

Spikes of Colt are awned, middense, tapering, white to yellow, usually carried erect at maturity, and somewhat shorter than those of Scout 66. Awns are white and longer than those of Scout 66. Glumes are glabrous, midlong and midwide, with narrow, square to rounded shoulders. Beaks are acuminate and very long. Kernels of Colt are red, elliptical, semihard to hard, and similar to kernels of Scout 66 in size and weight. The kernels have a medium-large germ, brush of medium length without a collar, rounded cheeks and a narrow, fairly shallow crease. Test weights of Colt and Scout 66 are similar.

Grain of Colt has satisfactory hard wheat milling properties. Flour of Colt is similar to that of Scout 66 in its bread-baking characteristics such as dough mixing time (mellow), mixing tolerance and loaf volume potential.

During field testing, Colt has been moderately resistant to leaf rust (incited by *Puccinia recondita* Rob. ex Desm. f. sp. *tritici* Eriks.), powdery mildew (incited by *Erysiphe graminis* DC. f. sp. *tritici* E. Marchal), and stem rust (incited by *Puccinia graminis* Pers. f. sp. *tritici* Eriks. and E. Henn.). Colt is intermediate in its reaction to soilborne mosaic virus but susceptible to wheat streak mosaic virus. It has the 'Mar-

quillo'-'Kawvale' type of resistance to the Great Plains biotype of Hessian fly [*Mayetiola destructor* (Say)].

Colt was named and released jointly by the Nebraska Agric. Exp. Stn. and the USDA-ARS in 1983. Protection is being requested under the Plant Variety Protection Act, Public Law 91-577 with the certified seed class option. Seed classes recognized are breeder, foundation, registered, and certified. Breeder seed will be maintained by the Nebraska Agric. Exp. Stn., Lincoln, NE 68583.

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References and Notes

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REGISTRATION OF GLENMAN WHEAT

'GLENMAN' HARD RED SPRING WHEAT (*Triticum aestivum* L.) (Reg. No. 696), PI 483235, was developed cooperatively by the USDA-ARS and the Montana Agric. Exp. Stn.

Glenman is a solid-stemmed, semidwarf cultivar selected from Cross 208774C-IR8M/'Fortuna'. Cross 208774C-IR8M is a segregate from the cross of 'Tezanos Pintos Precos'/'Sonora 64', made by the International Center for Maize and Wheat Improvement. The female parent was selected from a nursery grown at Bozeman, MT, in 1968. Fortuna (1) is currently recommended for wheat stem sawfly (*Cephus cinctus* Norton) infested areas in Montana. The selection now called Glenman has been tested in yield trials starting in 1978 as MT 7819.

Glenman is a single-gene semidwarf, resistant to the wheat stem sawfly. The straw is white and is solid under favorable environmental conditions. Glenman is more susceptible to lodging than hollow-stemmed cultivars of similar height. The spike is apically awnleted, fusiform, mid-dense to lax, and erect. Glumes are glabrous, white to tan, mid-long, mid-wide; and shoulders wide, square to rounded; and beaks wide, obtuse, 1 mm long. Kernels are mid-long, hard and ovate; germ mid-sized; crease narrow, mid-deep; cheeks rounded; brush mid-sized, mid-long. It is resistant to the races of stem rust (*Puccinia graminis* Pers. f. sp. *tritici* Eriks & Henn.) and stripe rust, (*Puccinia striiformis* West.) used in Montana tests, but is susceptible to leaf rust, (*Puccinia recondita* Rob. ex Desm. f. sp. *tritici*). It is mid-season in maturity.

Glenman has a higher yield potential than 'Lew' (2) under favorable moisture and fertility levels, but will usually yield 5 to 10% less than 'Newana' (3). Its test weight is approximately 3 g/L less than Lew, but only slightly below that of Newana. Grain protein content of Glenman has averaged about the same as Newana. Experimental milling data from the Montana Agricultural Experiment Station Cereal Quality Laboratory indicate that Glenman has exceptionally good flour yield potential. Its dough mixing time is longer than desired however, and its loaf volume and absorption are lower than those of Newana. Other quality characteristics are satisfactory.

