## البحث الرابع

**الملخص باللغة الإنجليزية:**

Two field experiments were conducted at the farm of the Faculty of Agriculture, Demo, Fayoum University, Egypt, during 2013 and 2014 growing summer seasons to study the effect of planting dates, foliar microelements mixture rates and weeding regimes for Sohag 1 sesame variety. A split- split-plot arrangement in complete block design with three replications was used in both seasons. Two planting dates *i.e.,* April,20 and May,20 were allocated in the main plots, four foliar microelement mixture rates, i.e. 100, 200, 300 and 400 g $fed^{-1}$ were distributed in the sub-plots, while four weeding regimes i.e., hand -hoeing, Stomp Extra 45.5% CS, Amex 48% and weedy check were occupied the sub - sub plots. The most important findings could be as follows: Planting sesame on April, 20 significantly exhibited higher values of plant height and stem diameter, comparable to May, 20. Such trend was reversed with weeds biomass and weed control efficiency%, where higher values were recorded with May, 20 planting date. Higher figures of seed yield attributes e.g. capsule No $plant^{-1}$, capsules weight $plant^{-1}$, seed yield $plant^{-1}$ and seed index, were attained due to planting on April, 20. Similar trends were noticed for seed yield, oil seed % and oil seed yield, where higher values resulted from planting on April, 20. Higher values of plant height and stem diameter were recorded due to the highest rate of foliar microelements mixture (400 g $fed^{-1}$) and the values seemed to reduce with decreasing the rate. On the contrary, weeds biomass and weed control efficiency% almost exhibited higher values with the lowest rate of foliar microelements mixture (100 g $fed^{-1}$) and tended to reduction as the rate was increased. Higher figures of seed yield attributes e.g. capsules No $plant^{-1}$, capsules weight $plant^{-1}$, seed yield $plant^{-1}$ and seed index, were attained with the highest rate of foliar microelements mixture (400 g $fed^{-1}$) and the values seemed to gradual reduction with decreasing the rate. Similar trends were noticed for seed yield, oil seed% and oil seed yield, where higher values resulted from 400 g $fed^{-1}$ rate of foliar microelements mixture and the values seemed to reduce with decreasing the rate. The adopted weeding regimes exerted highly significant effects on all of the assessed growth, seed yield attributes and seed and seed oil yields parameters for sesame crop and both weeds biomass and weed control efficiency as well. Furthermore, hand hoeing practice achieved higher figures of sesame growth and yield parameters and monetary returns, however, hand hoeing is laborintensive, expensive and strenuous practice._