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Chemical and Genetic Control of Fusarium Wilt in Chickpea and Their Effects on Stand Establishment Under Tropical Conditions

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The production of chickpea (*Cicer arietinum* L.) is greatly affected by soil-borne diseases with *Fusarium oxysporum* f. sp. *ciceris* (FOC), it being one of the most important pathogens on this crop. FOC is the causal agent of damping off in the pre- and post-germination, as well as root and collar rot in seedlings and mature plants. Seed treatment and the selection of *Fusarium* wilt resistant lines are two important strategies employed in disease management. Seeds of the susceptible Cicero cultivar were treated with the following fungicides: Carbendazim, [Carbendazim + Thiram], Captan, Iprodione, [Iprodione + Thiram], [Metalaxyl-M + Fludioxonil], Pecicuum, Procymidone, and tolylfluanid. Physiological seed quality and field emergence were employed as evaluation criteria. The best seed treatments were tolylfluanid and procymidone. In another study, a trial was carried out in an area naturally infested with FOC. Forty-one accessions from the International Center for Agricultural Research in Dry Areas (ICARDA), Aleppo, Syria, were evaluated under center pivot irrigation system. The accession 'ILC 1929' was employed as the susceptible control. There were significant differences among accessions in relation the collar root incidence (% of symptomatic plants). The line '35C FLIP03' displayed the largest plant stand and also had the highest yield per plot (418 g), confirming its resistant reaction to FOC. The genotype 'WR 315' was highly susceptible, producing only 61 g per plot. The line '35C FLIP03' might represent important breeding material for the development of *Fusarium* wilt resistant cultivars with adaptation to the tropical and subtropical regions of Brazil.

Keywords - *Cicer arietinum* L., *Fusarium oxysporum* f. sp. *Ciceris*, fungicides