

Registration of Crop Cultivars

REGISTRATION OF 'SAMSON' BARLEY

'SAMSON' barley (*Hordeum vulgare* L.), PI 49476 (Reg. no. 201), was developed by Alberta Agriculture Crop Research, Lacombe, Alberta, Canada. It was selected from a cross of 'Olli'/M64-69//R72-181. The crosses were made by Dr. K.G. Briggs at the University of Alberta, Plant Science Department, Edmonton, Alberta, in 1969 and 1971. M64-69 was obtained from the Minnesota winter nursery in Mexico in 1969 with the pedigree of 'Jotun'/'Kindred'/'Vantage'/3/'Trophy'/4/'Dickson'/5/M59-38. M59-38 is from Minnesota, resulting from a cross of Wisconsin X691 to 'Swan'. R72-181 was selected in Mexico in 1972. The pedigree of this line is incomplete; however, we know the Minnesota line Jotun / Kindred // Vantage is part of its parentage. Both M64-69 and R72-181 carry the Jotun semi-dwarf gene.

Olli is an early maturing six-rowed cultivar, which was grown extensively in the northern areas of barley production in Alberta. In 1969, F₁ seed of the cross Olli /M64-69 was grown in the growth room of the University of Alberta. The F₂ seed was grown in the field in the summer of 1970. The F₃ seed was grown in 1971-1972 in a winter increase nursery at the Centro de Investigaciones Agricolas del Noroeste (CIANO) Research Station, Cd. Obregon, Sonora, Mexico. An F₄ selection was then crossed to R72-181 in the field at Edmonton, Alberta, in the summer of 1972. The F₁ seed was increased in the growth room at the University of Alberta in 1972-1973 with the F₂ population grown in the field during the summer of 1973. The F₃ population was grown at the CIANO Research Station during the winter, 1973-1974. Single plant selections were made from the F₃ nursery and grown in head rows in Alberta during the summer of 1974 and again in the winter nursery in Mexico. A single head selection from the F₃ row fixed the type. Two hundred F₃ heads were grown out for evaluation of deviant or off-type material and 117 head rows were bulked in 1983 to form breeders seed.

Samson is a six-rowed, rough-awned, semi-nodding, semi-dense headed, medium maturing, spring feed barley cultivar. The juvenile plants have an intermediate growth habit. Leaves are medium to dark green and medium wide, averaging 22 mm. Basal leaf sheaths are glabrous and the auricles are whitish.

Spikes are strap shaped, medium long, and semi-nodding. The covered kernels have a yellow aleurone and basal markings of an incomplete horseshoe depression. The rachilla is of medium length, mostly with long hairs but occasionally with short. Glumes are completely covered with short hairs. Samson has a stiff, semi-dwarf straw with an erect tillering pattern. The straw length is similar to that expected from a single gene for dwarfing.

Samson is adapted to the higher yielding areas of west central Alberta with deep black soils and high summer rainfall. In this area it outyields all presently grown cultivars when high levels of fertilizer are applied, due primarily to its stiff, strong straw. Under these conditions it has yielded from 10 to 50% more than 'Bonanza' in 33 tests.

It matures 1 to 2 days later than 'Empress' and is 12 to 18 cm shorter than Empress. Samson has a more vigorous and extensive rooting system than other commonly grown cultivars, giving it more late season drought tolerance.

Samson is moderately resistant to common root rot caused by *Helminthosporium* species. It also shows reasonable adult

plant resistance to both scald and net blotch [caused by *Rhynchosporium secalis* (Oud.) J. J. Davis and *Pyrenophora teres* Drechs., respectively], under field conditions in Alberta. However, greenhouse tests with inoculated seedlings indicate Samson is susceptible to these diseases. Samson has shown moderate resistance to several races of stem and leaf rust, [caused by *Puccinia graminis* f. sp. *tritici* Eriks & E. Henn and *P. hordei* Otth, respectively]. Samson is susceptible to septoria leaf blotch (caused by *Septoria passerinii* Sacc.), loose smut [caused by *Ustilago nuda* (Jens.) Rostr.], and surface borne smuts [caused by *Ustilago nigra* Tapke and *Ustilago hordei* (Pers.) Lagerh.].

