head selection from a cross made in 1975 between 'Butte' (CI 17681) and a sister selection of 'James' (CI 17791). The F₁ and F₂ generations were grown in the greenhouse and field, respectively, at Brookings, S.D., in 1976. The F₁ and F₂ generations were grown as head rows in a winter nursery in Mexico and the F₄ generation in replicated yield trials in South Dakota from which heads were selected. An F₃ head row in Mexico was bulked and designated SD 2868. Centa was evaluated in state trials from 1979 through 1981, in the Uniform Regional Spring Wheat Yield Nursery in 1980 and 1981 and in the Crop Quality Council Test in 1981.

Centa has a spring growth habit, is early heading and has a mid-tall, white, hollow stem similar to Butte. Spikes are awned, fusiform, mid-dense, and near erect. Awns are white and 10 to 50 mm long. Glumes are white, glabrous, mid-long, and narrow with mid-wide and square to elevated shoulders. The beaks are narrow, acuminate, and 3 to 5 mm long. Kernels are red, hard, mid-long, and ovate to elliptical with rounded cheeks and a mid-wide, mid-deep crease. The germ is mid-size to large and the brush is mid-size and mid-long.

In 16 South Dakota tests from 1979 through 1981, Centa yielded 98, 103, and 110% of Butte, 'Olaf' and 'Protor', respectively, if the mean yield of all lines tested at the site was greater than 2018 kg/ha. At an additional 12 sites where the mean yield was less than 2018 kg/ha, Centa yielded 105, 101, and 102% of Butte, Olaf, and Protor respectively. Test weight is greater than 'Waldron' and similar to Centa. Centa has moderate resistance to leaf rust (incited by Puccinia recondita Rob. ex Desm. f. sp. tritici Eriks) and is resistant to prevalent races of stem rust caused by Puccinia graminis f. sp. tritici Eriks and E. Henn. Grain protein content of Centa is classified as medium, being less than Waldron, but similar to Butte. Florum exhaust percent is higher and percent ash in the flour is less than in Waldron. Baker characteristics are similar to Waldron, except that Centa has a slightly lower bake absorbance. A light colored seed variant of up to 0.2% may be present in the seed lots of Centa.

Centa was named and released by the South Dakota Agricultural Experiment Station on 15 Jan. 1982. Breeders seed will be maintained by the Foundation Seedstocks Project, South Dakota State Univ., Brookings, SD 57007. An application for protection under the Plant Variety Protection Act with certification will be submitted.

Registration of Germplasms

REGISTRATION OF KS80 ALFALFA GERMPLASM RESISTANT TO THE BLUE ALFALFA APHID, PEA APHID, SPOTTED ALFALFA APHID, ANTHRACNOSE, AND DOWNY MILDEW

E. L. Sorensen, E. K. Horber, and D. L. Stuteville

KS80 alfalfa germplasm (Medicago sativa L.) was released by the Kansas Agricultural Experiment Station and USDA-ARS in November 1982. It provides resistance to blue alfalfa aphid [Acyrthosiphon kondoi (Shirji)], pea aphid [Acyrthosiphon pisum (Harris)], spotted alfalfa aphid [Therioaphis maculata (Buckton)], anthracnose caused by Colletotrichum trifolii, and downy mildew caused by Peronospora trifoliorum f. sp. trifolii.

KS80 was derived from four populations: KS63PA3SA3AN2M4, KS69SA1AN2M2, KS69PA4SA1AN1M6, and K733PA3SA3AN2M6. Blue alfalfa aphid resistant plants from each population were intercrossed in the greenhouse by hand pollination. The resultant population was subjected to recurrent phenotypic selection for resistance to the blue alfalfa aphid (2 cycles), pea aphid (2 cycles), spotted alfalfa aphid (2 cycles), and bacterial wilt [Corynebacterium insidiosum (McCu]] (H. L. Jens.) (1 cycle). Approximately 125 plants from the last cycle were intercrossed in the greenhouse by hand pollination to produce syn 1 seed. Syn 2 seed was produced by intercrossing approximately 300 syn 1 plants in a field cage. Honeybees (Apis mellifera L.) were used for pollination. Approximate percentages of germplasm are: Chilean (40), Flemish (45), Indian (<1), Lakad (3), Medicago falcata (2), M. varia (3), and Turkistan (2).

In an anthracnose seedling resistance test at Raleigh, N.C., the percentage of resistant plants for KS80, the resistant control 'Arc', and the susceptible control 'Saranac' were 84, 76, and 4, respectively. Seedling tests to evaluate resistance to downy mildew, blue alfalfa aphid, pea aphid, and spotted alfalfa aphid were conducted in Manhattan, KS. KS80 and resistant and susceptible controls showed the following percentages of resistant plants in tests with three downy mildew fungus isolates: KS80 = 84, Saranac = 48, 'Kanza' = 1 for isolate 1-5; KS80 = 56, Saranac = 20, Kanza = 0 for isolate 1-7; KS80 = 70, Saranac = 60, Kanza = 0, for isolate 1-8. Percentages of seedlings surviving after infestation with aphid biotypes found in Kansas were: KS80 = 66, 'CUF101' = 59, 'Buffalo' = 8 for the blue alfalfa aphid; KS80 = 73, Kanza = 65, 'Ranger' = 8 for the pea aphid; KS80 = 92, Kanza = 68, and Ranger = 6 for the spotted alfalfa aphid.

Five grams of KS80 syn 2 seed will be made available to each applicant upon written request and agreement to make appropriate recognition of its source as a matter of open record when this germplasm contributes to the development of a new cultivar or hybrid.

Seed stocks of KS80 syn 2 are maintained by the Dep. of Agronomy, Kansas State Univ., Manhattan, KS 66506.

REGISTRATION OF MOBET BARLEY GERMPLASM

T. W. Carroll, E. A. Hockett, and S. K. Zaske

'MObET' barley (Hordeum vulgare L.) germplasm, PI 467884, was released cooperatively by the Montana Agricultural Experiment Station and the USDA-ARS, Bozeman, Mont. It was de-