

Kanchana Tatha 2009: Seed Quality, Storability and Subsequent Growth and Yield of Sweet Corn Hybrid a Affected by Harvesting Date. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Assistant Professor Jutamas Romkaew, Ph.D. 113 pages.

Yield and seed quality of sweet corn hybrid as affected by harvesting date were studied. Sweet corn hybrid seed SK0001 was produced by cross-pollinated between SCP50 as female and SS51 as male inbred. The experiment was arranged as a randomized complete block (RCB) with seven storage periods, 4 replications. The seeds were harvested at 23, 28, 33, 38, 43, 48 and 53 days after silking (DAS). The results showed that sweet corn hybrid SK0001 reached the physiological maturity and had the suitable harvesting at 38 and 48 DAS. Moreover, ear and seed yields, germination and vigor as determined by accelerated aging (AA) increased as harvesting date increased. In addition, seed quality, storability and subsequent growth and yield of sweet corn hybrid as affected by harvesting date were conducted. Split-split plot design was arranged with 4 replications in this experiment. Seven storage periods were 0, 2, 4, 6, 8, 10 and 12 months as main plot. Three storage conditions consisted of 10 °C- 45 % RH, 20 °C - 45 % RH and room temperature as the sub plot. Seven harvesting times were 23, 28, 33, 38, 43, 48 and 53 (DAS) as sub-sub plot. The results revealed that germination percentage and vigor as determined by AA increased, while total sugar and reducing sugar content gradually declined during seed development. After 12 months storage, germination and vigor as determined by AA of seeds harvesting at 48 DAS had still more than 90 and 85 %, respectively. Longer storage periods, higher seed deterioration occurred. As electrical conductivity and malondialdehyde content increased, germination and vigor as determined by AA decreased. Sweet corn seed storage at 10 °C- 45 % RH and 20 °C - 45 % RH had higher seed quality, storability and fresh ear yield than those of room temperature.

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Thesis Advisor's signature