

**SUGAR BEET YIELD AND ITS COMPONENTS AS
AFFECTED BY SOWING DATE, MINERAL
NITROGEN AND BIO-FERTILIZATION**

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ABSTRACT

A field experiment was conducted at Sakha Research Station, Kafr El-Sheikh Governorate, during 2006/2007 and 2007/2008 seasons to study the influence of three sowing dates (15 September, 15 October and 15 November), three mineral nitrogen fertilizer rates (30, 60 and 90 kg N/fed) and two sources of bio-N fertilizer (*Azospirillum*, *Bacillus* N-fixing bacteria) in addition check treatment on sugar beet yield and its components. Each sowing date included 9 treatments, which were the combinations between three mineral nitrogen fertilizer rates and three bio-N fertilization treatments. A randomized complete block design with three replications was used. A combined analysis between sowing dates over the two seasons was done.

Results revealed that root length and root yield were significantly increased with early sowing on 15 October as compared to the other sowing dates. Sowing dates of 15 September and 15 October significantly increased root diameter, root fresh weight/plant and yields of top and sugar as compared to the late sowing date.

Results showed, also, that root diameter and yields of top and sugar were significantly increased with adding 90 kg N/fed, while adding 60 or 90 kg N/fed gave the same significant for the other traits under study as compared to 30 kg N/fed.

Inoculating seeds with bio-fertilizers significantly increased most traits under study, except leaves fresh weight/plant, however, inoculating seeds with *Azospirillum brasilense* surpassed *Bacillus polymyxa* in top yield.

Root diameter and top yield were significantly increased with the interaction effect between sowing date (15 September) and adding 90 kg N/fed as compared to the late sowing date (15 November). The different combinations between nitrogen fertilizer rates (60 or 90 kg