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Short Communication

SCREENING OF SUNFLOWER GERMPLASM FOR RESISTANCE TO *ALTERNARIA* LEAF SPOT

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Leaf spot of sunflower caused by *Alternaria helianthi* has been considered as a potentially destructive disease of sunflower all over the world (Allen *et al.*, 1983; Balasubramhanyam and Kolte, 1980; Reddy and Gupta, 1977). Yield losses as high as 80 per cent have been reported under favourable weather conditions in India due to this disease (Agrawath *et al.*, 1979; Balasubrahmanyam and Kolte, 1980). Though destructive levels of *Alternaria* leaf spot have been reported in India, no concerted efforts were made to screen the available germplasm systematically to locate the field resistence, as no resistant sources are available against this disease both in cultivated as well as in related wild species of *Helianthus* (Morris *et al.*,1983). Significant genetic variability to *Alternaria* leaf spot has, however, been reported in sunflower (Agrawath *et al.*, 1979; Carson, 1985; Nagaraju *et al.*, 1992a). The usefulness of the available level of resistance in reducing the loss caused by this disease, therefore, is of great importance. Thus, studies were carried out to screen the available sunflower germplasm in phased manner against this disease under field conditions.

One-hundred and ninety-six sunflower germplasm accessions selected from the Germplasm Unit, GKVK, Bangalore were evaluated against *Alternaria* leaf spot under natural epiphytotic conditions in the *kharif* season of 1991 along with the susceptible check, Morden. The selected germplasm entries were sown during third week of July 1991 in a randomised complete block design with two replications. Each entry was grown in a single row of 3 m length. Row to row and plant to plant spacings were 60 cm and 30 cm, respectively. *Alternaria* leaf spot severity was monitored in

the field from germination till 50 per cent grain filling stage of the crop. Final disease severity was assessed when most plants in a particular genotype were at 50 per cent grain filling stage. Disease severity was recorded on the basis of per cent leaf area affected using 0-9 scale (Nagaraju *et al.*, 1992b).

The germplasm lines varied in disease severity levels and none of the lines could be identified as immune or highly resistant to this disease. Thirty six accessions could, however, be categorised as field resistant with less than 5 per cent disease severity. These lines included accession nos. 1381, 1389, 1391, 1394, 1421, 1424, 1425, 1431, 1439, 1440, 1442, 1445, 1447, 1454, 1456, 1462, 1467, 1473, 1474, 1483, 1484, 1485, 1497, 1499, 1500, 1514, 1515, M 4908-5, M 733-4-2, M 744-8-4, M 733-10-3, M 733-10-4, M 733-10-6, BLC 15-7-1-1, BLC 15-7-1-3 and RLC 30-11-9-4.

The resistance of these lines needs to be confirmed under field and laboratory conditions. Similar results were obtained when another set of 100 genotypes was tested by Nagaraju *et al.* (1992a). This suggested that possibilities exist for utilizing these field resistant lines, in the absence of absolute resistance to the disease, in crop improvement programme and disease management.

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