
RELEASE OF NEW *Phaseolus vulgaris* GERM PLASM RESISTANT TO
WISCONSIN'S BEAN ROOT ROT DISEASE COMPLEX

D. J. Hagedorn and R. E. Rand
Department of Plant Pathology
The University of Wisconsin
Madison, Wisconsin 53706

This is an announcement of the development and release of a third bush bean (*Phaseolus vulgaris*) with resistance to the important Wisconsin bean root rot disease complex (*Fusarium solani* f. sp. *phaseoli*, *Pythium* spp., *Rhizoctonia solani*)! The new bean has been designated Wis. (RRR) 46; it was not named because it is intended only for use as parental material in bean breeding programs.

Wis. (RRR) 46 was derived from a 1972 cross between resistant single plant selections WH 71-2 and WH 71-27. These had been chosen from bean lines from the Oregon and New York State Experiment Stations tested in our bean root rot disease nursery at the University of Wisconsin Hancock Experimental Farm in 1971. Following rigorous field selection in 1973, the best single plant selection was crossed with another resistant bean line (# 3) which was similar genetically to WH 71-2. Resistant progenies from this cross were hybridized with the cultivar State Half Runner, which had shown resistance to Wisconsin's bean root rot complex. Since then, superior plants were selected repeatedly and tested individually until 1975 when they were bulked.

The average root rot disease index for Wis. (RRR) 46 in the field for 1976 through 1978 was 23 compared to 78 for the susceptible control. The level of resistance is considerably and consistently higher than for our 1977 releases Wis. (RRR) 77 and 83. Calculated average yields for 1977 and 1978 were 22,737 lbs./A for our new bean versus 2,187 lbs./A for the susceptible control.

Wis. (RRR) 46 has a moderately sized, vigorous bush with many branches. The many pods are borne near the center of the plant and quite low. Maturity is later than typical Tendercrop types. Leaves are of moderate size. Foliage and pods are dark green in color. Pods are medium long, straight, smooth and oval. The plant has a green hypocotyl and white flowers. Seeds are white and of regular shape but are smaller than normal.

Wis. (RRR) 46 has not been tested for reaction to an array of bean diseases other than Wisconsin's root rot complex. However, individual laboratory studies with *Fusarium solani* f. sp. *phaseoli* and *Pythium* spp. have shown that Wis. 46 has resistance to each of these pathogens - good confirmation of our field tests.

Seeds of this new bean are being offered in small amounts free of charge. The amount of seed will depend upon the number of requests received by March 30, 1979.

Should this new bean be used as germ plasm in your bean breeding program, it is requested that this fact be acknowledged in the literature accompanying any future cultivar release involving Wis. (RRR) 46 in its parentage.