

2-row vs. 6-row

What is the difference between a 2-row and 6-row barley?

This is a story of seeds, heads, history, and perception. 2-row barley has 2 rows of seed on each spike (head) and 6-row barley has 6 rows of seed on each spike (head). Botanically speaking, a 2-row has 1 fertile floret per rachis node and a 6-row has 3 fertile florets per rachis node. Two genes control the trait: *VRS1* and *INT-C*. *VRS1* is cloned and the cloning of *INT-C* will soon be announced. Wild barley is 2-row. The 6-row trait was selected shortly after domestication. The current geographic distributions of 2-row and 6-row (and perceptions regarding their suitability for different end uses) are largely accidents of history.



Six-rowed barley originated from a mutation in a homeodomain-leucine zipper I-class homeobox gene

Takao Komatsuda^{*1}, Mohammad Pourkheirandish^{**}, Congfen He^{*}, Perumal Azhaguvel^{*}, Hiroyuki Kanamori[§], Dragan Perovic[¶], Nils Stein[¶], Andreas Graner[¶], Thomas Wicker[¶], Akemi Tagiri^{*}, Udda Lundqvist^{**}, Tatsuhito Fujimura[‡], Makoto Matsuoka^{††}, Takashi Matsumoto^{*}, and Masahiro Yano^{*}

http://barleyworld.org/FAQ_sheet.php

^{*}National Institute of Agrobiological Sciences, Tsukuba 305-8602, Japan; ^{*}Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba 305-8572, Japan; [§]Institute of Society for Techno-Innovation of Agriculture, Forestry, and Fisheries, Tsukuba 305-0854, Japan; [¶]Leibniz Institute of Plant Genetics and Crop Plant Research, D-06466 Gatersleben, Germany; [¶]Institute of Plant Biology, University of Zürich, CH-8008 Zürich, Switzerland; ^{**}Svalöf Weibull AB, SE-268 81 Svalöv, Sweden; and ^{††}Bioscience and Biotechnology Center, Nagoya University, Nagoya 464-8601, Japan