

## Meiotic behavior as a selection tool in silage corn breeding

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**ABSTRACT.** In breeding programs, commercial hybrids are frequently used as a source of inbred lines to obtain new hybrids. Considering that maize production is dependent on viable gametes, the selection of populations to obtain inbred lines with high meiotic stability could contribute to the formation of new silage corn hybrids adapted to specific region. We evaluated the meiotic stability of five commercial hybrids of silage corn used in southern Brazil with conventional squashing methods. All of them showed meiotic abnormalities. Some abnormalities, such as abnormal chromosome segregation and absence of cytokinesis, occurred in all the genotypes, while others, including cytotoxicity and abnormal spindle orientation, were found only in some genotypes. The hybrid SG6010 had the lowest mean frequency of abnormal cells (21.27%); the highest frequency was found in the hybrid P30K64 (44.43%). However, the frequency of abnormal meiotic products was much lower in most genotypes, ranging from 7.63% in the hybrid CD304 to 43.86% in Garra. Taking into account the percentage of abnormal meiotic products and, hence, meiotic stability, only the hybrids CD304, P30K64, SG6010, and P30F53 are recommended to be retained in the breeding program to obtain inbred lines to create new hybrids.

**Key words:** Silage corn; Meiosis; Hybrids; Breeding