Introduction

Squash is important horticultural crop worldwide, but there has been relatively little research directed to describe yield components and improve productivity in this species. Recently, the importance of using *Cucurbita* seeds for vegetable oils, snackseeds and pharmaceutical purposes has began to increase (Loy, 2004).

Squashes are generally divided into two groups. One group is the summer squash, which have soft skin and are eaten when young and immature while the other group is the winter squash which can be stored after harvest, during winter, because they have hard, protective shells (Robinson and Walters, 1997).

Understanding the nature of gene action is required to improve squash characters through suitable breeding programs designed to increase productivity and improve quality. In addition, the manifestation of heterosis has attracted the attention of both geneticists and plant breeders since long time ago. However, the relative magnitude of the different types of genetic effects would indicate the breeding method which should be followed. On the other hand, the relationship between characters is also important, since the improvement of one character may cause simultaneous change in other characters.

The objective of this study was to identify genetic parameters, which are required for successful hybrid production and breeding programs of squash, by using half diallel crosses. The information obtained from this study could be very useful for genetic improvement of important characters in *Cucurbita* species.