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Floral phenology and pollination success in the interspecific hybrid of *Momordica dioica* × *Momordica subangulata*

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Momordica dioica (S:Thumba Karavila) is a popular vegetable. It is dioecious and obligatory cross-pollinated. However, natural cross pollination is poor resulting in low yields. Recently, the Department of Agriculture introduced two interspecific hybrids of *M. dioica* × *M. subangulata*, named Chandu (female) and Vishma (male), for cultivation. Although the hybrids perform better than the traditional varieties they still require hand pollination for fruit set. The study was a preliminary investigation to understand the floral phenology and breeding behavior of the hybrids to identify barriers for natural cross pollination. Male (09) and female (12) hybrid plants initiated from cuttings were obtained from Angunakolapelessa Research Center and raised in the University premises, Colombo from 2016.06.19 to 2017.01.06 for observations. Female plants took 56–63 days and male plants 56–105 days from planting to initiate flowering. Female plants reached peak flowering in 59 days while males took 105 days, indicating asynchrony in flowering between the two sexes. A female flower bud took 10 days (mean of 50) and a male 12-15 days (mean of 200) from visible initiation to flower opening. Male and female flowers started blooming at night, usually between 7.30 and 8.15pm. Female flowers took 2.0 - 2.5 hours and males 2.5 - 5.0 hours to fully open. Female flowers had a shorter life span and closed earlier in the following day (6.15–7.30am) than male flowers (9.00–11.15am). Although the overall male: female flower ratio was 17:5, in early stages of the crop there were fewer male flowers to provide pollen to a relatively large number of female flowers. Thus, it may be beneficial to start male plants earlier than female plants or use previously stored pollen to overcome restrictions in the pollen supply. Fruit set from natural open pollination was 5% whereas hand pollination was very successful (93%). Asynchrony in male and female flowering and the shorter life-span of female flower were identified as reasons for poor natural pollination. However, insect pollination may have potential because *Trigona iridipennis*, a common insect pollinator, was found to frequent male flowers and forage on pollen.

Keywords: Floral phenology, interspecific hybrids, *Momordica dioica*, *Momordica subangulata*, pollination.

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