

**Screening of Low Bitterness Bitter Gourd (*Momordica charantia*) Parental Lines
based on Low Calcium Contents and Other Morpho-physio and Nutritional
Attributes
ABSTRACT**

The bitter taste of *Momordica charantia* due to its high level of calcium content limits people from consuming it, although it has enough various beneficial nutrients. Parental line evaluation is prerequisite for any desired improvement activities through breeding. In this regard *M. charantia* parental lines were evaluated based on bitterness (high Ca content) and morpho-nutritional attributes to augment additional value and opportunity to be commercialized. Field and laboratory experiments were carried out for three open-pollinated *M. charantia* varieties (V1: GW-105; V2: Leckat 921 microgreen and V3: Japan Long-Evergreen) to screen low bitterness parental lines based on low calcium contents and other morpho-nutritional qualities, targeting to generalize this important vegetable crops for all types of consumers from child to older age. The experiment was arranged in Randomized Complete Block Design (RCBD) with 3 replications. From the overall results of the study, Variety 2 showed better quality for numbers of fruits per plant, fruit weight (g), moisture content (%), chlorophyll content (mmol/m²), stomatal conductance (mmol/m²s) and nutrients content such as calcium (Ca), nitrogen (N), magnesium (Mg) and iron (Fe). Variety 3 had good quality for morphological parameters like plant height (cm), numbers of leaves per plant, leaf area (cm²), fruit length (cm), phosphorus (P), potassium (K), aluminium (Al) and copper (Cu). Variety 1 had the highest values only for number of branches per plant and amount of sodium (Na) content. After that, Variety 2 was identified for having lowest calcium (Ca) contents compared to the other two varieties. Thus, Variety 2 was selected as better parents to hold good promise for hybridization based breeding programs for varietal improvement in obtaining low bitterness bitter gourd but rich in other nutrient contents.