

CONSUMER PREFERENCE AND SENSORY ACCEPTABILITY OF MI-2 CHILI PODS (*Capsicum annum*) CULTIVATED WITH *Mimosa pigra*-BASED BIOFERTILIZER

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This research investigated how organic farming practices using *Mimosa pigra*-based biofertilizers affect the sensory quality of MI-2 chilli pods, with a focus on enhancing understanding of sustainable agriculture's role in shaping food quality and maintaining the cultural significance of chilli peppers in Sri Lankan cuisine. The biofertilizer was formulated by chopping *Mimosa pigra* aerial parts during the vegetative stage and allowing them to decompose in a pit for six months. The experiment consisted of four treatments, each replicated nine times, with 10 plants per pot. The treatments included: (1) *Mimosa pigra* alone (MP), (2) *Mimosa pigra* combined with calcium carbonate (MP + C), (3) *Mimosa pigra* combined with inorganic fertilizer (MP + IF), and (4) a negative control (NC) without fertilizer. Pots were prepared using a 2:2:1 mixture of garden soil, goat manure, and sand. Data were analysed using ANOVA to compare sensory ratings across treatments, followed by post-hoc tests, with significance set at $p < 0.05$. Results were presented as mean scores with 95% confidence intervals. A sensory evaluation, conducted with 50 participants using a 5-point hedonic scale, assessed taste, colour, texture, odour, and overall acceptability. Chilli pods treated with MP biofertilizer received the highest ratings for overall acceptability ($p = 0.02$) and taste ($p = 0.03$) compared to other treatments. Pods from MP + C, MP + IF, and NC treatments were also preferred for colour and texture, though the differences were less pronounced. Notably, chilli pods grown with MP were rated highest for overall acceptability. These findings suggest that *Mimosa pigra*-derived fertilizer could support eco-friendly agriculture and offer a sustainable management practice for controlling invasive species in Sri Lanka. Future research will explore the effects of varying *Mimosa pigra* fertilizer concentrations on chilli quality and yield over multiple seasons, along with long-term soil health impacts and potential applications for other crops.

Keywords: *Capsicum annum*, Hedonic scale, *Mimosa pigra*, Organic fertilizer