Because of its resistance to the wheat stem sawfly, Glen-

man will be of value in areas where this insect is a production hazard. It is the only semidwarf available to producers with this problem.

Breeder seed will be released to Montana certified seed growers in the spring of 1985 for foundation seed production. Breeder and foundation seed will be maintained by the Foundation Seed Program, Plant and Soil Science Department, Montana Agric. Exp. Stn., Montana State Univ., Bozeman, MT 59717.

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References and Notes

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4. F.H. McNeal, Research Agronomist (retired), USDA-ARS, Bozeman, MT; Research Geneticist, USDA-ARS, Bozeman, MT; Professor of Agronomy, Montana State Univ., Bozeman, MT 59717-0002; Associate Professor and Superintendent, Eastern Agric. Res. Center, Sidney, MT 59270; Assistant Professor of Agronomy, Northern Agric. Res. Center, Havre, MT 59501; Associate Professor and Superintendent, Central Agric. Res. Center, Moccasin, MT 59462; Associate Professor and Superintendent, Western Triangle Res. Center, Conrad, MT 59425; Professor and Superintendent, Northwestern Agric. Res. Center, Kalispell, MT 59901; Professor of Plant Pathology, Montana State Univ., Bozeman, MT 59717; Research Associate, Montana State Univ., Bozeman, MT 59717. Journal article no. J-1497 of the Montana Agric. Exp. Stn. Accepted 5 Dec. 1984.

REGISTRATION OF 'BOZOISKY-SELECT' RUSSIAN WILD RYE

'BOZOISKY-SELECT' Russian wildrye [*Psathyrostachys juncea*, (Fisch.) Nevski, Syn. *Elymus junceus* Fisch.] (Reg. no. 97) was released by the USDA-Agricultural Research Service in cooperation with the Utah Agricultural Experiment Station and the USDA-Soil Conservation Service on 2 July 1984.

The new cultivar was developed from PI 440627 (Bozoisky) recently obtained from the USSR. The breeding population was subjected to two cycles of selection for im-

proved vigor, leafiness, seed yield, coleoptile length, and seedling vigor. Breeder's seed was obtained by bulking the open pollination seed of 23 clones selected from a nursery consisting of 2100 second-cycle plants.

Bozoisky-Select has been significantly more vigorous and productive than the check cultivar 'Vinall' in range seedlings. At eight semiarid range locations in Utah, Idaho, and Wyoming, it yielded 23% more forage than Vinall during the first two production years. Stand establishment of the new cultivar has been equal to or superior to Vinall in over 20 trials representing the Sagebrush (*Artemisia* spp.), Juniper (*Juniperus* spp.), shadscale [*Atriplex confertifolia* (Torr. & Frem.) S. Wats], greasewood [*Sarcobatus vermiculatus* (Hook.) Torr.], and Indian ricegrass [*Oryzopsis hymenoides* (Roem. & Schult.) Ricker] ecosystems. Bozoisky-Select had better seedling vigor and larger seeds than Vinall or 'Swift' in laboratory trials. Coleoptile length, a character associated with better seedling emergence from deep plantings, was significantly greater in Bozoisky-Select than in Vinall or Swift. Grazing trials indicate that the cultivar is equally palatable to grazing cattle as Vinall.

Recommended seeding rate for seed production is 2.5

kg/ha in rows spaced approximately 1 m apart. When drilling on rangeland, 7 kg/ha is recommended.

Breeder seed will be maintained by the ARS at Logan, Utah. Foundation seed will be produced from breeder seed by the SCS Plant Materials Center at Bridger, Montana, and should be available by Spring, 1985. For information regarding supplies of Foundation seed, contact local soil conservation districts and the crop improvement association of the state in which the seed is to be planted.

Certification of two generations beyond the foundation class will be permitted.