Samson was released by Alberta Agriculture Crop Research in 1985. Breeder seed will be maintained by Alberta Agriculture Crop Research, Lacombe, Alberta, and distributed through the SeCan Association, 512 - 885 Meadowlands Drive, Ottawa, Ontario, Canada K2C 3N2.

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References and Notes

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REGISTRATION OF (TAMCOT CAB-CS) UPLAND COTTON

TAMCOT CAB-CS cotton (*Gossypium hirsutum* L.) (Reg. no. 87) was developed in the Texas Agricultural Experiment Station multi-adversity resistance (MAR) genetic program. This program uses MAR techniques to pyramid genes in cotton that condition broad spectrum resistance to diseases, insects, and environmental stresses. Tamcot CAB-CS originated from the cross CAMD-21-S-78 × BCUS-8-76 and individual plants were selected using the MAR procedure (3). An F₄ progeny was given the strain designation TX-CABCS-1-81 and Tamcot CAB-CS was evaluated under this designation and the name TX-CABCS-X. Information on the pedigree is given elsewhere (4).

The categories used to describe levels of resistance (partial resistance, intermediate resistance, resistance and high resistance) in MAR cottons and performance data for CAB-CS have been presented (4). Tamcot CAB-CS has the B₂B₃B₇, minor-modifier and MAR genes and testing procedures show these give high resistance to the 19 designated races of the bacterial blight pathogen, *Xanthomonas campestris* pv *malvacearum* (Sm.) Dye.

Tamcot CAB-CS has about the same level of resistance to diseases and insects as reported for Tamcot CAMD-E (2).

All plant parts of Tamcot CAB-CS are glabrous, but it matures as early as hairy CAMD-E and has the same yield potential (4). In comparison to glabrous Tamcot SP21S (1) it is less leafy and its leaves and bracts are smaller in size. The glabrous character reduces damage caused by *Heliothis* spp. and trash content of fiber and seed. Glabrousness combined with a reduction of leaf and bract particles should make a greater contribution to reducing the trash content of fiber. The bolls of Tamcot CAB-CS are storm resistant, and

the plant type and fruiting habit are suitable to machine harvest by picking or stripping.

The fiber is longer and stronger than that of Tamcots CAMD-E and SP21S (4) otherwise they are similar. Average boll weight is 5.41 g seed cotton and lint percent is 38.

The Foundation Seed Service of the Texas Agricultural Experiment Station will produce and sell foundation seed to producers of registered and certified classes. Application for protection under the U.S. Plant Variety Act with Title V, which requires that Tamcot CAB-CS be sold only by name as classes of certified seed, has been approved.

L. S. BIRD, K. M. EL-ZIK, AND P. M. THAXTON (5)

References and Notes

1. Bird, L.S. 1979a. Registration of Tamcot SP21S cotton. *Crop Sci.* 19:410-411.
2. ———. 1979b. Registration of Tamcot CAMD-E cotton. *Crop Sci.* 19:411-412.
3. ———. 1982. The MAR (multi-adversity resistance) system for genetic improvement of cotton. *Plant Dis.* 66:172-176.
4. ———, K.M. El-Zik, and P.M. Thaxton. 1985. Tamcot CAB-CS, a multi-adversity resistant cotton variety. *Texas Agric. Exp. Stn. L-2138.*
5. Professor, professor, and research scientist, respectively. Dep. of Plant Pathology and Microbiology, Texas Agric. Exp. Stn., The TAMU System, College Station, TX 77843. Paper no. 20389 of the Texas Agric. Exp. Stn. Registration by the Crop Sci. Soc. of Am. Accepted 3 Oct. 1985.

REGISTRATION OF 'LINTON' FLAX

'LINTON' flax (*Linum usitatissimum* L.) (Reg. no. 38, PI 499690) was developed and tested cooperatively by personnel of the USDA-ARS and the North Dakota Agricultural Experiment Station. Linton, released in January 1985, is a blue-flowered, brown-seeded F_6 derived selection advanced by pedigree selection from the cross CI 2506 $M^3M^3P^3P^3$ /'Culbert' made in 1974. The selection from the F_6 generation was made in 1978. CI 2506 $M^3M^3P^3P^3$ is a multiple-gene line developed by H. H. Flor with resistance to flax rust (incited by *Melampsora lini* (Ehrenb.) Lev). Rust resistance of plants was tested in the F_2 , F_4 , and F_6 generations. The $M^3M^3P^3P^3$ genes possessed by Linton convey resistance to all naturally occurring and prevalent races of flax rust in North America.

