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SUSCEPTIBILITY OF LENTIL (*LENS CULINARIS*) POPULATIONS TO THE PEA APHID *ACYRTHOSIPHON PISUM*

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ABSTRACT

The susceptibility of six lentil (*Lens culinaris*) genotypes, i.e., three commercial cultivars ('Samos', 'Dimitra' and 'Elpida') and three landraces (ILL-590, FLIP 03-24L and FLIP 02-1L), to the pea aphid *Acyrtosiphon pisum* was assessed under laboratory conditions. In a multi-choice arrangement set-up, young potted lentil seedlings with four expanded leaves were placed on the corners of a regular pentagon in a randomized complete block design. Cohorts of young pea aphid adults had access to all different tested plants and their numbers on the plants of each genotype were recorded after 24 hours. No significant differences were found in aphids allocation among the different lentil genotypes suggesting no differences in potential antixenosis traits of the tested plants. In another set of laboratory trials, potential antibiosis and/or tolerance traits of the different lentil genotypes were assessed. The intrinsic rate of population increase (rm) of the pea aphids on the different lentil genotypes and the seedling's survival as well as increase in fresh biomass weight were used as indices of antibiosis and tolerance, respectively. Young potted lentil seedlings with four expanded leaves were individually infested with two nymphs of the pea aphid and after one and two weeks the population density of the aphids as well as the survival and fresh weight of the surviving plants were recorded. The highest rm value of the pea aphid was recorded on the FLIP 03-24L landrace, whereas the estimated rm values on the other lentil genotypes were similar and significantly lower. The lowest survival percentage (~40 %) of lentil seedlings was recorded for the FLIP 02-1L landrace, whereas that of the young seedlings of the other tested genotypes was similar ranging from 55 to approx. 80 %. The highest increase of the fresh biomass of lentil seedlings was recorded for the 'Samos' cultivar for which survival (~65 %) was among the highest values recorded, whereas the respective population build-up of the pea aphid was among the lowest recorded ($rm = 1.47$ days⁻¹). Based on the above indices we conclude that, among the cultivars/landraces tested, the 'Samos' cultivar could be considered the most resistant to the pea aphid. Further experiments are required to be able to identify underlying antibiosis and/or tolerance traits.

Key words : *Lens culinaris*, pea aphid, *Acyrtosiphon pisum*

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