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Evaluation of Watermelon *Citrullus lanatus* Germplasm for Leafminer *Liriomyza* spp. Resistance

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Abstract

Leafminer *Liriomyza* spp. are among the important insects infesting vegetables in Sudan. Two species of leafminer, *L. trifolii* Burges and *L. sativae* Blanchard, were reported in Sudan. The adult insects lay their eggs inside watermelon leaves where they hatching, and during the feeding process the larvae make mines inside the leaf tissues. The high number of mines leads to leaf drying. Sixty-eight local watermelon accessions, which include fifty-eight *Citrullus lanatus* accessions, seven *C. colocynthus* accessions and three *C. lanatus* var *colocynthoides* accessions in addition to three commercial cultivars, were subjected for evaluation in winter 1999. Moreover, seven selected accessions (5 *C. lanatus* & 2 *C. colocynthus*) from season 1998 and two commercial were also evaluated in winters 1999. The evaluation was repeated in winter 2000 using other eight accessions (3 *C. lanatus* & 5 *C. colocynthus*) in addition to two commercial cultivars. All accessions were evaluated depending on natural infestation under field conditions. The plants were evaluated during different growing stages. The parameters used to evaluate these accessions were mean of resistance and percentage of infestation. Mean of resistance were measured using a scale of 1–5 where 1 is resistant and 5 is highly infested. Percentages of infestation were scored by measuring the percentage of infested leaves from total counted leaves .

The evaluation of sixty-eight accessions revealed that *C. colocynthus* accessions were resistant (1.3–1.7), while *C. lanatus* and *C. lanatus* var *colocynthoides* accessions ranged between highly susceptible to moderately resistant (2.4–5.0). The evaluation of selected accessions for two seasons proved obviously that *C. colocynthus* accessions were significantly different from all other evaluated accessions and was accompanied also by low level of infestation.

Keywords: Leafminer, resistance, watermelon