

Registration of Crop Cultivars

REGISTRATION OF KNOB BARLEY¹

(Reg. No. 118)

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John T. Green²

'Knob' winter barley, (*Hordeum vulgare* L. emend. Lam.) CI 11910, was developed by the Department of Agronomy, University of Kentucky. It originated from the cross 'Aizu 6' (CI 9016) × an awnless F₂ plant from a cross of 'Kenbar' (CI 7574) × 'Wong' (CI 6728). The cross was made by the senior author in 1955. A head row pedigree breeding system was used to select the variety. Individual heads were selected in the F₃ and progeny tested for trueness to type. Progenies that appeared to be true to type were bulked and constituted the seed source. Date of release was July 1, 1969.

Description.—Six-rowed and short-awned on central spikelets, awnless on lateral spikelets, winter barley; early growth semiprostrate to prostrate; plant early and short; basal leaf sheaths without hairs, green; upper leaf sheaths glabrous, yellow at maturity; auricles white; leaves short, narrow and upright; flagleaves short, narrow; stems yellow at maturity, exposed nodes green, neck snaky, distance flagleaf to spike 10 to 15 cm; collars closed; basal rachis internode straight, short; rachis tough with short hairs on edges; spike dense, short, parallel, nonwaxy and erect; lateral kernels seldom overlap even at tip of spike; lemma awn short on central spikelets awnless on lateral spikelets, awns rough, tips yellow; glume awn equal to length of glume, rough and yellow; glumes half the length of lemma; few short hairs at base of glumes; rachilla short-haired, seldom abortive; lemma yellow with few teeth on marginal nerves, with depression at base; kernels white, short to mid-long; hulls slightly wrinkled.

Knob has been evaluated in regional nurseries since 1967. In Kentucky, Knob, compared with Kenbar, has been equal in winter survival, 1 day earlier in heading, and several days earlier in ripening, 10 cm (4 in.) shorter, superior in lodging resistance, cleaner thrashing, higher yielding, and equal in test weight. Knob is susceptible to loose smut, has resistance to some races of mildew, and escapes damage from other barley diseases common in Kentucky because of its early maturity. Kernels are easily removed from the head by combine harvesting in high humidity areas but will tend to shatter under dry windy conditions.

The Kentucky Agricultural Experiment Station will maintain supplies of breeder seed of Knob.

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REGISTRATION OF WESTBURN 70 COTTON¹

(Reg. No. 54)

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'Westburn 70' cotton (*Gossypium hirsutum* L.) was developed by the Oklahoma Agricultural Experiment Station, Stillwater, Okla., in cooperation with the Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, Beltsville, Md., in the following manner:

(a)—Five hundred individual plant selections based on general plant type and the stormproof boll were made within an increase block of 'Westburn' at Perkins, Okla., in 1965.

(b)—These 500 selections were grown in individual progeny rows at Chickasha, Okla., in 1966; and the upper 10% of those rows were chosen on the basis of their fiber length.

(c)—The 50 progenies selected at Chickasha and several check varieties, including Westburn, were then grown in replicated, randomized experiments in 1967 and 1968 at three locations. Those locations were Chickasha, where the fusarium wilt [*Fusarium oxysporum* Schlecht f. *vasinfectum* (Atk.) Snyder and Hansen] and root-knot nematode (*Meloidogyne incognita* var. *acrita* Chitwood) complex is not considered to be a problem; Elk City, Okla., where the complex induces moderate damage; and Hollis, Okla., where infestation is extremely severe. Selections were then made based on lint yield; pulled lint percent; earliness; fiber length, uniformity, coarseness, and strength; and resistance to the fusarium wilt-nematode complex. Particular emphasis was placed on fiber length and resistance to the disease. If a line had a short fiber or if it displayed susceptibility to the fusarium wilt-nematode complex at Elk City or Hollis or both, it was discarded. Thirteen of the lines which were increased in 1968 were bulked for the production of foundation seed in 1969. The bulk and several check varieties, including Westburn, were also tested in 1969 under eight sets of environmental conditions.

Experimental data from the 14 tests indicate that Westburn 70 has a fiber approximately .079 cm (1/32 inch) longer than that of Westburn, while data from the seven tests where earliness was measured indicate that Westburn 70 is also somewhat earlier in maturity than Westburn. In all other respects studied, the two varieties were very similar. Like Westburn, Westburn

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³Murray, Jay C. 1969. Registration of Westburn cotton (Reg. No. 53). Crop Sci. 9:522.

70 has a stormproof boll, is resistant to the fusarium wilt-nematode complex, has a slight tolerance to verticillium wilt (*Verticillium albo-atrum* Reinke and Berth.), and is susceptible to bacterial blight [*Xanthomonas malvacearum* (E. F. Sm.) Dows.]. Both varieties have essentially the same fiber uniformity, coarseness, and strength as well as pulled lint percent. Both varieties have produced high yields of lint under Oklahoma conditions, especially on dryland or under limited irrigation, whether the fusarium wilt-nematode complex was a known problem or not.

Foundation seed of Westburn 70 were released to certified seed growers in Oklahoma in 1970. Breeder seed will be maintained by the Oklahoma Agricultural Experiment Station, and small amounts will be furnished to qualified breeders upon request.

