Registration of Crop Cultivars

1261
crown rust caused by *Puccinia coronata* Corda F. sp. *festucae* Erikss. Rust-resistant plants were transferred to an isolated spaced-plant nursery and rogued to improve uniformity of maturity and appearance and increase seed yield.

Olympic is a leafy, moderately low-growing, persistent turf-type cultivar with a dark green color, medium texture, and medium density. Olympic has the good heat and drought tolerance characteristics of the improved turf-type fescues. It has moderately good resistance to crown rust, net blotch incited by *Helmintosporium dactyloides* Dreschs., and brown patch caused by *Rhizoctonia solani* Kuhn. Olympic has the ability to retain an acceptable green color at reduced N fertility levels. It also has very good color retention into late fall and early winter. Olympic has shown less iron chlorosis than most other tall fescues on high lime soils in California. This variety should be useful for medium to low maintenance turf in both full sun and in light to moderate shade in most regions where tall fescue is well adapted for turf use.

Breeder seed will be maintained by Pure-Seed Testing, Inc. Seed propagation of Olympic is limited to two generations of increase from breeder seed, one each of foundation and certified.

Application (number 8100168) has been made for U.S. Plant Variety Protection.

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Registration of Eroica Hop
(Reg. No. 8)

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'Eroica', a new hop (*Humulus lupulus* L.) cultivar was released for commercial production in Idaho at the end of the 1979 crop year. It was formally released by the Idaho Agricultural Experiment Station, the Oregon Agricultural Experiment Station, and the USDA-ARS in May 1982. Eroica is a sibling to 'Galena'. Both were obtained from seed set on open-pollinated 'Brewer's Gold' in 1968. The seeds were stratified and germinated in the spring of 1969, and the emerging seedlings subjected to repeated exposure by zoospores of *Pseudomonospora humuli* (Miy. and Tak.), G.W. Wils. which were designed to eliminate individuals with susceptibility to Hop Downy Mildew. In 1971 Eroica was designated as selection No. 34-5 in the Observation Block for selection of desirable agronomic and quality traits. In 1977, a 2.1 ha production block was planted to produce hops for commercial scale brewing trials.

In the Boise Valley, Eroica produces a large, late maturing bine with long laterals. Although growth is usually thrifty, both vegetative growth and cone yield may be reduced by timing the training too early. This indicates a photoperiodic response considered more typical of early than of late maturing hop cultivars. Eroica has a pale green bine with distinct lines of red pigmentation associated with the stout climbing hairs. Young leaves are a lighter, brighter green than comparable leaves of Galena or 'Clusters', but darker than those of 'Talisman'. Leaves resemble Talisman in being large, thin, and deeply lobed, and are less glossy and waxy than the leaves of Brewer's Gold or 'Bullion' Hop. The strobiles develop as tightly pointed, tapered, compact cones in moderately dense clusters. Within the strobile, the basal bracts are round with acuminate tips, but become ovate, then lanceolate toward the apex. The bracteoles become progressively smaller and inconspicuous acropetally, so that only the bracts are visible, imparting an unusually uniform tone of pale green color to the cone. The strig of seedless Eroica cones is small and highly condensed. Lupulin glands are yellow and abundant. The average weight of seedless cones is about 200 mg at 8 to 10% moisture.

Eroica exhibits exceptional vigor when grown on a 5.5 m trellis on a 2.1 x 2.1 m spacing, and is expected to yield well in the first crop year as well as subsequently. In 1979 and 1980, four new crops of Eroica (grown on a total area of 30.8 ha) produced an average of 1450 kg per ha. For both years the alpha acid content was 12.6% with an average production of 201 kg of alpha acid per ha. In 1980, the commercial production on 6.6 ha of mature Eroica averaged 2,480 kg/ha with 12.9% alpha acid, resulting in an average of 350 kg alpha acid per ha. Because of this high potential for alpha acid production, Eroica is regarded as an attractive extract hop, but in Idaho it should also be competitive simply as a source of hops. In the Boise valley, mature Eroicas should routinely produce 2,250 to 2,750 kg of hops/ha and 250 to 350 kg of alpha acid. Eroica has averaged less than Galena in alpha content of cones but will ordinarily surpass Galena in alpha acid production per unit area because of its superior yield of cones. Moreover, some brewers have indicated that Eroica has a potential use as a kettle hop. Eroica keeps well under refrigeration (< 2 C), but is less stable than Galena or Clusters at room temperature. Tests to date suggest a degree of storage stability intermediate to Galena and Bullion Hop. Conger proportion analysis by Nuclear Magnetic Resonance indicated the following percent composition of bitter acids: humulone, 51; columulone, 36; adhumulone, 13; lupulone, 35; colupulone, 56, and adlupulone, 11 (R.J. Molyneux, Chemist, USDA-ARS, WRRC, Albany, CA 94706).

Eroica has a fair degree of resistance to Hop Downy Mildew and to the potato strain of *Verticillium dahliae* Kleb. which attacks certain hop genotypes. Although it can become infected by such U.S. hop viruses as Prunus Necrotic Ringspot Virus (PNRSV), Hop Mosaic virus (HMV), and Hop Virus 24 (HV24) in mixed plantings, symptom expression has been minimal or absent (C.B. Skotland, Plant Pathologist, WSU, IAREC, Prosser, WA 99350).

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