

## GROWTH AND YIELD PERFORMANCE OF NEWLY DEVELOPED LUFFA LINES

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Locally released Luffa (*Luffa acutangula*) varieties produce light green fruits, which have low consumer preference and farmers do not tend to cultivate. This study was carried out to identify a Luffa variety with dark green fruits like Naga, for cultivation or to use as a parental line to develop hybrids. Six locally developed Luffa lines (N-1-1, N-3-2, N-3-4, N-5-2, N-5-3 and N-5-4) and two control varieties (Local-Gannoruwa Ari (GA) and Exotic hybrid- Naga) were used for this study. The experiment was arranged in a Randomized Complete Block Design (RCBD) with three replicates in the Horticultural Crop Research and Development Institute (HORDI), Gannoruwa during *Yala* 2017. Germination percentage, growth parameters, qualitative morphological characters, phenological characters, yield components, colour and shape of the fruit and pest and disease incidence were recorded by visual observation. Days to 50% flowering of N-3-4 and N-5-3 were similar with Naga and N-5-3 was similar with GA. Days to initiate first male flower of N-3-2, N-3-4, N-5-2 and N-5-3 were similar to that of Naga and GA. Days to initiate first female flower of N-3-4 and N-5-3 were similar to that of Naga and GA. Naga hybrid recorded the highest fruit length (57.56cm) and N-1-1 recorded the lowest (43.53cm). Naga hybrid recorded the highest average single fruit weight (661.87g), and followed by N-5-2 (571.37 g), and N-5-3 (566.60 g) respectively and the N-3-2 (404.13g) recorded the lowest fruit weight. Naga recorded the highest total yield (19407kgha<sup>-1</sup>) and N-5-3 recorded the second highest (15407kgha<sup>-1</sup>) while the lowest yield was by N-1-1 (9067kgha<sup>-1</sup>). Naga recorded the highest Leaf area (281.25cm<sup>2</sup>), second highest leaf area was recorded by N-3-4 (254.42 cm<sup>2</sup>) and N-5-4 recorded the lowest (190.25cm<sup>2</sup>) leaf area at 50% flowering stage. Line N-5-3 recorded the highest canopy area at 50% flowering stage and the stage after that. GGN137A was the fruit color of Naga according to the colour chart of the Royal Horticultural Society. None of the lines could produce that dark green colour skin to release as a variety. Therefore, evaluating all the parameters, N-5-3 and N-3-4 lines can be recommended to use as parental lines to develop hybrid varieties.

**Keywords:** Fruit colour, Hybrid, Luffa, Parental line, Variety