The Asian Journal of Horticulture, December 2007, Vol. 2 (2) : 285-287

FLORAL BIOLOGY OF UNDERUTILIZED VEGETABLE : KARTOLI

V.N. DOD, V.K. MAHORKAR AND P.D.PESHATTIWAR

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 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 such information of kartoli is lacking. The present investigation was, therefore, carried out to study the nature of floral biology. 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 occur 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 5.00 PM and continued up to 9.00 PM i.e prior to anthesis. The viability of pollen in acetomine 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 remains 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.

See end of article for authors' affiliations

Correspondence to :
V. N. DOD
Department of Horticulture,
College of Horticulture
Dr. P.D.K.V.,
AKOLA (M.S.) INDIA

Accepted : December, 2007

Key words : Floral biology, Kartoli.

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 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 has been made to increase fruit setting and more yield.

MATERIALS AND METHODS

The present investigations were undertaken in the College of Horticulture, Akola during 2003-2004 and 2004-2005. 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 seedlings 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 continuos up to 9.00 and 9.30 P.M. Maximum stamnate (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 up to 10.00 to 10.30 P.M. This in conformity with the result of Abdul Vahab (1990) and Shikhalia *et al.* (1990) in kakral. This is entirely different from that of sweet gourd (*M.chinchinensis*) where the anthesis of both staminate and pistillate flowers is between 4.00 and 9.55 A.M. as reported by Pal *et al.* (1972).