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Morphological diversity analysis of *Sechium edule*- An underutilized crop

Jyothi Jain and Manohar S H
Jain University, India

Chayote, *Sechium edule* (Jacq.) Swartz, (Chow-chow) belongs to the family Cucurbitaceae. It is an underutilized fruit; however it is gaining popularity as a food crop due to its inherent quality. Chayote is highly cross-pollinated, which is main cause of variations existing in different region. It is native of tropical America and humid tropical region of Mexico, but cultivated extensively in India (Meghalaya, Manipur, Mizoram, Nagaland, Sikkim, Andhra Pradesh, Tamil Nadu, Karnataka and Kerala). Chayote genus appears to have enormous potential for genetic resources. Diverse morphology is seen with regard to its form, size, shape and surface texture. Phenotypic characterization is the first step in the description and classification of genetic resources. 88 chayote landraces from 12 states across India were collected and evaluated for fruit related traits. In analyzing genetic diversity among populations, principal component analysis (PCA) was used. This multivariate analysis programme determines the variables contributing to variation. The percentage of variation explained by the first six components were 26.48%, 21.08%, 16.11%, 8.18%, 6.59% and 4.78% respectively. Seven clusters were formed, mainly related to variations in fruits length, width, diameter, weight, reticulation, spine distribution, spine density and longitudinal furrow depth. The cumulative variation was found to be maximum in case of length of spines. These morphological characteristics thus demonstrates high genetic diversity of the crop. Since the growth of these crop is restricted to a limited area across the world, it is worthwhile to preserve the genetic diversity of these landraces.

Biography

Jyothi Jain has completed her MPhil and currently pursuing Doctoral studies from Jain University, Bangalore, India. Current research focuses on genetic diversity studies and phytochemical analysis of underutilized crops. Her main research interests are in the field of molecular biology and production of value added secondary metabolites.

jyothi.parmar@gmail.com