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Article

Effect of mixing ratios and spraying with microelements on the growth and yield of forage for a mixture of oats and clover

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ABSTRACT

A field experiment was carried out in the fields of the Agricultural Research Station-College of Agriculture, University of Basra, during the winter season of 2021-2022. To study the effect of seeding rates of both oats and Egyptian clover with mixing percentages of 100% oats, 75% oats + 25% clover, 50% oats + 50% clover, 75% clover + 25% oats, 100% clover as the first factor and microelements at a concentration of 1500, 3000 and 4500 ppm as a second factor. The time for spraying with micro-elements was in the branching stage, 7-10 days after the first spray and 7-10 days after the second spray. The experiment was carried out in a factorial experiment with three replications, according to a randomized complete block design, RCBD. Three cuttings were taken during the crop's growth period. The height of the oats and clover plants, the number of oat tillers, the number of clover branches, the weight ratio of leaves to tillers and stems, and the amount of green and dry forage were measured. The results of the study showed that the different ratios of mixing oats and clover crops contributed to the production of the studied traits; 50% of oats + 50% of clover in the second cutting recorded the highest yield of green fodder (66.84 tons ha^{-1}) and dry fodder yield (22.37 tons ha^{-1}). As for the effect of concentrations of microelements, the level of 4500 ppm achieved superiority in all growth characteristics of all cutting, and the highest yield was recorded in green fodder (65.57 tons ha^{-1}) and dry forage (22.44 tons ha^{-1}) at the second cutting. 50% oats + 50% clover at the level of 4500 ppm gave the highest yield for green fodder (69.66 tons ha^{-1}) and dry (24.81 tons ha^{-1}).

Keywords: Mixture; Spraying; micro-nutrients; green fodder; *Avena sativa*; Clover.