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FEEDING BEHAVIOR OF *MYLABRIS PUSTULATA* THUNBERG (COLEOPTERA: MELOIDAE) ON DIFFERENT FOOD PLANTS

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ABSTRACT

Flowers of common food plants of the blister beetle (*Mylabris pustulata* Thunberg) cowpea, blackgram, greengram, pigeonpea, okra and China-rose were evaluated for their preference as food by the beetle under the choice and no-choice tests in caged conditions in the laboratory of Department of Entomology, Rajasthan College of Agriculture, Udaipur. The food preference studies indicated that female blister beetles preferred to feed China rose (207.00 to 209.50 mg/day); while the males preferred the mixed food comprising flowers of 6 plants (96.50 to 99.75 mg/day). Blackgram was least preferred (27.75 to 29.75 mg/day) both by males and females.

Key words : feeding behaviour, bhiter beetles, mylabris pustulata

INTRODUCTION

Blister beetles belong to the family Meloidae (Order: Coleoptera), comprising about 125 genera and 3000 species worldwide and is found everywhere with the exception of Antarctica and New Zealand (Bologna *et al*., 2008). Adult beetles are phytophagous preferably feeding on plants of Amaranthaceae, Compositae, Leguminosae, Malvaceae, Convolvulaceae and Solanaceae. Suman and Wahi (1981) reported the blister beetle *M. pustulata* as a common insect pest of many field crops. Some blister beetles had been observed feeding on pigeonpea and other crops in the Kumaon Hills of Uttar Pradesh (Garg, 1985; Prasad, 1995). The Chinese blister beetle *Mylabris phalerata* (Pallas) was recorded as a serious pest of pigeonpea in the lower hills of Uttar Pradesh (Dutta and Singh, 1989). Considerable yield losses caused by blister beetle, *Mylabris* spp. in pigeonpea had been estimated by Durairaj and Ganapathy (2000). Banded blister beetle *M. pustulata* was recorded as a pest on orchids in Kerala (Kumari and Lyla, 2001). The blister beetle *M. oculata* was reported as a serious pest of numerous ornamental, fruit and vegetable crops (Picker *et al*., 2002). *Zonabris pustulata* Thunb. (*M. pustulata*) was mentioned as a pest on Cashew apple in Andhra Pradesh (Ayyanna and Ramadevi, 1987). Dwomoh *et al*. (2008) observed *Mylabris bifasciata* (De Geer), feeding on inflorescence and tender foliage, but not on cashew apples. However, monitoring the blister beetle and its management are essential because the apple development is very important for quality yield of nuts (Sreedevi *et al*., 2009). The blister beetle, *Mylabris indica* Herbst was recorded as a polyphagous insect pest on oil seeds, pulse, ornamental and vegetable crops, causing heavy losses by devouring flowers (Selvisabhanayagam and Mathivannan, 2010). In cotton fields, *M. pustulata* was recorded as a minor, but sometimes a major pest (Sahayaraj and Borgio, 2010). *M. pustulata* was observed feeding on flowers of cucurbitaceous vegetables, okra, cotton, mungbean, pigeonpea and other plants (Rolania *et al*., 2012).

MATERIALS AND METHODS

The feeding behavior of adult blister beetles was studied under two sets of conditions, *i.e*., no-choice and choice. Flowers of cowpea, blackgram, greengram, pigeonpea, okra and China-rose were provided as food to evaluate the food preference by the adult beetles under the choice and no-choice tests in caged conditions. The flowers with short stalks were kept upright in moist sand, using distilled water, contained in plastic containers (diameter 6.5cm; depth 6 cm) and maintained in double-door wooden insect cages (size). Under the no-choice condition, 6 twigs with flowers (10cm long) from cowpea, blackgram, greengram, pigeonpea, okra and China-rose were provided as food separately for pre-starved (1 hour) adult male and female blister beetles singly maintained within the cages and replicated four times. Under the choice test, one twig with flowers (10cm long) from each of the six host plants referred to above were provided individually to one adult male and one adult female beetle maintained on moist sand within cages. Data were collected on the quantum of petals consumed by the beetle on weight basis. The male and female beetles were weighed initially before the start of the experiment and 24 hours after along with the faeces/droppings. The data on feeding obtained were analyzed using suitable statistical procedures.

Table 1. Comparative feeding by *M. pustulata* on different food plants

Food Plants Evaluated	Flower consumption (mg)/day			
	Females (2012)	Males (2012)	Females (2013)	Males (2013)
Greengram	48.00	44.25	49.00	44.00
Blackgram	29.75	27.75	29.25	28.75
Cowpea	40.50	38.75	43.50	42.00
Pigeonpea	68.25	40.75	66.50	40.50
China rose	207.00	76.25	209.50	76.50
Okra	39.00	40.00	39.00	37.00
All food plants	99.50	98.75	99.75	96.50
S. Em. ±	4.95	2.63	4.33	5.16
C. D. (5%)	14.69	7.82	12.87	15.33

RESULTS AND DISCUSSION

On the basis of choice test it could be observed that the consumption was more or less uniform ranging from 96.50 to 99.75 mg during the 24 hour period. Under the no-choice test, the maximum consumption was recorded for China rose by the female blister beetle ranging from 207.00 to 209.50 mg during the 24 hour period. However, among males, consumption was the maximum when all food plants were provided together. China rose was the preferred flower for the female blister beetles possibly due to presence of strong chemical attractants and stimulants. In our study we observed that the beetles consumed the petals as well as the androecium part (Table 1). Similar studies conducted by Shukla and Upadhyay (1972) indicate that among the three host plants, *Hibiscus rosascinensis*, *H. esculentus* and *Sida caeveronifolia*, China rose (*H. rosascinensis*) was most preferred and that the beetles consumed only the petals. Earlier, Srivastava and Srivastava (1957) have worked on the feeding habits and digestion in *Mylabris phalerata* Pallas.

The flower consumption was the lowest for blackgram (27.75 to 29.75 mg) by both males and females. The preference of food plants by the female beetles in a descending order was China rose > all food plants > pigeonpea > greengram > cowpea > okra > blackgram during both years. Likewise, the order of preference for the male beetles was all food plants together > China rose > greengram > pigeonpea > okra > cowpea > blackgram during both years of study.

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