



UC Davis Wheat Breeding Program: Dr. Jorge Dubcovsky leads the Wheat Breeding Program and Molecular Genetics laboratory at the University of California, Davis. For over two decades, Dr. Dubcovsky has conducted pioneering research in mapping and isolating genes in wheat's massive genome and deploying those genes in wheat cultivars. He and his colleagues have identified and cloned genes involved in disease resistance, protein content, flowering and frost tolerance. Identification of these important genes has enabled researchers and breeders to accelerate the development of more nutritious and better-adapted wheat varieties. 'Yecora Rojo-515' is a product of Dr. Dubcovsky's ongoing collaboration with the California wheat industry in fulfillment of UC Davis' land grant mission to partner with and strengthen California agriculture.

Hard Red Spring wheat variety 'Yecora Rojo-515'

Yecora Rojo-515 (UC1916) is a semidwarf, early heading Hard Red Spring (HRS) similar to Yecora Rojo but with improved resistance to stripe rust.

Development **Yecora Rojo-515** was developed by backcrossing the stripe rust resistance genes Yr5 and Yr15 that are effective against all current races present in California using marker assisted selection. Since the two genes were backcrossed six times using the old Yecora Rojo as recurrent parents, Yecora Rojo-515 is expected to be approximately 99% identical to the old Yecora Rojo, except for the two new resistance genes.



Characteristics: **Yecora Rojo-515** was tested for grain yield and breadmaking quality and showed similar yield and quality than the original variety. Yecora Rojo-515 is 5 cm shorter than Yecora Rojo, but except for that is identical to the old variety. However, in regions where stripe rust was present, Yecora Rojo was infected and suffered large yield losses whereas Yecora Rojo-515 was immune to the disease and did not suffer any yield penalty.

Disease resistance: **Yecora Rojo-515** was shown to be immune to the highly virulent *Puccinia striiformis* races PSTv-4, PSTv-37, PSTv-40, PSTv-41, and PSTv-22, for which the old Yecora Rojo was highly susceptible. Field test confirmed the resistance of Yecora Rojo-515 and the susceptibility of Yecora Rojo to this disease.



Quality: **Yecora Rojo-515** quality tests at the California Wheat Commission showed the same excellent breadmaking quality as Yecora Rojo, which has been a standard for breadmaking quality in California for more than 40 years.

Area of adaptation and primary use: **Yecora Rojo-515** yield performance is similar to that of the old Yecora Rojo in all regions of California where the old variety is currently grown. Its primary use is for bread production.

Procedures to maintain stock seed classes: The Department of Plant Sciences at UC Davis will maintain Breeder seed. Foundation seed will be produced and distributed by the Foundation Seed Program of the University of California, Davis. The California Crop Improvement Association will provide certification services. Increases of foundation seed are allowed for indefinite number of cycles.

Intellectual property protection: **Yecora Rojo-515** is protected under Plant Variety Protection under Title V, and is sold as certified seed. To obtain information and/or a license for Yecora Rojo-515 contact InnovationAccess: Aubrey Nichole R. Medeiros, Intellectual Property Analyst, University of California, Davis, tel. (530) 752-4765, armedeiros@ucdavis.edu.