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 hatch, 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