

Pronpan Srithong 2012: Effect of Storage Condition on Seed Quality and Biochemical Changes of Sweet Corn. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Assistant Professor Jutamas Romkaew, Ph.D. 100 pages.

Effect of storage condition on seed quality and biochemical changes of sweet corn were studied. Two sweet corn varieties; SK0001 and SS1226 were stored at 10 °C- 45 % RH, 20 °C - 45 % RH and room temperature for 12 months. The results revealed that SS1226 had germination, vigor as determined by accelerated aging (AA) and field emergence higher than SK0001. After 10 months storage, germination and vigor as determined by AA of SS1226 had still more than 90 and 85 %, respectively. Longer storage periods and 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 and storability than those of room temperature. The relationship between seed quality and malondialdehyde was found that malondialdehyde increased as germination, germination energy, vigor as determined by AA and field emergence decreased, whereas electrical conductivity increased. In addition, SK0001 and SS1226 were accelerated for 0, 3, 6, 9 and 12 days. It was found that germination and field emergence decreased, while electrical conductivity and malondialdehyde increased. The relationship among malondialdehyde with germination, electrical conductivity and field emergence of SK0001 had correlation coefficient (r) -0.858**, 0.976** and -0.878** and SS1226 had correlation coefficient (r) -0.924**, 0.933* and -0.919**, respectively. Therefore, malondialdehyde content used to determine seed deterioration of sweet corn.

Student's signature

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