

Advances in the genetic improvement of the Lima bean in Brazil

Avances en el mejoramiento genético del frijol Lima en Brasil

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Lima bean (*Phaseolus lunatus* L.) is an important species to Brazil, especially to the Northeast region, and presents high genetic variability. Considering the availability of Lima bean genotypes deposited in the Germplasm Bank from Federal University of Piauí, which present potential to be used in breeding programs, efforts have been done to obtain cultivars with desirable traits, such as determined growth, uniformity of maturation, and short cycle. However, we are also developing cultivars with indeterminate growth habit to be intercropped with landraces corn, but being productive and resistant to diseases. Firstly, genotypes presenting determined growth habit and short cycle were selected at the Department of Plant Sciences from University of California, Davis (USA) were used in the biparental crosses with landraces from Brazil, Argentina, Africa, and Mexico. Currently, we are evaluating, in the experimental field from Department of Plant Science, Federal University of Piauí, Brazil, six populations with determined growth habit, in F₆ generation, and five populations with indeterminate habit, in F₄ generation. In Brazil, the selection of parents focuses on growth habit, resistance to diseases (anthracnose) and commercial standard of seeds. We used three genotypes resistant to anthracnose and with indeterminate growth habit, and three accessions with determined habit, large white seeds, and where populations in F₄ generation have been advanced by the Bulk method. We expect to select genotypes with desirable traits to the crop ideotype for the development of improved cultivars.

Keywords: *Phaseolus lunatus*, plant breeding, plant architecture, anthracnose resistance, commercial standard of seeds.

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