البحث الخامس

الملخص باللغة الإنجليزية:

Two field experiments were conducted during 2014/15 and 2015/16 seasons to study the effect of three mineral nitrogen fertilizer levels *i.e.*, 60, 90 and 120 kg N/fed and four biofertilization (without biofertilization, rhizobactrein, phosphorein and dual inoculation) and three foliar spraying levels with humic acid (water as a control, 12 and 24 g/l) on yield and its attributes of sugar beet variety Kawemira. The experimental design was a split-split plot in RCBD with three replications where mineral nitrogen fertilizer, biofertilization and foliar spraying with humic acid were allocated in the main, sub and sub-sub plots, respectively.

Results indicated that mineral nitrogen fertilizer and biofertilization with foliar spraying with humic acid had significant positive effect on yield, yield components and quality traits. The heaviest root fresh weight (2.17 kg/plant), root yield (39.77 t/fed) and gross sugar yield (7.13 t/fed) (fed= feddan= 4200 m^2) were obtained by the highest level of mineral nitrogen fertilizer (120 kg N/fed), with application the mixture of rhizobactrein+ phosphorein as biofertilization with the highest concentration of foliar sprayed with humic acid (24 g/l).

The results of regression analysis of yield and its attributes clarified that, there were four traits *i.e.* sucrose %, root yield, root length and root fresh weight in the first season, while in the second season, the same traits except root length were significantly ($P \leq 0.001$) contributed to variation in gross sugar yield.