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References and Notes

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Registration of Germplasms

REGISTRATION OF FOUR SHORT DURATION FUSARIUM WILT-RESISTANT KABULI (GARBANZO) CHICKPEA GERMPASMS

FOUR short duration kabuli chickpea (*Cicer arietinum* L.) lines with resistance to *Fusarium oxysporum* f. sp. *ciceri* race-1 were developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), India. These lines ICCV 2 (GP-46) ICCV 3 (GP-47), ICCV 4 (GP-48) and ICCV 5 (GP-49) were released to breeders as ICCL-82001, ICCL-83006, ICCL-83004 and ICCL-83009 in April 1983. Seeds of kabuli chickpea are salmon white coloured and owl head shaped.

All were developed by pedigree selection in an artificially wilt-infested field on the research farm of ICRISAT, near Hyderabad. ICCV 2 and ICCV 3 were derived from the complex cross, [F₃ (K-850 × Gw-5/7) × P-458] × F₃ (L-550 × Guamuchil)-2. Plants without visible wilt symptoms were selected in the F₂ generation in the wilt-sick plot. Seed from one F₃ progeny that showed less than 10% wilt incidence were bulked as ICCX-752770-15P-BP (ICCV 3). Plants without wilt symptoms were selected in another F₃ progeny and these seeds were bulked in the F₄ generation as ICCX-752770-13P-2P-BP (ICCV 2).

ICCV 4 and ICCV 5 were derived from the cross, C-104 × CPS-1. The F₁ generation was planted in the off-season and the F₂ generation was planted in non-infested normal fields at Hyderabad. Single plants were harvested in the F₂. Plants without wilt symptoms were selected in the wilt-infested field in the F₃, F₄ generations. Their F₅ progenies showed less than 10% wilt incidence and they were bulked as ICCX-780168-65P-4P-BP (ICCV 4) and ICCX-780168-65P-5P-BP (ICCV 5).

Bulk selection for acceptable kabuli type seed has been practiced in subsequent bulks of all the lines. Their wilt resistance has been confirmed in the wilt-infested field (race-1) and in artificially inoculated pots in a glasshouse. Despite

the early generation of bulking, they are uniform in all morphological, phenological and wilt resistance characteristics.

ICCV 2 flowers about 2 weeks earlier and matures about 1 week earlier than 'Annigeri', a desi (brown, angular seeds) type cultivar recently released in Peninsular India. ICCV 2 flowers and matures about 3 weeks earlier than 'L-550', the kabuli type cultivar most recently released in northern and central India. Seeds of ICCV 2 are about 15% heavier than those of L-550.

ICCV 3 flowers and matures 1 week earlier than Annigeri and 2 to 3 weeks earlier than L-550. Its seeds are much larger (75 to 90%) than those of L-550.

ICCV 4 and ICCV 5 flower and mature at about the same time as Annigeri. They flower up to 1 week earlier and mature 3 weeks earlier than L-550. Their seed sizes are 15% (ICCV 4) and 7% (ICCV 5) larger respectively than those of L-550.

All four lines are white flowered and the anthocyanin pigmentation is absent from other plant parts. ICCV 2 and ICCV 3 have a spreading growth habit with a few well-developed primary and secondary branches. ICCV 4 and ICCV 5 are taller (32 and 34 cm, respectively) than Annigeri (23 cm) and L-550 (28 cm) and produce profuse and well-developed primary and secondary branches. In unreplicated trials ICCV 2 and ICCV 3 yielded slightly less than and ICCV 4 and ICCV 5 slightly more than Annigeri. They have the additional advantage of a considerable price premium for kabuli type seeds.

The combination of acceptable kabuli type seeds with short duration and wilt resistance did not occur in the world collection of chickpea germplasm maintained by ICRISAT. The short duration of ICCV 2, ICCV 3, ICCV 4, and ICCV 5 enable their cultivation in areas where growing seasons are restricted, notably in Peninsular India, where the maturities of previous kabuli types are too long in duration to produce seed yields competitive with desi types. *Fusarium*