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Molecular characterization of urdbean (*Vigna mungo*) germplasm related to resistance against urdbean leaf crinkle virus

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ABSTRACT. Urdbean (*Vigna mungo*) is an important pulse crop grown worldwide. Urdbean leaf crinkle virus (ULCV) is a pathogen of urdbean found in Pakistan that causes huge losses in yield. Forty urdbean varieties/lines were screened against the virus under field conditions during spring season 2009. None of the lines appeared to be highly resistant or resistant. On the basis of a 0-5 disease rating scale and disease severity index, genotypes varied significantly in their reaction to ULCV. Four lines (M-6206, IAM-382-15, IAM-133, and Mash-1) were moderately resistant, eight were rated as moderately susceptible, and 21 as susceptible; the remaining seven lines were highly susceptible. RAPD analyses revealed an extensive amount of variation, which could be used for cultivar identification. Genetic differentiation among urdbean genotypes was similar to the field screening data. The varieties 6065-3 and 6206 were highly susceptible and moderately resistant, respectively, to ULCV under

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field conditions, confirmed by the RAPD analysis. These varieties were the most diverse varieties in the similarity matrix (67.2%), while the varieties IAM-382-9 and 07M003 were the most similar (98.4%). This information will help in the recognition of available resistant germplasms that can resist this disease and will be utilized for urdbean improvement in Pakistan.

Key words: Urdbean; ULCV; RAPD analysis; Germplasm

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