ABSTRACT

THE PERFORMANCE COMPARISON OF FOUR PARENTAL SELF SEEDING CULTIVARS WITH THREE DESCENT CROSS POLLINATION

By

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The general plant breeding objective is to improve plant's properties both in quantity and quality (Jumin, 2008). The plant breeding is mainly purposed to for commercial commodity such as sweet corn. Sweet corn is one of horticulture commodities favored by people and possesses high commercial value. Sweet corn is favored for its sweet taste. The vegetative and generative properties of sweet corn are expected to improve by means of plant breeding. The conducted breeding plant method is self and cross pollinations. This difference is important since the breeding plant method of cross pollination is different with self pollination. The difference method of pollinations influences the genetic and population structures. These research objectives are to find out: (1) the difference characteristics of parental self seeding and descent self seeding cultivars; (2) vegetative and generative characteristics of parental self seeding and descent cross pollination self seeding cultivars correspond to commercial standards; (3) *broad sense* genetic and heritability variance; the characteristics that are inherited by the sweet corn cultivar.

This research uses randomized group design. Ata are analyzed using analysis of variance and mean separation based on honestly significant difference test with 5% level. The genetic variance ($\pm^2$ g) and *broad sense* heritability (h^2BS) is estimated using Hallauer and Miranda math models. *Boxplot* analysis is conducted to find out the difference of parental self seeding and descent cross pollination self seeding cultivars corresponding to commercial standards.

The results show that: (1) all vegetative characteristics of parental self seeding cultivars differ with descent cross pollination self seeding cultivars and this is indicated by plant height parameter, cob position, and leaf count, and the descent cross pollination self seeding cultivar is homogenous, (2) both parental and descent self seeding cultivars has met the commercial standards, and this is indicated by characteristics of cob numbers, female flower numbers, cob diameter, cob length, and sucrose content by *boxplot* analysis, (3) both vegetative and generative characteristics of parental and descent self seeding cultivars can be inherited, and it is indicated by the plant height and relative cob position characteristics.

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