Preliminary Observations on Flowering and Fruiting of *Rhizophora mucronata* and *Rhizophora apiculata* in Anawilundawa Ramsar Sanctuary, Sri Lanka

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Mangroves and the environments where they grow are highly dynamic, making it essential to understand the seasonality of their flowering and fruiting for effective restoration approaches. This study aimed to assess the monthly variation in flowering and fruiting of *Rhizophora mucronata* and *Rhizophora apiculata*, identifying their peak seasons. Three mature, healthy trees of each species under similar conditions were tagged and monitored monthly from August 2025 to April 2026. The flowering stages (buds, open flowers, withered flowers) and fruiting stages (immature, semi-mature, mature and fallen) of each plant were visually observed and their abundance was recorded using five percentage-based categories, and score values ranging from 1 to 5 were assigned (1: absent, 2: 1-10%, 3: 11-30%, 4: 31-50%, and 5: >50%). The highest mean score for each stage in each month was calculated to identify the peak months and the Kruskal-Wallis test was used to determine significant differences among months. Statistical results revealed that there were no significant monthly differences in any of the tested flowering or fruiting stages ($p=0.4289$) in both species. *R. mucronata* exhibited an extended flowering peak from August to September (flower buds: >50%; open and withered flowers: 31-50%), whereas *R. apiculata* peaked in August with flower buds: >50%; open flowers: 1-10%. *R. mucronata* showed peak fruiting in September with immature fruits: 11-30% and mature fruits: 1-10%, while *R. apiculata* peaked in December (immature and semi-mature fruits: 1-10%). Both species exhibited concurrent flowering peaks, whereas fruiting peaks showed species-specific variation. Although *R. apiculata* exhibited a fruiting peak in December, fruit development was lower than in *R. mucronata*. Flowering stages showed higher intensity, while fruit set percentages were comparatively lower in both species. This study recommends the continuation of long-term monitoring and integration of phenological data with environmental variables to better capture and explain seasonal variations.

Keywords: *Flowering season, Fruiting season, Mangrove phenology, R. apiculata, R. mucronata*