Science Societies

New Multi-Rust-Resistant Barley Genotypes

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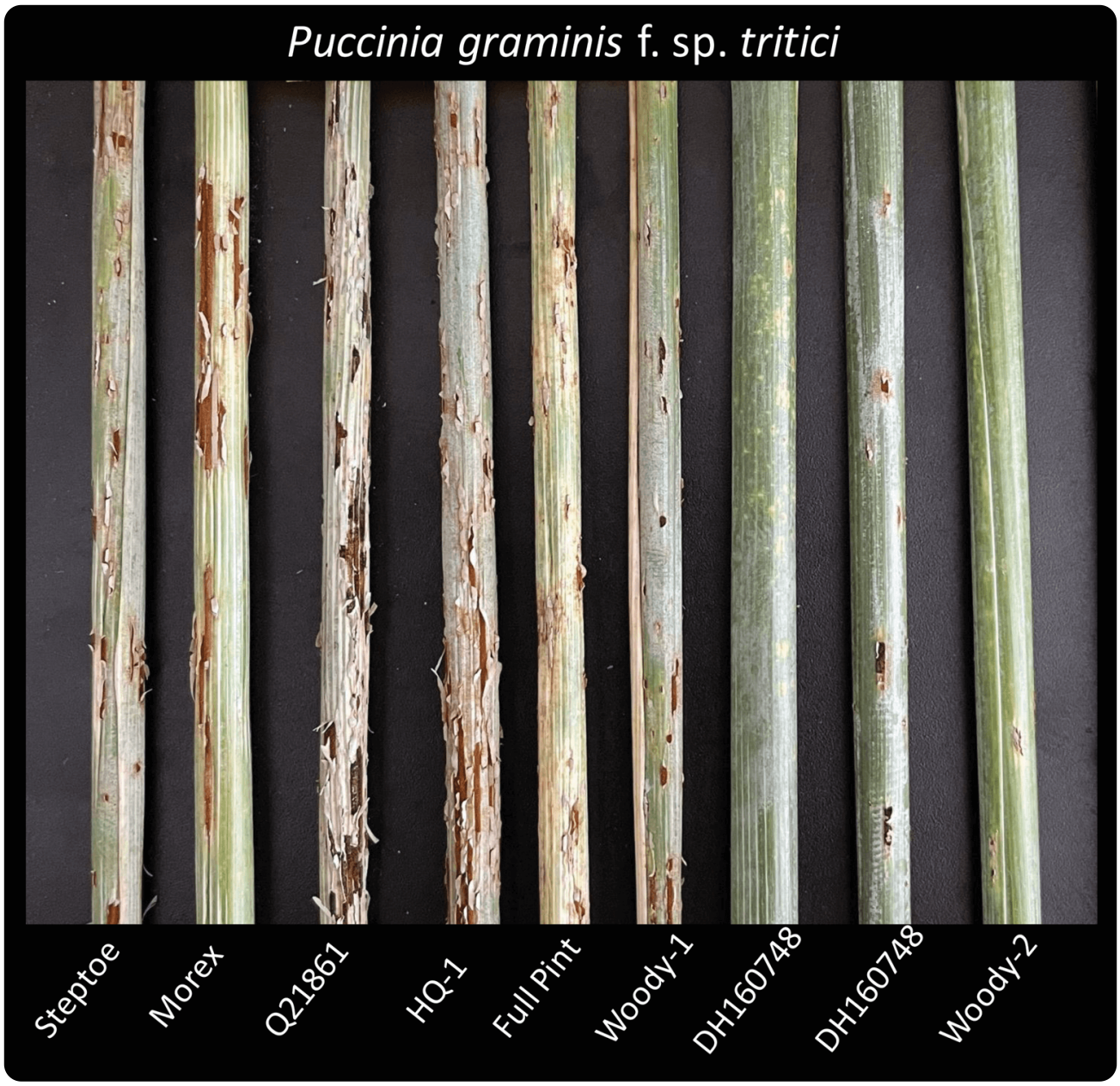

Comparison of stem rust (Puccinia graminis f. sp. tritici) disease across barley genotypes, including the “Woodies” created in this study. Image by Matthew Brooke, Washington State University.

Genetic resistance is the most cost-effective and environmentally sound approach to disease management in crop plants. Stem rust (incited by *Puccinia graminis* f. sp. *tritici*) and stripe rust (incited by *P. striiformis* f. sp. *hordei*) are two important diseases in barley (*Hordeum vulgare* L.) production. The discovery and deployment of durable resistance genes will help breeders break out of the "boom-and-bust cycle" that often occurs when single genes with major effects are used in crop varieties.

In the *Journal of Plant Registrations,* researchers report the discovery of novel quantitative trait locus alleles on chromosome 5H of barley associated with resistance to these rusts. These genes are available in two germplasms (Woody-1 and Woody-2) named in honor of the late Lynn "Woody" Gallagher, a pioneering developer of disease-resistant barley germplasm. While the durability of resistance can only be demonstrated in hindsight, the resistance has remained effective in multiple years and environments of testing.

These two-row, spring-growth-habit barleys were released by the Oregon Agricultural Experiment Station in 2024, and seed is available from the Oregon State University Barley Breeding Program or from the National Laboratory for Genetic Resources Preservation (NLGRP) Germplasm Repository.

Adapted from

Massman, C., Hernandez, J., Clare, S. J., Brooke, M., Filichkin, T., Fisk, S., … & Hayes, P. M. (2024). Registration of the "Woodies" multi–rust-resistant barley germplasm. J*ournal of Plant Registrations*, *18*, 393–401. https://doi.org/10.1002/plr2.20373