3.12 H.M. AL-SAYED¹, M.A.EL-HAWARY², M.K.K AWAD¹
¹Sugar Crops Research Institute, Agricultural Research Center, EG – 12619 Gizaa
²AL Azhar University, EG – 11787 Cairo

INFLUENCE OF BORON SOURCES ON YIELD AND QUALITY
OF SOME SUGAR BEET VARIETIES

Influence de sources de bore sur le rendement et la qualité de quelques
variétés de betteraves sucrières / Einfluss von Borquellen auf Ertrag und
Qualität einiger Zuckerrübensorten

ABSTRACT

Two field experiments were carried out at El-Nubaria region, Alexandaria
Governorate conditions, Egypt in 2010 / 2011 and 2011 / 2012 seasons to study the
effect of four boron sources i.e. control (tap water), nitrate Balancer at the rate of 2
Liter / feddan, borax at the rate of 2 kg / feddan and nitrate Balancer at the rate of 1
Liter / feddan plus borax at the rate of 1 kg / feddan on yield and juice quality of three
sugar beet varieties i.e. Pamella, Top poly and Fareda. The experiments were laid out
in split plot design.

The obtained results showed that boron sources had a significant effect on all studied
traits, except potassium percentage and sodium percentage in both seasons. Sugar
beet plants sprayed with nitrate Balancer gave the highest values of root yield /
feddan, sugar yield / feddan, TSS%, sucrose% and α amino nitrogen as compared
with other treatments in both seasons.

Results showed clearly that sugar beet varieties significantly differed in root yield /
feddan, sugar yield / feddan, TSS% and sucrose% in both season, on other hand
insignificantly differed in K%, Na% and α amino nitrogen% in both season. Sugar
beet variety Fareda gave the highest value of root yield / feddan, sugar yield /
feddan, TSS% and sucrose% compared to other varieties in both seasons.

The obtained results observed clearly that sprayed sugar beet variety Fareda by
nitrate Balancer gave the highest values of root yield per feddan, sugar yield per
feddan, total soluble solids%, sucrose percentage and α amino nitrogen percentage
as compared with all other treatments in both seasons.