

ABSTRACT

Manal Mohamed Attia El-Seidy. Effect of Some Pre and Postharvest Treatments on Quality of Sweet Corn, Unpublished Doctor of Philosophy, Ain Shames Univ., Fac., of Agric., Dept. of Horticulture, 2006.

The present study was undertaken to investigate some planting methods for producing early sweet corn yield with high quality through early cultivations, i.e., under the cool weather conditions. In addition, this study was conducted to determine the optimum harvest date of sweet corn ears using physical and chemical characters, heat unit system and the storability for each harvest date from the day after silk emergence (DAS). In addition, a storage experiment was conducted to maintain the quality of ears during storage.

A preliminary experiment was performed at the laboratory to find out the most effective seed priming method for improvement of seed germination under relatively cool weather. It was found that PEG 6000 at 400 g/l for 6 hrs was the best for seed germination. The obtained results indicated that cultivation of sweet corn plants under plastic tunnels produced the earlier ears by 12-14 days regardless of transplanting or direct seeding methods. Seed priming with PEG increased early and total yields. As for determining of the optimum harvest date for sweet corn, it was found that picking at 24 and 25 days after silking emergence (DAS) was the optimum harvest date for GSS 9377 F₁ and Endeavor F₁ hybrids, respectively. The heat units expressed as degree-days were 1215.4 and 1350.4 for Endeavor F₁ and GSS 9377 F₁ hybrids, respectively.

Regarding the storage experiment the results showed that holding the sweet corn ears at 0°C with stretch film maintained the visual quality for longer period compared to PE film or non-wrapping.

Key words: Sweet corn; *Zea mays*; Priming; Planting methods; Optimum harvest time; DAS; Heat unit system; Storage; Wrapping film.

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