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To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

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بالرسالة صفحات لم ترد بالاصل

YIELD AND QUALITY OF GLOBE ARTICHOKE GROWN BY DIFFERENT PROPAGATION METHODS IN ASSIUT

By

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B. Sc. Agriculture (Vegetable Crops), Assiut University, 1997

THESIS

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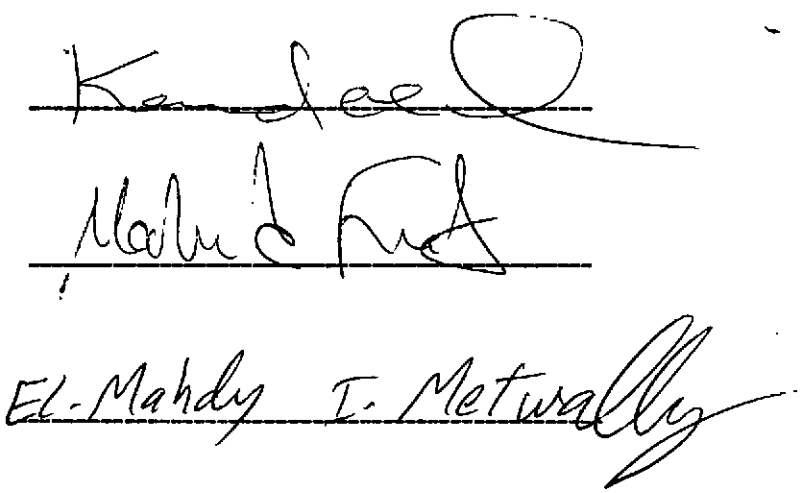

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ABSTRACT

Difficulties associated with the commercial propagation are crucial factor in optimizing the production of the artichoke (*Cynara Scolymus*). There have been no reports on the use of transplants in production of artichoke in Assiut. In the present study, yield and quality of artichoke propagated with transplants or offshoots or stumps and grown at three different intra-row spaces (60, 80 and 100 cm) were assessed in 1999/2000 and 2000/2001. The analysis of variance indicated that plant stand was not affected by intra-row spacing. However, a significant reduction occurred in the stand of artichoke grown by transplants as compared to the offshoots and stumps. Neither the propagation methods nor the intra-row spacing significantly affected the earliness of the head production and the average head weight, length and diameter. On the other hand, stumps and offshoots derived plants produced larger number of heads than transplants. Increased number of heads were obtained from growing at 60 or 80 cm when compared with 100 cm. Covariance analysis, based on use of the plant stand as covariate, suggested that no significant difference existed in the number of the produced heads between off-shoots and transplants. However, stumps derived plants remained producing more heads than both offshoots and transplants. It is concluded that artichoke production in Assiut could be improved via enhancing stand establishment of the transplants and planting at closer intra-row spaces (60 cm) than that is usually used (80 - 100 cm).

Shreen Huseen Ali. 2002. Yield and quality of globe artichoke grown by different propagation methods in Assiut. M. Sc. Thesis, Assiut University, Egypt.

INTRODUCTION

The globe artichoke (*Cynara scolymus* L.) is a vegetable and medicinal plant. It is native to the central and western Mediterranean region (Welbaum, 1994). The artichoke was carried to Egypt 2000 to 2500 years ago (Ryder et al. 1983). About 5.4% of the world production of the artichoke is from Egypt where 7017 feddan were grown in 1995* (ATUT report, Ministry of Agriculture, 1997). The "globe" refers to the immature flower head or capitulum. It consists of the bracts, the choke (hair-like immature florets), the enlarged receptacle (called also the bottom) and portion of the floral stem. The edible parts are the fleshy base of the outer bracts, the inner bracts, and the bottom.

Artichoke is a popular vegetable in Italy, Spain and France. It was carried to the United States of America by the French and the Italian immigrants in the mid- to late-19th century (Ryder et al., 1983). The artichoke, as a vegetable, is consumed in several ways. It may be eaten after being steamed or boiled. Then bracts dipped in mayonnaise, drawn butter or any other sauce. The globe bottom may be eaten in the same way as the bracts. Also it could be stuffed. The heart (small whole head) may be marinated, frozen or battered and fried. In addition, the artichoke has several medicinal values as certain extracts may have beneficial effects on gastro-intestinal activity, blood-clotting time, capillary resistance and heart activity. Artichoke extracts have also neutralizing effect on certain toxic substances.

In Egypt, the artichoke production is mainly in the Delta area, especially, El-Beheara and El-Giza. The artichoke cultivar "Balady" was introduced into Assiut through the Agricultural experimental station of

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* ATUT report ,Ministry of Agriculture , 1997

Assiut University during the sixties by El-Murabba who was the first to study the artichoke production under Upper-Egypt conditions (El-Murabaa, 1968). There has been an increasing demand observed on the artichoke by the consumer in Assiut. This has recently attracted the attention of researchers to optimize its production in this area (Abdalla and Aboul-Nasr, 1995; Aboul-Nasr, 1995).

Although the artichoke is a perennial plant, it is usually replanted annually in Egypt. This is because of the substantial yield decline after few years of the farm maintenance and the epidemic incidence of artichoke diseases. The artichoke is commercially propagated with the division of old plants. Usually stand performance is low when this propagation material is directly planted in the field. Use of transplants to replant the ingeminated-hills is recommended to reduce the extent of the head uniformity disruption and yield reduction (Hassan, 1991).

Transplants may be established as a propagation method to enhance the plant stand and overcome other problems associated with division methods of old plants. Ensuring a high percentage of plant-stand and optimizing plant density are important factors for enhancing the artichoke production (De Vos, 1992). Little information is available on these factors of cultural practices especially for the artichoke production in Assiut. The objective of the present study was to investigate the plant stand, earliness, head yield and the head weight and size of the artichoke propagated by transplants comparing with traditional direct plant division culture when grown at three different in-row planting spaces.