REGISTRATION OF 'LIBERTY' HOP

'Liberty', a new female American noble-aroma hop (Humulus lupulus L.) cultivar (Reg. no. CV-18, PI 558869), was released for commercial production in Oregon, Washington, and Idaho in June 1991, following 5 yr of largescale agronomic and brewing evaluations. The major advantages of Liberty are medium-early maturity, aroma and quality profile similar to Hallertauer mittelfrüh, and good yield potential.

Liberty originated as seedling selection no. 8303-117 of cross no. 8303 made in 1983 at Corvallis, OR, between the colchicine-induced tetraploid female cultivar Hallertauer mittelfrüh (USDA accession no. 21397) and the downy mildew resistant male genotype 64035M (1). The permanent USDA accession no. 21457 was assigned to the selection in 1985, and Liberty has since been tested under this number.

Liberty is early in maturity (25–30 August in western Oregon). It is adapted to the major hop-growing areas of Oregon and Washington, but has performed below expectations in southern Idaho, due in part to soil problems at the experimental site. Because of its triploid (2n = 3x = 30) chromosome complement, Liberty produces few seeds even if grown in the presence of fertile diploid males. Quality and aroma characteristics are similar to those of the female parent, Hallertauer mittelfrüh. Liberty's genetic composition is 4/6 Hallertauer mittelfrüh, 1/6 unidentified German aroma hop, and 1/6 unknown.

Liberty has been tested in nursery plots near Corvallis since 1984 and in 1.2-ha commercial plots in the major hop-growing areas of Oregon, Washington, and Idaho since 1986. In commercial tests, Liberty averaged 1980 kg ha⁻¹ in Oregon, 1132 kg ha⁻¹ in Washington, and 809 kg ha⁻¹ in Idaho. Except for Idaho, these yields compare favorably with those of 'Willamette', the most widely grown aroma hop in these areas. Alpha- and beta-acids content averaged 4.2 and 3.4%, respectively, in Oregon, 3.3 and 3.3%, respectively, in Washington, and 2.9 and 3.1%, respectively, in Idaho. Cohumulone content ranged from 24 to 28%, slightly higher than that of the female parent.

The essential oil content of freshly dried cone samples of Liberty by steam distillation (2) ranged from 0.6 to 1.2 mL 100 g⁻¹, similar to that of Hallertauer mittelfrüh. The major hydrocarbons of the essential oil (myrcene, 37.4%; humulene, 37.4%; and caryophyllene, 10.7%) accounted for >85% of the total oil. Farnesene was either absent or present in only trace amounts. The ratio of humulene to caryophyllene averaged 3.49 during the 3-yr test period, comparable to that of Hallertauer mittelfrüh.

Liberty has a columnar growth habit with a characteristic head formation and sidearms =60 to 90 cm long. Most of the cones are found in the upper half of the plant; however, many flowers are produced in the lower portion.

Liberty is moderately resistant to hop downy mildew (Pseudoperonospora humuli (incited by various species)). During 5 yr of testing in both nursery plots and commercial scale agronomic and brewing evaluations, Liberty has remained free of major hop viruses over the past 5 yr.

References and Notes

We thank the Hop Research Council for financial support.

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REGISTRATION OF 'AU ROBIN' CRIMSON CLOVER

'Au Robin' crimson clover (Trifolium incarnatum L.) cultivar (Reg. no. CV-6, PI 558502) was developed for use in no-till, double-cropping systems and was released by the Alabama Agricultural Experiment Station, University of Alabama Agricultural Experiment Station, Auburn University, and the Auburn University Plant Breeding Unit in 1991 as AU Robin.

AU Robin is an early-maturing selection from two cycles of modified mass selection. Early flowering plants were selected from field plots of Dixie established at Shorter, AL, in 1983. Grown seed of each plant was germinated in the greenhouse and transplanted into maternal line rows, 10 plants per row, at the Auburn University Plant Breeding Unit, Auburn, AL, in the autumn of 1983. In the spring of 1984, rows exhibiting early flowering were selected and the pollinated seed was harvested from up to four flowering plants in the selected rows. Seed from the selected plant constituted a line, and was plated in rows for preliminary evaluation at the Auburn University Plant Breeding Unit in the autumn of 1984. In the spring of 1985, eight lines were selected for seed increase and further testing based on bloom date, dry matter yield, and quality. It was tested under the experimental designation AU 22-2 and released in August, 1991 as AU Robin.

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