



EFFECT OF DRIPPER DISCHARGE ON PRODUCTION AND CHARACTERISTICS OF CABBAGE AND ITS NITROGEN CONTENT UNDER MAKKAH REGION CONDITIONS

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ABSTRACT

A two years (2002/2003, 2003/2004) study was conducted at Hada Al-Sham Agriculture Research Station, Makkah Region (King Abdulaziz University) to determine the effects of three different dripper discharges (0.5, 1, and 2 gph) on cabbage production, characteristics of its part and its nitrogen contents in whole plant and its parts. Results show a significant increase in Copenhagen variety production (38.5 tone/ha) as compared to Bronzweek Variety (30.2 tone/ha). Also, the dripper discharge significantly affected the cabbage production, characteristics of head, stem, root or leaves area, whereas cabbage production and characteristics of all plant parts (head, stem, root and leaves area) were reduced with the increase in dripper discharge more than 0.5 gph, however, the reduction was not significant between discharges of 1 and 2 gph. The cabbage production were 44.3, 29.7 and 28.9 tone/ha for dripper discharges of 0.5, 1 and 2 gph, respectively). In addition, the interaction between season and variety had only significant effects on root length. Also, there were significant effects for the interaction between dripper discharge and season on cabbage production and root length. Results also showed that first

season (2003) produced cabbage plant significantly higher than the second season (2004) in nitrogen content for both whole plant (2.72% and 2.45% for first and second season, respectively) and head (3.63% and 2.72% for first and second season, respectively). Also, Copenhagen variety significantly outweighs Bronzweek variety on nitrogen content in whole plant (2.88% and 2.30% for Copenhagen variety and Bronzweek variety, respectively), leaf (2.69% and 2.16% for Copenhagen variety and Bronzweek variety, respectively), and stem (2.72% and 2.08% for Copenhagen variety and Bronzweek variety, respectively). On the other hand, the increase in dripper discharge more than 0.5 gph resulted significant reduction in nitrogen content for whole plant (3.10%, 2.44% and 2.22% for dripper discharges of 0.5, 1 and 2 gph, respectively) and its parts (head, stem and leaves) whereas the dripper with less discharge (0.5 gph) outweigh the higher discharge drippers (1 and 2 gph). However, the increase of dripper discharge from 1 gph to 2 gph had only significant reduction in the nitrogen content of head. The results also show that interaction between season and variety had only significant effects on nitrogen content in whole plant. There were also significant effects for the interaction between season and drip discharge on nitrogen content of whole plant and its leaf.

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