

CHAPTER I

INTRODUCTION

1.1 Background problem and significance of the study

Melons (melon, muskmelon, cantaloupe) was a plant family *cucurbitaceae*, that can adapt and grow well in hot and dry areas, with full sun light throughout the day. With sweet flavor, a good smell and prize, melons are in high demand on the market. Galia muskmelon (*Cucumis melo* L. var. *reticulatus* Ser.) is a popular melon, with yellow skin and have green or orange flesh, fragrant and sweet. It was developed by Zvi Karchi, an Israeli breeder, and was released in 1973 (Karchi, 2000). In 2021, it was reported that Thailand had 480.78 kilogram of melon seed imports, worth 4 million baht (The Office of Agricultural Regulation, 2021). Seeds are most imported, because at present most of Thai farmers prefer to grow commercial melons with F_1 hybrid provided high productivity, with some outstanding characteristics and consistency in various aspects. However, hybrid seeds are expensive, and they need to buy seeds every season. If the major melon growers in Thailand can produce their own seeds, they will be able to reduce seed costs significantly. The production of hybrid seed required a good parent line that have the desired characteristics for the market such as fruit peel color, pulp color, mesh, slip, sweetness, and weight, etc. Inbred line extraction from existing commercial varieties that can be produce using self-pollination at least 6 - 8 generations continuously to get high genetic stability. Therefore, the objective of this research is to select the parent line to create a hybrid population.

1.2 Research objectives

1.2.1 Inbred line selection of galia melon original varieties from F_3 hybrid to F_6 hybrid to create inbred line.

1.2.2 Combining ability test using half-diallel cross method to produce hybrid.