

Abstract

The present invention relates to breeding of crop plants. It is specifically suitable for breeding of colony varieties or cultivars of self-pollinating and frequent-cross-pollinating plants. A female group is hybridized with a male group to produce colony varieties. The female group is produced as follows: Pairs of parental plants with different desired characteristics are hybridized to produce F1, and pairs of F1 are then hybridized to produce a segregation population. The individual plants in this segregation population or their self-crossed descendants in the early segregation generations will constitute the female group. The male group consists of homozygous breeding lines, varieties, or heterozygous plants in the segregation generations or individual plants that are produced in a similar manner to the production of the female group. The process of breeding colony varieties includes 5 phases: hybridization, self-crossing for stabilization, characterization, grouping assortment and formation of a colony. The colony varieties also possess features of the conventional varieties---uniformity, stability and peculiarity. Farmers can reserve their seeds for the next planting, and seed companies may explore further development based on stock seeds. The colony varieties have good adaptability, high yield and strong resistance to pests and diseases. Colony variety breeding has less reliance on breeders' experience and thus even farmers can do the breeding. In addition, 11 cases for breeding colony varieties in various crop plants and their performance in the production are cited in detail for demonstration.