Screening of Habanero Peppers to Reduce Production Cost
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Introduction

Peppers are an important vegetable and spice crop grown in the United States and worldwide. They are used to add flavor, color to foods, dried, pickled, and eaten fresh. The use of peppers in meal preparation to add flavor and color to foods is increasing in popularity in the United States. Though peppers may not make the list of top important crops in Washington, it fills the passionate hearts of few Columbia Basin farmers. Habanero peppers (*Capsicum chinense*) traditional crop grown in Mexico is a self-pollinated plant whose floral structure facilitates emasculation and pollination. The production of habanero seed is expensive and very laborious. To reduce labor costs and increase production efficiency, breeding for easy cleaning and destemming has been evaluated for peppers.

Objective

Our objective is to breed habanero peppers for smooth skin, easy destemming, and cleaning to reduce the labor costs.

Materials and Method

During early spring 2015, habanero pepper and super mini sweet pepper seeds were planted in 0.025 m flat plug trays (8 x 16) and placed in the greenhouse. Pro-mix biofungicide was used as planting medium. Two to three seeds per cell were seeded at about 0.64 – 1.27 cm deep. Ten days later the seedlings were thinned leaving one seedling per cell. A constant temperature of 22–25°C was maintained in the greenhouse.

In early May pre-emergent herbicides (Treflan and Stealth) were applied to the field and rotovated to control weeds. Using transplanter peppers were transplanted with a spacing of 0.5 x 0.76 m. The hybrid was self-pollinated, fertilized with its own pollen, to inbreed desired qualities.

During September 2016, the plants were screened for smooth skin, easy picking, and cleaning. This procedure was done every year until desired traits were selected.

Results and Discussion

During fall 2016, each plant was screened for desirable traits. Breeding lines were discarded for either being dented or hard to destem.

The trays were watered everyday. Florikan (15-5-15) fertilizer was applied during planting. The pollen from super mini sweet pepper was crossed with habanero peppers in summer and peppers (hybrid) were collected in fall.

The pepper hybrids were cut along the edges, placed in the cloth bag and dried in the oven at 49°C. After drying the seed was collected and labelled. During spring 2016, the collected seed was seeded in the greenhouse and the seedlings were transplanted in the field.

This procedure was repeated for four years at one growing season a year to produce smooth skin, easy destem and clean traits. Finally, after four generations in 2019 we produced hybrids with desirable traits.

The hybrid which was produced reduce labor cost for growers since the hybrids were smooth, easy to destem and clean.

Conclusion

• The hybrids produced through our breeding project reduce labor cost and increase production efficiency for growers.

• Habaneros produced were smooth, easy to wash and destem.

• The left over peppers from breeding program were donated to field of grace. Nearly, 3000 pounds of peppers were donated last year.

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