REGISTRATION OF LUTANA CICER MILKVETCH¹

(Reg. No. 11)

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'LUTANA' cicer milkvetch, *Astragalus cicer* L., was developed from P1-66515 introduced from Sweden in 1926. Its experimental designation was A-13107. One hundred twenty-seven open-pollinated spaced plants were selected for one generation for earliness of spring growth, rapid recovery after cutting, rapid rhizome spread, and uniformity of seed maturation. These plants were harvested for breeder's seed. This variety was cooperatively developed by the Bridger, Montana, Soil Conservation Service Plant Materials Center, the Montana Agricultural Experiment Station, and the Wyoming Agricultural Experiment Station and was released in 1970. The name Lutana is a contraction of the Latin words lutea (yellow) and montana (mountains). It is the only officially released variety of this species in the United States.

Lutana is a rhizomatous, decumbent, frost-tolerant variety adapted to high elevations. It performs well in wet areas with short growing seasons of 50 days or less. Lutana is also adapted to dryland areas which receive more than 38 cm (15 in.) of precipitation annually. It is more frost and moisture tolerant than alfalfa, but also performs well within the entire range of alfalfa adaptation. No occurrence of bloat has been reported from livestock grazing this plant. Its rhizomatous habit and low fertility requirements make it useful for soil and water erosion control on critical areas. A high percentage of hard seed are produced. It recovers more slowly than alfalfa after cutting. Forage production of Lutana has been slightly less than for well-adapted varieties of alfalfa, except in areas where frost damage or excess moisture reduces alfalfa yields.

The increase of Lutana is limited to one generation each of the following classes of seed: foundation, registered, and certified. The USDA, SCS Plant Materials Center at Bridger, Montana, will maintain breeder and foundation seed.

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REGISTRATION OF OTTER OATS¹

(Reg. No. 237)

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'OTTER' oats (*Avena sativa* L.), C.I. 8304, Minn. II-54-109, was developed and released by the Minnesota Agricultural Experiment Station. Otter resulted from a single F₆ plant selection from the cross 'Landhafer' 3/'Mindov'/'Hijara'/'Joanette' 4/2* 'Andrew' 5/'Rodney.' Otter has been tested in Minnesota Oat Variety Trials for 6 years, the Uniform Midseason Oat Per-

formance Nursery 3 years (1967 to 1969), the Uniform Early Oat Performance Nursery 2 years (1968 and 1969), and 1 year in the Uniform Northwestern States Oat Nursery (1969).

Otter is an early to midseason maturing, medium height, high yielding variety with good lodging resistance. It ranked first, fifth, and sixth for yield in the Uniform Midseason Oat Performance Nursery and first and third in the Uniform Early Oat Performance Nursery. The weight per hectoliter of Otter has been average or below, but its groat percentage is higher than may be expected from its test weight. It was acceptable in preliminary milling tests. The seed is white and fluoresces under ultra-violet light.

Otter is resistant to smut. It has resistance genes A, B, and D for stem rust but is not resistant to race 6AF nor 6AFH. It gives a susceptible to moderately susceptible (S-MS) reaction to crown rust in the Minnesota Buckthorn Nursery. It is susceptible to Septoria and to barley yellow dwarf virus.

Seed of Otter was increased by the Minnesota Crop Improvement Association and released to registered growers in 1970. South Dakota and North Dakota participated in the increase and release. Breeder seed will be maintained by the Minnesota Agricultural Experiment Station.

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REGISTRATION OF WALKEN WINTER OAT¹

(Reg. No. 238)

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'WALKEN' winter oat (*Avena sativa* L.), C.I. 8205, Ky. 64-9504, was developed by the Department of Agronomy, University of Kentucky, and released July 1, 1970. It originated from the cross S. 172 (CI 4897)/Ky. 56-302 (CI 7621). The cross was made in 1960. Head row selection was practiced through the F₄. Rogued progeny increases of a single F₄ plant constituted the released seed.

Description — Juvenile growth prostrate; plant midseason to late, many tillers, midtall (80 to 100 cm); culm large, stiff, glabrous at nodes, sheaths green, nonhairy; leaves wide, erect, margins slightly ciliate; peduncle large, straight, fully exerted; panicles equilateral, erect, midsize, compact, ovate, lower whorl of panicle branches arising at normal rachis nodes; rachis straight, usually eight nodes; branches short, ascending; spikelets numerous, usually two-flowered, separate by fracture; florets separate by disarticulation; glumes 15 to 20 mm long, 5 to 8 mm wide, nine-veined, light green, yellow at maturity; kernels slender, first lemma light red, very short (8 to 12 mm), glabrous, palea greyish-white; basal hairs absent; awns absent to few; second lemma awns absent, second floret rachilla segment glabrous, long.

Walken has been evaluated in regional nurseries since 1964. In these it has been outstanding for winter survival and lodging resistance. The variety was released in Kentucky to provide a winter hardy, lodging resistant winter oat that had potential for high forage yields as well as high grain yields. The name Walken [Wal(es) Ken(tucky)] was chosen in recognition of the importance of the plant introduction used in development of the variety. The Kentucky Agricultural Experiment Station will maintain supplies of breeder seed of Walken.

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