

Sara

Tested as 'Sara I': CMB93621-A-1Y-14B-0Y

Spring 6-row Hooded Feed Barley

Oregon State University

P.M. Hayes

Description

Growth habit	spring
Spike type	6-row erect
Awn type	Hooded
Aleurone color	White
Disease resistance	Barley stripe rust

Pedigree and history

The pedigree of Sara is Marco/Fragil//Cali92/3/Gloria-Bar/Come-b//Esperanza. Sara is a stripe rust resistant hooded spring barley developed by Hugo Vivar (retired; ICARDA/CIMMYT). Pat Hayes, OSU barley breeder, brought a collection of ICARDA/CIMMYT stripe rust resistant hooded lines to Oregon in 1998 and two lines ('Sara I' and 'Sara II') were selected from plots grown at the Klamath Falls Experiment Station, based on stripe rust resistance and phenotypic appearance. Sara I was identified by J.W. Cope (Winema Elevators; Tule Lake California) as having potential for inclusion in forage mixes. J.W. Cope arranged for Sara to be tested for such purposes in on-farm California trials from 1999 – 2001, and the variety was found to be of interest for use in mixes and in pure stands.

Sara has been included as a stripe rust resistance check in the OSU Barley Breeding Program trials since 1999. In over 50 tests conducted in Mexico and the Pacific Northwest under severe disease pressure, the stripe rust rating (percent severity on a plot basis) for Sara has averaged less than 15%. Because breeding forage varieties was not a principal area of activity for the OSU Barley Research Program, the hooded varieties currently grown in the Pacific Northwest (e.g. Washford and Belford) were not included in these resistance tests. However, Belford, Washford, Hoody and other currently available hooded barley varieties are reported to be very susceptible to stripe rust (confirmed in commercial production fields by Hayes and Cope, personal observation).

The OSU Barley Breeding Program is not equipped for forage yield and quality testing. Accordingly, only limited experimental data are available for making statistical comparisons between Sara and other hooded varieties for stripe rust resistance and forage yield. The OSU Statewide Variety Testing Program conducted a forage trial at Corvallis in 2001. Complete data are posted at: <http://www.css.orst.edu/cereals/>. Sara and Washford were included in this test. The maximum stripe rust severity recorded on Sara was 10% while the maximum stripe rust severity on Washford was 80%. Additional comparisons for the two varieties are shown in Table 1. Sara was taller, earlier, and had a

higher grain yield than Washford. The higher yield and tests weight of Sara are probably due to its stripe rust resistance. Forage yields were similar, probably due to the relatively late onset of the stripe rust epidemic.

Due to the limited niche market for Sara, an exclusive release to Winema Elevators Inc. of Tule Lake, CA was proposed to, and approved by, the OSU Cereal Variety Advisory Committee in 2001. An Exclusive License agreement was developed by W. Hostetler, OSU Technology Transfer Office, and approved in May, 2002. This first agreement expires in May 2006 and may be extended for an additional four year period if all parties are satisfied with performance under the agreement.

Table 1. Agronomic data on Sara and Washford, spring habit hooded varieties. OSU Statewide data; Corvallis, 2001. Complete data posted at <http://www.css.orst.edu/cereals/>

Selection	Grain yield (lbs/acre)	Test weight (lbs/bu)	Forage yield (tons/acre at 50% heading)	Plant height (inches)	Heading date (Julian days)
Sara	3706	44.4	12.4	37	151
Washford	1401	27.9	12.9	34	161
LSD (0.05)	494	1.0	NA	NA	NA

While data on Sara are very limited, we ask that the variety be considered for release by OSU due to its unique place in the grain forage industry and an already known seed demand.