

**A Case Study :**

**Floral biology of kartoli**

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**ABSTRACT**

Kartoli (*Momordica dioica* Roxb) is under utilized vegetable of high nutritional, medicinal and economic values. Its immature tender green fruits are cooked as vegetable. Young leaves, flowers and seeds are also edible. No observations on days taken for flower bud development showed that male plants were earlier which took 28 days from sprouting to bloom female plants took 39 days for flowering. Anthesis occurs during evening. Anthesis was earlier in male flower started between 8 to 8.30 PM and continued up to 9.00 to 9.30 PM. Flower takes 7-15 minutes to open. More than 90 per cent male flowers opened between commenced from 8.00 to 9.30 PM with peak at 9.30 to 10.00 PM. Dehiscence commenced at 8.00 PM and continued up to 8.00 PM *i.e.* prior to anthesis. The viability of pollen in acetamine test was very high (96.20%) at the time of anthesis to 12 hours after anthesis (95%) pollen viability decreased to 70 per cent after 36 hours and 25.3 per cent after 48 hours of anthesis. The viability of pollen grain was less after 60 hours of anthesis, though stigma becomes receptive up to 18 hours. The male and female plants can only be recognized when plants starts flowering. In this crop hand pollination may be practiced for better fruit setting and more yield.

**Key words :** Floral biology, Flower, Pollen biability, Kartoli.

**K**artoli (*Momordica dioica* Roxb) is under utilized vegetable of high nutritional, medicinal and economic values. Its immature tender green fruits are cooked as vegetable. Young leaves, flowers and seeds are also edible. No systematic attempt has been made for its domestication and thus yield is poor. It is indigenous, dioecious, perennial vegetable crop belong to cucurbitaceous family and grows widely on hedges throughout the country. Improvement in plant productivity by breeding needs knowledge on nature of floral biology and fruit set. However, very little work has been done on the floral biology of this underutilized vegetable crop. In this study, an attempt was made to study floral biology of kartoli.

**MATERIALS AND METHODS**

The present investigation was conducted at the College of Horticulture, Akola during 2003-04 and 2004-05 to study floral biology of kartoli. Crop of Kartoli was raised by planting of male and female seedling independently of collected type from different parts of Maharashtra. The 30-35 days old seedling were transplanted in a cloudy day season. Pergolas were provided for training of the vines. Observations were recorded on day to flower, male and female flower bud development, anthesis, pollen viability, and stigma receptivity on same date of the both years.

**RESULTS AND DISCUSSION**

The result of this investigation indicated that, plants of kartoli crop planted by seed/seedling took more days for flowering and fruiting as compare to crop planted by underground tuberous root. Anthesis was earlier in staminate flower than pistillate (Table 1). Anthesis in staminate flower started between 8.00 to 8.30 P.M. and continuous up to 9.00 and 9.30 P.M. Maximum staminate (6%) flowers were opened between 8.30 to 9.30 P.M. Anthesis in pistillate flowers commenced from 8.00 to 9.30 P.M. with peak at 9.30 to 10.00 P.M. and it continued

**Table 1 : Anthesis in Kartoli**

Date	Average percentage value of flower opened at different time (PM)				
	8.00-8.30	8.30-9.00	9.00-9.30	9.30-10.00	10.00-10.30
<b>Staminate</b>					
17.8.2004/05	4.0	22.1	70.0	33.0	-
18.8.2004/05	9.5	11.4	60.3	10.7	-
19.8.2004/05	4.5	25.0	66.0	15.5	-
20.8.2004/05	4.0	29.5	56.5	10.0	-
21.8.2004/05	7.5	21.6	60.0	11.0	-
Mean	5.88	21.92	60.08	10.1	-
<b>Pistillate</b>					
17.8.2004/05	-	-	5.0	70.0	25.0
18.8.2004/05	-	1.5	6.4	72.5	19.6
19.8.2004/05	-	2.0	8.0	71.5	16.5
20.8.2004/05	-	2.0	4.0	67.0	27.0
21.8.2004/05	-	1.6	2.5	75.4	21.6
Mean	-	1.75	5.18	71.28	22.54