M. A., Crozier, D. S., & Rooney, W. L. (2022). Assessment of kernel characteristics to predict popping performance in grain sorghum. *Crop Science*. https://doi.org/10.1002/csc2.20732

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