Linton, tested as CI 2934, was 15.6% higher in seed yield than the cultivars 'Linott', Culbert, and 'Dufferin', averaged across early and late seedings in North Dakota regional trials in 1980 to 1982. Yield of Linton averaged 1075 kg ha⁻¹ and the three checks averaged 930 kg ha⁻¹. Linton was 4% higher yielding than the same checks in all North Central Regional Flax trials. Linton flowered 51 days after sowing and is medium height (57 cm), medium high in oil percentage (42.6), and medium high in iodine value (183). Linott, Culbert, and Dufferin flowered 52, 49, and 55 days after sowing to first bloom and were 57, 53, and 60 cm in height, respectively. Linton is resistant to wilt [incited by *Fusarium oxysporum* Schlecht. f. *lini* (Bolley) Snyder and Hans.], and scored higher in ratings than Linott, Culbert, and Dufferin in all 3 yrs of testing.

Linton is adapted to the north central flax-growing region of the USA. Seed classes are breeder, foundation, registered, and certified. Breeder seed is maintained by the Seedstocks Project, Agronomy Department, North Dakota Agricultural Experiment Station, Fargo, ND 58105.

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References and Notes

1. Research geneticist, USDA-ARS; professor, Dep. of Agronomy, North Dakota State Univ.; research pathologist, USDA-ARS; professor, Dep. of Plant Pathology, North Dakota State Univ., Fargo, ND 58105. Cooperative investigations between the USDA-ARS and the North Dakota Agric. Exp. Stn., Fargo, ND 58105. Published with the approval of the director of the North Dakota Agric. Exp. Stn. as Journal Article no. 1415. Registration by Crop Sci. Soc. of Am. Accepted 9 Aug. 1985.

REGISTRATION OF 'HASKELL' SIDEOATS GRAMA

'HASKELL' sideoats grama [*Bouteloua curtipendula* (Michx.) Torr.] (Reg. no. 100) was released by the USDA Soil Conservation Service in Texas in 1983. It was evaluated as PMT-470 and later as PI-433946 at the Knox City Plant Materials Center.

Sideoats grama is a grass of the midgrass prairie that spreads from seed and rhizomes. Haskell was collected in 1960 from seed of a single colony of sideoats grama found northeast of Haskell, TX. Testing began at Knox City, TX, in 1965. During its evaluation at Knox City, off-type plants were removed from seed increase rows.

Haskell was compared to over 40 native collections and cultivars of sideoats grama including 'El Reno'. In initial evaluation rows, Haskell showed excellent rhizome development, good vigor, and resistance to seed shattering. In advanced testing, Haskell was superior to El Reno and most other native collections in rhizome development, production, and vigor. Field planting data showed Haskell is the best and most consistent forage producing cultivar of sideoats grama for central and southern Texas.

Haskell has performed well in areas of Texas receiving 45.72 cm (18 inches) or greater natural rainfall. It is a vigorous cultivar that shows good drought tolerance, and good rhizome and seed production. It is well adapted to central and southern Texas, but Haskell's full range of adaptation is still being evaluated. The primary use for Haskell is rangeland revegetation and pasture improvement. It also has merit for use in soil stabilization in reclaimed surface mined areas and in grassed waterways.

Breeder seed of Haskell will be maintained by the USDA-SCS, Plant Materials Center of Knox City, TX 79529-9752.

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References and Notes

1. Plant materials specialist, USDA-SCS, Temple, TX 76501. Registration by the Crop Sci. Soc. of Am. Accepted 21 Oct. 1985.

REGISTRATION OF 'KELLY' OAT

'KELLY' oat (*Avena sativa* L.) (Reg. no. 311) (PI no. 486133) is a spring oat cultivar developed by the South Dakota Agricultural Experiment Station. It was tested as SD 743358-06 and was released in February 1984.

Kelly came from a 1972 cross of 'Dal'/'Nodaway 70'. It traces to an F_3 line derived from a single F_2 plant that was selected for crown rust resistance. This F_3 line was tested as bulk until the F_6 when an early maturing panicle was selected. This F_6 selection was designated SD 743358-06 and tested in state and regional trials.

Kelly was tested statewide 1981 to 1983, and in the Uniform Early Oat Performance Nursery in 1982 to 1983. Based