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Dependence on corn belt dent maize increases globally

November 2, 2022

Examples of the range of phenotypic variation in maize germplasm held in the genebank of the International Maize and Wheat Improvement Center (CIMMYT). Photo provided by Dr. Suketoshi Taba, CIMMYT.

During 1970–1971, 15% of the U.S. maize (*Zea mays* L.) crop was destroyed by southern corn leaf blight. This resulted in calls to better manage genetic diversity in crops. It is imperative that plant breeders continue to leverage diverse plant genetic resources to develop improved cultivars.

However, in an article published recently in *Crop Science*, researchers found an increasing dependence on U.S.-developed Corn Belt Dent (CBD) germplasm worldwide. After surveying usage of CBD germplasm during the past 50 years, they found that breeding programs continued to rely heavily on Iowa Stiff-Stalk Synthetic (BSSS) germplasm while replacing Lancaster (Oh43 and Mo17 types) with Iodent. The four leading producer countries, which collectively produce 55% of global maize, were 84–88% reliant on CBD germplasm. Top producers United States and China, which together contribute 46% of global maize production, were 92% dependent.

While exotic germplasm has become more available for U.S. maize breeders through new programs, the team was unable to publicly validate its use on U.S. farms. Trends in global usage of CBD germplasm mirrored those in the U.S. The findings raise concerns that genetic vulnerability persists and should be considered globally.

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Smith, J.S., Trevisan, W., McCunn, A., & Huffman, W.E. (2022). Global dependence on Corn Belt Dent maize germplasm: Challenges and opportunities. *Crop Science*. **https://doi.org/10.1002/csc2.20802**

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