

New Soybean Strain Resistant to Soybean Cyst Nematode: PI 416.762

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ABSTRACT

Anand, S. C. 1982. New soybean strain resistant to soybean cyst nematode: PI 416.762. Plant Disease 66:933-934.

Of the 2,153 soybean plant introductions screened against races 3 and 4 of the soybean cyst nematode, PI 416.762 was resistant. PI 416.762 is a black-seeded strain belonging to maturity group II. It was introduced from Japan under the designation 'Akanida.'

Additional key words: *Glycine max*, *Heterodera glycines*

Since the discovery of the soybean cyst nematode (*Heterodera glycines* Ichinohe) in the United States (3), isolation of soybean lines resistant to this organism has received much attention. Ross and Brim (2) found four introductions that exhibited a high level of resistance to field

populations of the soybean cyst nematode (SCN). These included PI 90763, PI 84751, Ilsoy, and Peking. Epps and Hartwig (1) reported that PI 88788, PI 89772, PI 87631-1, Cloud, Columbia,

Peking, PI 84751, and PI 90763 were resistant, based on the presence of few cysts on their roots.

Although many strains have been added to the world soybean collection during the past 12 yr, recorder reactions to SCN are incomplete. The present study was conducted to isolate new sources of resistance to two prevalent races of SCN.

MATERIALS AND METHODS

Plant introductions not previously evaluated for SCN reaction were obtained from Dr. R. L. Bernard, USDA, ARS, U.S. Regional Soybean Laboratory, University of Illinois, Urbana. A total of

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Table 1. Reaction of PI 416.762 and other soybean strains to soybean cyst nematode races 3 and 4

Strain	Number of plants				
	Immune ^a	Highly resistant	Resistant	Moderately susceptible	Susceptible
Essex	23	267
Forrest	26	262
PI 88788	...	183	4
PI 416.762	...	5	1
PI 416.762 (Repeat)	...	6

^a Immune = 0 cysts, highly resistant = 1-5 cysts, resistant = 6-10 cysts, moderately susceptible = 11-30 cysts, and susceptible = 30+ cysts.

2,153 introductions was screened (PI 317.332-PI 424.244). Six seeds from each strain were exposed to SCN. Each seed was sown in an 8-cm pot containing 20-25 cysts of SCN races 3 and 4 per 100 g of soil (equivalent of 32-40 eggs and larvae per gram of soil). The plants were grown in the greenhouse at 26.5 C (\pm 2 C).

After 30 days, the roots were exposed by lifting the soil ball from the pot and shaking it gently to free the soil without losing the cysts. The white females on the roots of each plant were counted. Thirty-six pots containing Essex, Forrest, and PI 88788 were placed on each table as checks. The strains were classified as follows: 0 (no) cysts, immune; 1-5 cysts,

highly resistant; 6-10 cysts, resistant; 11-30 cysts, moderately susceptible; and 30+ cysts, highly susceptible.

RESULTS AND DISCUSSION

All viable strains except PI 416.762 were susceptible to SCN. The reaction of the checks and PI 416.762 are presented in Table 1.

It is evident that PI 416.762 carries a high degree of resistance to races 3 and 4 of SCN. PI 416.762 is an introduction from Japan under the designation 'Akanida.' It is a soybean in maturity group II with an indeterminate growth habit. It has purple flowers, tawny pubescence, and black seed coat. A

limited quantity of seed can be obtained for breeding purposes from me or from Dr. Bernard.

ACKNOWLEDGMENT

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LITERATURE CITED

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