Registration of ‘Banner’ Hop

‘Banner’ (Reg. no. CV-23, PI 558759), a general-purpose hop (Humulus lupulus L.), was developed cooperatively by the Idaho, Washington, and Oregon Agricultural Experiment Stations and was jointly released by the stations in 1994 after large-scale commercial production and brewing evaluations. The major advantages of Banner over other general-purpose hop cultivars are its aroma characteristics, higher α-acid content, high yield potential, and resistance to crown die-out associated with hop downy mildew (caused by Pseudoperonospora humuli (Miyabe & Takah.) G.W. Wils.).

Banner was derived from seed of open-pollinated ‘Brewer’s Gold’, and it is a half-sister of ‘Aquila’ (3), ‘Eroica’ (2), and ‘Galena’ (1). In 1969, seed from this source was germinated and was repeatedly inoculated with spore suspensions of P. humuli. Surviving seedlings were planted in agronomic and quality observation trials in the Boise Valley in Idaho where Banner was tested as Idaho Selection I-43-11. From 1971 through 1980, Banner was evaluated in small experimental plots and in two 0.4-ha trials in the Boise Valley. During this time, the α-acid content usually ranged between 9 and 10%, with an average seedless hop yield potential of more than 2250 kg ha⁻¹. When it was grown in a 2-yr trial to determine its tolerance to Verticillium dahliae Kleb. in soil with previous applications of heptachlor (1,4,5,6,7,8,8-heptachloro-3a,4,7a-tetrahydro-4,7-methanoindene), Banner showed no deleterious effects from heptachlor or Verticillium.

A 0.8-ha commercial trial was established in the Yakima Valley in Washington in 1980 to provide hops for commercial production-scale brewing trials. From 1981 through 1986, this trial had an average seedless hop yield of 2260 kg ha⁻¹, with an average α- and β-acid content of 8.4 and 5.3%, respectively. Brewing trials suggested that Banner might be interchangeable with the aroma cultivar Willamette. Consequently, production was expanded in 1987 to 148 ha in the Yakima Valley and 65 ha in the Boise Valley. From 1989 to 1992, the average seedless hop yield of Banner in Washington was 2540 kg ha⁻¹, with an average α- and β-acid content of 10.2 and 5.5%, respectively. Banner exceeded the average Washington commercial hop yield by 30%, and Banner’s yield was 16% higher than the widely planted general-purpose hop ‘Yakima Cluster’. During the same period, the average yield of Banner in the Boise Valley was 2270 kg ha⁻¹, with an average α- and β-acid content of 10.7 and 5.6%, respectively. In Idaho, the average Banner yield was about that of ‘Late Cluster’. During the same period, the average yield of Banner in the Boise Valley was 2270 kg ha⁻¹, with an average α- and β-acid content of 10.7 and 5.6%, respectively. In Idaho, the average Banner yield was about that of ‘Late Cluster’. During the same period, the average yield of Banner in the Boise Valley was 2270 kg ha⁻¹, with an average α- and β-acid content of 10.7 and 5.6%, respectively.

Banner was selected based on its higher yield potential, high α-acid content, and high quality characteristics. Banner produces compact, ovoid, closed cones. Seedless cones are 24 mm in length and 132 mg in dry weight. The lupulin is golden-yellow. The average α-acid homologue composition is 56% humulone, 32% cohumulone, and 12% adhumulone. After 6 months of storage at room temperature, 50% or more of the original α-acid content in the dried compressed hops may be transformed into other compounds. This indicates the need for refrigerated storage of the dried hops. The average essential oil content is 2.5 mL 100 g⁻¹ of dried hop cones. The average content of the major essential oil components is 61% myrcene, 16% humulene, and 6% caryophyllene. No farnesene is present. The aroma of the hops is characterized as pleasant and hoppy, spicy, resinous, or leathery. Despite

Registration of ‘AC Rifle’ Winter Rye

‘AC Rifle’ winter rye (Secale cereale L.) (Reg. no. CV-16, PI 590948) was developed at the Semiard Prairie Agricultural Research Centre, Research Branch, Agriculture and Agri-Food Canada, Swift Current, SK, as part of the Canadian Rye Breeding Program. Canadian Reg. no. 3989 was issued for AC Rifle in October 1994 by the Plant Health and Plant Products Directorate, Food Production and Inspection Branch, Agriculture and Agri-Food Canada. AC Rifle is the first semidwarf winter rye cultivar registered for production on the prairies.

AC Rifle was derived from a crosses made in 1980 at Swift Current between ‘Puma’ and a semidwarf introduction from Poland, 2D-1125. It was developed using ear-to-row and mass selection techniques.

The F₂ generation was grown in 1981. Individual semidwarf F₂ plants were selected in 1982 and grown in a single-row nursery in 1983. Individual semidwarf plants were selected from the most uniform rows and grown in isolation while the remnant seed was harvested from these rows and used to establish replicated field trials in 1984. The isolation plot was rogued of tall plants, and certain rows were eliminated on the basis of frequency of tall plants. Selection continued for five successive generations until 1988, when the seed from the isolation plot was harvested, bulked, and entered into the Fall Rye Cooperative Test as RT152. After 2 yr of cooperative testing, tall plants were still persisting in the population. Pair matings were made between plants of semidwarf stature from RT152 in 1990 and seeded as single rows. In 1991, matings were made between plants of the most uniform rows and grown at Indian Head, SK, for seed increase. It was observed that three of the lines were more uniform than the rest in 1992 and 1993. The breeder seed increase derives from 1992 remnant seed of the three most uniform lines. Frequency of tall plants is 2 to 3%.

In 47 performance trials, AC Rifle outyielded ‘Kodiak’ and ‘Musketeer’ rye, but yielded less than ‘Prima’. The test weight of AC Rifle was significantly less (P < 0.05) than Prima and Musketeer, but greater than Kodiak. Time to heading was equal to Kodiak (159 d) and 2 d later than Prima. Maturity is 1 d later than Prima and 1 d earlier than Kodiak. Winter survival percentage was equal

References and Notes

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