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ABSTRACT

The present work aimed to studyeffect of intercropping system treatments of calendula plants *Calendula officinalis* and fenugreek plants *Trigonella foenum-graecum* on vegetative growth characters, yield components, Pigments (Beta-carotene and xanthophylls) production of calendula plant, total alkaloid content (trigonelline) of fenugreek plant, and some chemical compositions as well as competitive relationships (land equivalent ratio (LER) and aggresivity (A) of calendula and fenugreek plants. The used intercropping system treatments were (1C+1F), (1C+2F) (2C+1F), (2C+2F), (1C+3F), (3C+1F), (1C:1C+1F) and (1C:+2F) of calendula and fenugreek, respectively. Moreover, solid planting system of calendula and fenugreek was used as control. The obtained results referred to that using intercropping system treatment of the first side of the first ridge planted by calendula plants and the other side of the same ridge and the first side of the second ridge planted by fenugreek (1C+2F) system resulted in the highest values of fresh and dry weight of ray flowers per plant of calendula and pigments content (Beta carotene mg /gm dry ray flowers). In addition, using intercropping system treatment of the first side of the first ridge planted by calendula and first side of the second one planted by calendula and the other side of the second one planted by fenugreek (1C:1C+1F) system resulted in the highest values of pigments content (Xanthophylls mg /gm dry ray flowers) of Calendula plants)and total alkaloids content (as trigonelline base) of fenugreek seeds. Whereas, using intercropping system treatment ofone side of the first ridge planted by calendula plants and the other side of the same ridge and the both sides of the second one planted by fenugreek plants (1C+3F) system resulted in higher values of number of pods per plantand weight of seeds per plant under Fayoum Governorate conditions.