

# University of Minnesota Releases Barley Variety 'Quest' with Improved Scab Resistance

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Quest is the first malting barley variety release from the University of Minnesota Agricultural Experiment Station with improved Fusarium head blight resistance. Formerly known as experimental line M122, Quest is a spring, six-rowed malting barley that accumulates about half the level of deoxynivalenol (DON) compared to the varieties Tradition, Lacey and Robust, which currently occupy nearly 70% of the barley acreage in the Midwest (Table 1). One of the parental sources of resistance in Quest, a two-rowed variety from China called Zhedar 1, was introduced through a line selected from an early generation population created by Richard Horsley at North Dakota State University. The sharing of germplasm in this way has been extremely important to scab resistance breeding efforts. The other source of resistance comes from the variety MNBrite which derives its resistance from a Swiss landrace called Chevron.

Quest has yield and grain protein levels similar to Lacey and Tradition (Table 1). Quest has just completed the first year of plant-scale brewing evaluation in the American Malting Barley Association (AMBA) testing program. The

pipeline for scab resistance in the Minnesota barley breeding program is full with all new variety candidates entering the AMBA testing program having improved levels of scab resistance. Research leading to the development of new scab resistant varieties is supported by grants from AMBA, USDA-Wheat and Barley Scab Initiative and the Minnesota Small Grains Initiative. Seed of Quest is available through the Minnesota Crop Improvement Association.

**Table 1.** Comparison of current six-rowed barley varieties based on a meta-analysis\* of data from trials where each variety was compared to Robust.

Variety	Yield (bu/A)	% Grain Protein	DON (ppm)
Robust	80	13.0	2.0
Lacey	88	12.7	2.2
Tradition	89	12.7	2.5
Stellar-ND	86	12.4	2.4
Rasmusson	92	12.2	2.5
Celebration	90	13.0	1.4
Quest	89	12.5	1.2

\* Data from trials that included each of the varieties and the variety Robust were used to calculate the value of each variety relative to Robust. In the table the value of Robust was set to the values shown and the values for each of the varieties calculated relative to Robust. This allowed the inclusion of a large number of trials with a wide range of trial means. Data provided by Rich Horsley, Blake Cooper and Kevin Smith.

