

Utilization of elite cowpea [*Vigna unguiculata* (L.) Walp] genotypes in the preparation of *Papad* and storage study

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Potential of twelve elite cowpea [*Vigna unguiculata* (L.) Walp] genotypes were studied based on their good functional properties and sensory scores five (T-2, MS-5, MS-7, MS-6, C-152 (Control)) genotypes were selected and used in the preparation of cowpea *papad*. *Papad* making were studied for quality characteristics such as, water uptake (50 ml), pressing property (soft), total yield (ten), diameter of *papad* before and after frying (from 16-27.3 cm), expansion (3-5 %) and grand weight (55-85g). The correlation co-efficient (r) between functional properties and quality of *papad* characteristics were showed significant difference. *Papad* developed out of five cowpea genotypes MS-5 showed highest scores of 8.3, 8.4, 8.0, 7.5, 8.0, and 8.0 for appearance, texture, colour, taste, flavour, and overall acceptability, respectively and statistically there was a significant difference among the genotypes in sensory attributes. Shelf life study of *Papad* was done for three best rated (sensory scores) genotypes, viz., C-152, MS-5 and MS-6. Samples were drawn on zero, 30th and 60th days and analyzed for various sensory quality parameters and microbial counts viz., total bacteria, yeast and fungi were estimated for two month of storage period. *Papads* were well accepted even after storage period and microbial load was within the acceptability range.

Key words : Cowpea seeds, Quality characteristics, Sensory parameters, Microbial study

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INTRODUCTION

Papad is a ready to prepare snack food item with thin wafer like product prepared from a variety of ingredients and is liked very much by population of India. Nowadays, it is gaining international recognition and is termed as India's unique contribution to international menu. Normally black gram (*Phaseolus mungo* L.) dhal is used in the preparation of *papad*. Cowpea [*Vigna unguiculata* (L.) Walp] is gaining popularity because of its good taste and high nutritional value and low cost pulse. Per hundred grams of cowpea contains, moisture (13.4g), protein (24.1g), energy (323Kcal), fat (1.0g), crude fibre (3.8g), carbohydrate (54.5g), calcium (77mg), iron (8.6mg), phosphorus (414mg), oxalic acid (9.0mg) and phytic acid (185 mg) per 100g of edible part (Gopalan *et al.*, 2007). Along with the nutritive value, it is also essential to test the acceptability and culinary quality of newer varieties. Because, most of the people prefer the pulses which have shorter cooking time and better taste. Therefore, analysis of elite genotypes for their nutritional quality will provide characteristics and interactions of proteins in food systems. Their genetic variations will influence processing, preparations and quality attributes of

foods. Hence, the present study was undertaken to evaluate the utilization of elite cowpea [*Vigna unguiculata* (L.) Walp] genotypes in the preparation of *papad* and storage study.

RESEARCH METHODOLOGY

Twelve elite cowpea (T-2, MS-5, IC-202778, MS-7, IC-243353, KBC-2, GC-3, IC-259084, MS-6, C-152 (Control), IC-219607, and MS-4) genotypes were procured from MRS Hebbal Bangalore and studied for functional quality. Among the twelve elite cowpea [*Vigna unguiculata* (L.) Walp] genotypes five genotypes (T-2, MS-5, MS-7, MS-6, C-152(Control)) were selected for *papad* making based on their sensory attributes and functional properties. These were cleaned for dust particles and milled in a commercial flour mill. The flour was passed through 60 mesh sieve and stored in air tight containers at room temperature (~28° C) until used. Refined groundnut oil, common salt, puffed rice, spices (black pepper), *Papad kara*, green chilly, and curry leaves were used.

Papad dough was prepared by mixing 80 parts of cowpea flour with 10g puffed rice, 5 parts of common salt and weighed amounts of coarsely hand-pounded spices [*Papad kara* (2.5g),