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FLORAL BIOLOGY AND PHENOLOGY OF HONEY PLANT, *AMMI MAJUS* L. AND IT'S POLLINATOR RELATIONSHIP

K. S. Sowmya* and S. Pradeep

Organic Farming Research Centre, ZARS, Navile, Shimoga

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For Correspondence:

K. S. Sowmya

Organic Farming Research Centre, ZARS, Navile, Shimoga

E-mail:

ofrcuasb@yahoo.com

ABSTRACT

Honey plant is a biannual herb, bears on an average of 11.00± 2.00 lateral branches and each lateral branch bears inflorescence called umbel, which are white coloured and bisexual with flower lets. Calyx with five fused small sepals and corolla consists of five small petals. Stamens are epigynous, five in number and measures about 1.50± 0.10mm with minute anther, Ovary inferior Corollatube absent. The nectaries are minute and numerous. The flowers open at 0800 to 0900 h and remain open for a day. Anther dehiscence is initiated at 0900 h.

INTRODUCTION

Honey plant is an important biennial herbaceous plant belonging to the family Umbelliferae. The crop is grown commercially for supplying the raw materials to therapeutic industries. The seeds possess 60 per cent of the furano-coumarins. Xanthotoxin is the major component in the seeds of honey plant which increases the melanin pigment in the skin on exposure to ultra-violet rays. It is commonly used in the treatment of leucoderma or vitiligo and also in formulating suntan lotions thus it has gained recognition as an export material. (Ajit singh, 1995). The crop is propagated exclusively through seeds and their flowers are rich source of pollen, attracting various insect pollinators for their perpetuation and multiplication. Thus, the relationship seems to be estimated between the pollinators and the honey plant. Hence, the present study was undertaken on floral biology and phenology of honey plant to find out plant-pollinator relationship.

MATERIAL AND METHODS

The study was undertaken at the herbal garden, Division of Horticulture, UAS, GKVK, Bangalore during 2007. Ten randomly selected honey plants were observed for the phenology and floral biology of the crop. Floral parts such as number of sepals, petals, stamens, anthers, ovary, style, stigma of ten randomly selected flowers were removed and length was measured and expressed in millimeter. The time of anthesis, time of anther dehiscence and duration of flower, flowering time were also recorded.

RESULTS AND DISCUSSION

Honey plant is an annual herb, 0.9 to 1.5m height with striated subglaucous stems. Leaves are alternate, bipinnate and lobes oblong. Each plant bears on an average of 11.00± 2.00 lateral branches and each lateral branch bears inflorescence called umbel, which are terminal, solitary, 50mm long leaf-like bracts borne on 1-10mm long stalks. Umbel measures 8cm diameter, white coloured and bisexual with flower lets of size 0.50± 0.10mm. Calyx with five fused, obsolete or small sepals and corolla consists of five small petals which are obovate with an inflexed point. Stamens are epigynous, five in number and measures about 1.50± 0.10mm with minute anther. Ovary inferior, two locular measures about 0.50± 0.20mm with 1.50± 0.10mm style and capitate stigma. Corollatube absent. The nectaries are minute and numerous. The plants were flowering from October to March. The flowers open at 0800 to 0900 h and remain open for a day. Anther dehiscence is initiated at 0900 h. seeds are small, pendulous with pale ridges measures 1.50 to 2.00mm (Table.1). Among honeybee species

namely *Apis cerana*, *A. florae* and *Trigona iridipennis* abundantly foraging for pollen on flowers of honey plant. The present study clearly indicated that there is close relationship between crop and bee pollinators. Similar studies in some of the medicinal and aromatic crops have been reported by Ajit singh (1995) and Shilpa (2006). However, slight variation in present study and earlier studies on floral biology and phenology of some of medicinal crops may be due to weather condition of the site and variation in the cultivation practices of these crops.

REFERENCES

AJIT SINGH, 1995. *Ammi majus* L. *Advances in Horticulture Medicinal and Aromatic plants*. *Eds*: Chadha, K. L and Rajendra gupta. Vol 11- pp 527-533.

SHILPA, P., 2006. Insect pollinators of selected aromatic crops with special reference to chamomile, *Matricaria chamomilla* L. *M.Sc (Agri) thesis*, University of Agricultural Sciences, GKVK, Bangalore.

Table-1: Floral biology and phenology of honey plant, *A. majus* L.

Plant height	0.9-1.5 m
No. of lateral branches/plant	11.00± 2.00 **
Flower colour	white
Diameter of flower lets (mm)	0.5±0.1 *
Diameter of Single umbel	8 cm
Corolla: petals	5
Number of stamens	5
Length of stamen (mm)	1.5± 0.1
Length of anther	Minute
Length of ovary (mm)	0.5± 0.1 *
Length of style (mm)	1.5± 0.1 *
Corollatube	Absent
Number of nectarines	Minute and numerous
Calyx: Sepals	5 (Fused)
Seed size	1.5-2mm
Flowering time	October- March
Umbel duration (days)	6
Flower opening time (h)	0800-0900
Anther dehiscence (h)	0900

* Mean of 10 flowers

** Mean of 10 Plants