Science Societies

Introducing barley lines from the USA into Egypt

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Two-rowed barley line under the Egyptian conditions.

Collaborative breeding and germplasm exchange across breeding programs addresses contemporary issues like disease resistance, grain yield, and growth patterns. Introducing new germplasm increases genetic variability and lays the ground for future improvements.

In an article soon to be published in *Crop Science*, researchers evaluated barley lines from several USA breeding programs in multiple environments in Egypt to select for potentially adapted lines. Spring barley lines (248 two-rowed and 253 six-rowed lines) were tested for grain yield, leaf rust resistance, number of days to flowering, and plant height. Several lines consistently outperformed commercially grown local check cultivars, including two-row varieties from Montana State University, USDA-Aberdeen, Busch Agricultural Resources Inc., and North Dakota State University, and six-rowed varieties from Utah State University (USU).

Interestingly, USU's barley breeding germplasm is based on North African six-rowed barley. The identified high-yielding cultivars should be of great importance as potential parents or released lines to breeders in Egypt and potentially the USA given this added knowledge. These research findings illustrate the importance of collaborative breeding and germplasm exchange to find the best-performing, highest-yielding lines for a given area while increasing genetic variability and disease resistance.

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Elbasyoni, I., Naser, M., Ali, H., Smith, K., & Baenziger, P. (2020). Reverse introduction of two and six-rowed barley lines from the USA into Egypt. *Crop Science*, *60*. View the full article online at http://doi.org/10.1002/csc2.20061

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