Registration of Crop Cultivars

REGISTRATION OF CM 72 BARLEY1
(Reg. No. 150)

C. W. Schaller, J. P. Prato, M. J. Smith, and C. I. Chim2

'CM 72' barley (Hordeum vulgare L.), CI 15553, was developed at the Univ. of California, Davis. It is a composite of 240 F6 generation lines selected from the cross, 'California Mariout'4/ CI 1179/2*California Mariout*/'Club Mariout'/3'/CM 67'. Final selection of the individual lines was made in 1972. The experimental number for CM 72 during development was UCD 191.

CM 72 is the second backcross-derived strain released for production in California which has been derived from the original California Mariout cultivar. It differs from the earlier release, CM 67, by the addition of the M1, gene for resistance to powdery mildew, transferred from CI 1179. Cumulative additions to the recurrent parent, California Mariout, include resistance to powdery mildew (Erysiphe graminis DF sp. hordei Em. Marchal), tolerance to the barley yellow dwarf virus (Yd2 gene from CI 2376), tolerance to certain physiologic races of scald, Rynchosporium secalis (associated with the transfer of tolerance to the BYDV), and a white aleurone.

CM 72 is an early maturing, six-rowed, rough awned, springtype feed barley with short straw and medium-dense spikes. The kernels are large, with white aleurone and long-haired chaff. Except for kernel color and disease reaction, it is similar to California Mariout in all other characteristics and the only known difference from CM 67 is its reaction to powdery mildew.

In 22 location-year comparisons throughout the major barley producing areas of California, CM 72 yielded 5% more than CM 67, with a maximum difference of 19% at one location. This differential is attributed to the effects of powdery mildew on yield. In 12 of these tests, in which the recurrent parent, California Mariout, was included, yield increase of 32 and 35% over California Mariout were measured for CM 67 and CM 72, respectively; the major yield differential being attributed to tolerance of the latter cultivars to the BYDV and the slight differential between them (3%) to their differential mildew reaction.

CM 72 was released by the Univ. of California, Davis, in 1974. Its area of adaptation is similar to that of CM 67 and the recurrent parent, California Mariout, and is recommended for all areas where these varieties have been grown successfully.

Breeder seed will be maintained by the Dep. of Agronomy and Range Science, Univ. of California, Davis.

REGISTRATION OF GARFIELD AND TRACER DRY PEAS1
(Reg. No. 9 and 10)

F. J. Muehlbauer, V. E. Wilson, J. M. Kraft, and R. E. Witters3

Garfield (Reg. No. 9) (WA110-9) originated as a plant selection made in 1970 from PI 244104, a small-seeded line. The selection was evaluated for resistance to the pea root rot complex present in eastern Washington State. The complex includes Fusarium root rot caused by F. oxysporum f. sp. pisi (F. R. Jones) C. R. Kuehn. Preliminary tests for yield and resistance to the complex were conducted in 1972. Subsequent yield tests were conducted at four locations in 1973 and 1974. In the final 3 years of testing, Garfield had a yield advantage of 14% over the highest-yielding check.

Garfield is resistant to Fusarium wilt (F. oxysporum f. sp. pisi (Linf.) Snyd. & Hans.) race 1, a potentially serious disease of peas in the Palouse region, but it is susceptible to races 2 and 5.

Garfield is a field pea type that grows an average of 1 cm taller than Alaska. The vine habit of Garfield is indeterminate and nonbranching with straight internodes. Leaflets are alternate and slightly marbled with medium wax. The leaflet pairs are normal, nonclasping and slightly marbled. The flowers are white and usually borne singly or doubly on the peduncles. Pods are straight, blunt ended, and smooth with green cotyledons, and they weigh 22 g/100 seeds. Garfield flowers in the 14th node compared with the 12th node for Alaska. Because of the differing node and the tolerance to pea root rot, Garfield matures about 1 week later than Alaska. Garfield did not match Alaska in resistance to powdery mildew, (Erysiphe pisi) race 10, or seed bleach, or mechanical damage.

Tracer (Reg. No. 10) (WA1582) originated as a plant selection taken in 1964 from a mixed seed lot of Alaska originating from Canners Seed Corporation of Leavenworth, Washington. Preliminary tests for yield and resistance to the pea root rot complex were conducted in 1972. Subsequent yield tests were conducted at four locations in 1973 and 1974.

In those tests, Tracer had a yield advantage of 46% over the small-sieve (6.5 mm in diameter) 'Lilaska'.

Tracer is a field pea type that grows an average of 7 cm taller than Lilaska. The vine habit is indeterminate and nonbranching with straight internodes. Leaflets are alternate and medium wax and slight marbling. The leaflet pairs are normal, nonclasping and slightly marbled. The flowers are white and usually borne singly or doubly on the peduncles in triples with some doubles. The pods are blunt ended, and light green. The surface is smooth. The pods have four to five seeds, which are green smooth with a dull surface. They weigh about 22 g/100 seeds.

Tracer is resistant to Fusarium wilt race 1 but susceptible to races 2 and 5. Tracer has shown tolerance to pea root rot and the tendency to flower at the 13th node (compared with the 9th node for Lilaska) delay maturity about 1 week in comparison with Lilaska.

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Breeder and foundation seed will be maintained by the Washington State Crop Improvement Association under the supervision of the Dep. of Agronomy and Soils, College of Agriculture Research Center, Washington State Univ.; and USDA, Pullman, WA 99164.

3 Registered by the Crop Sci. Soc. of Am. Accepted 1 Dec. 1976.

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