

REGISTRATION OF GARFIELD AND TRACER DRY PEAS¹

(Reg. No. 9 and 10)

F. J. Muehlbauer, V. E. Wilson, J. M. Kraft, and R. E. Witters²

'GARFIELD' and 'Tracer' dry peas (*Pisum sativum* L.) were developed cooperatively by the ARS-USDA, and the College of Agriculture Research Center, Washington State Univ. They were released in 1976.

Garfield (Reg. No. 9) (WA110-9) originated as a large-seeded plant selection made in 1970 from PI 244104, a predominantly small-seeded line. The selection was evaluated in 1971 for resistance to the pea root rot complex present in eastern Washington, which includes *Fusarium* root rot caused by *Fusarium solani* (Mart.) Appel & Wr. f. sp. *pisi* (F. R. Jones) Snyder & Hans., *Pythium* root rot caused by *Pythium ultimum* Trow. and *Rhizoctonia* root rot caused by *Rhizoctonia solani* Kuehn. Preliminary yield tests were made in 1972, and subsequent yield tests were conducted at four locations in 1973 and 1974, and at five locations in 1975. In the final 3 years of testing, Garfield had a yield advantage of 14% over the highest-yielding check, 'Alaska'. Garfield is resistant to *Fusarium* wilt (*F. oxysporum* Schlecht. f. sp. *pisi* (Linf.) Snyder & Hans.) race 1, a potentially destructive 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 7 cm taller than Alaska. The vine habit of Garfield is indeterminate and nonbranching with straight internodes. Leaflets are dark green and slightly marbled with medium wax. The leaves have two leaflet pairs. The stipules 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 medium green with six to seven seeds. Seeds are dark green, round, 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 difference in flowering node and the tolerance to pea root rot, Garfield matures about 1 week later than Alaska. Garfield did not differ from Alaska in resistance to powdery mildew, (*Erysiphe polygoni* DC) seed bleach, or mechanical damage.

Tracer (Reg. No. 10) (WA1582) originated as a pureline selection taken in 1964 from a mixed seed lot of Alaska 'New Line' originating from Cannors Seed Corporation of Lewisville, Idaho. 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 and at five locations in 1975. In those tests, Tracer had a yield advantage of 46% over the small-sieve (6.5 mm in diameter or less) check 'Lilaska'.

Tracer is a field pea type that grows an average of 16 cm taller than Lilaska. The vine habit is indeterminate and nonbranching with straight internodes. Leaflets are medium green with medium wax and slight marbling. The leaves have two leaflet pairs. The normal stipules are nonclasping and slightly marbled. The flowers are white and usually borne on the peduncles in triples with some doubles. The pods are straight, blunt ended, and light green. The surface is smooth and dull. The pods have four to five seeds, which are green, round, and smooth with a dull surface. They weight about 15 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, one of the most yield-limiting diseases of peas in the Palouse region. Tolerance to pea root rot and the tendency to flower at the 13th node (compared with the 9th node for Lilaska) delay maturity of Tracer by about 4 days when compared with Lilaska.

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 by the ARS-USDA, Pullman, WA 99164.

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² Research geneticist and research agronomist, ARS-USDA, Pullman, WA 99164; research plant pathologist, ARS-USDA, Prosser, WA 99350; and assistant professor, Dep. of Agronomy and Soils, Washington State Univ., Pullman, WA 99164, respectively.