

## Evaluation of Potato Genotypes Against Early Blight

Early blight caused by *Alternaria solani* (Ellis & Martin) Jones and Grouff is of common occurrence wherever potatoes are grown. In India, it is the most common and destructive disease of this crop and is reported to cause upto 40 per cent yield losses (Srivastava and Sahai, 1996). The disease appears at any stage of the crop and its epidemics occur in cool and warm areas unlike late blight which is severe in cool and wet areas. The young and maturing plants suffer the most and die prematurely.

Pushkarnath (1969) reported that though the varieties differ with respect to resistance, while varieties completely immune to the disease have not been found, variability from resistant to very susceptible types, has however been established. Rich (1983) opined that early cultivars tend to be highly susceptible and it is likely that several new cultivars resistant to early blight will soon be released. Hence, an attempt was made to screen the varieties against this dreaded disease.

Thirty potato genotypes procured from the All India Coordinated Research Project on Potato, were grown following usual agronomic practices during kharif 1995, 1996 and 1997 in deep black soils at the Main Research Station of the University of Agricultural Sciences, Dharwad employing randomised block design with three replications. The genotypes were screened under natural conditions against early blight employing 0-9 scale proposed by Mayee and Datar (1986).

Of the 30 genotypes evaluated (Table 1) four genotypes viz., H-222, JV-62, JX-123 and JX-214 revealed disease score 1 during all the three years of testing and thus were found highly resistant to early blight. In addition 21 genotypes having disease score >1.00 and <3.00 were categorised into resistant group and remaining 5 with disease score >3.00 and <5.00 moderately susceptible category. However, the check genotype Kufri Chandramukhi showed only moderate susceptibility with the highest disease score of 4.33.

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Table 1. Reaction of potato varieties to early blight

| Varieties           | Disease score |         |         |      | Disease reaction |
|---------------------|---------------|---------|---------|------|------------------|
|                     | 1995-96       | 1996-97 | 1997-98 | Mean |                  |
| 1. JEB/A-26         | 3             | 5       | 3       | 3.67 | MS               |
| 2. H-222            | 1             | 1       | 1       | 1.00 | HR               |
| 3. JV-33            | 3             | 3       | 3       | 3.00 | R                |
| 4. KBD              | 3             | 5       | 3       | 3.67 | MS               |
| 5. JX-115           | 1             | 3       | 3       | 2.33 | R                |
| 6. JX-118           | 1             | 3       | 1       | 1.67 | R                |
| 7. JV-67            | 3             | 3       | 3       | 3.00 | R                |
| 8. MS-85-163        | 3             | 3       | 3       | 3.00 | R                |
| 9. 85-P-621         | 1             | 3       | 3       | 2.33 | R                |
| 10. K. Badshah      | 3             | 5       | 5       | 3.67 | MS               |
| 11. 83-P-121        | 3             | 3       | 3       | 3.00 | R                |
| 12. MS/83-279       | 1             | 3       | 3       | 2.33 | R                |
| 13. PS/M-75         | 3             | 5       | 3       | 3.67 | MS               |
| 14. JX-161          | 1             | 3       | 3       | 2.33 | R                |
| 15. 83-P-12         | 1             | 3       | 3       | 2.33 | R                |
| 16. 83-P-142        | 1             | 3       | 3       | 2.33 | R                |
| 17. JEX/6-166       | 1             | 3       | 3       | 2.33 | R                |
| 18. K. Chandramukhi | 3             | 5       | 5       | 4.33 | MS               |
| 19. 85-P-718        | 1             | 3       | 3       | 2.33 | R                |
| 20. JV-62           | 1             | 1       | 1       | 1.00 | HR               |
| 21. JX-214          | 1             | 1       | 1       | 1.00 | HR               |
| 22. 83-p-108        | 3             | 3       | 3       | 3.00 | R                |
| 23. JI-8857         | 3             | 3       | 3       | 3.00 | R                |
| 24. MS-82-717       | 3             | 3       | 3       | 3.00 | R                |
| 25. MS-84-864       | 1             | 3       | 3       | 2.33 | R                |
| 26. JT-44           | 1             | 3       | 1       | 1.67 | R                |
| 27. PJ-376          | 1             | 3       | 3       | 2.33 | R                |
| 28. JX-123          | 1             | 1       | 1       | 1.00 | HR               |
| 29. 85-P-670        | 1             | 3       | 3       | 2.33 | R                |
| 30. MS-82-638       | 3             | 3       | 3       | 3.00 | R                |

MS = Moderately Susceptible

HR = Highly Resistant

R = Resistant