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Short Note

Study on morphometric parameters of the blue bug, *Chrysocoris purpureus*

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Abstract

The blue bug, *C. purpureus* attacked mainly the tender shoots and fruits of *Jatropha*. It was found sucking the sap from fruits, due to which the color of fruits changed from green to yellow. In case of severe infestation the fruits turned brown. The infestation adversely affected the quality of seed and oil and ultimately reduced the fruit and oil yield.

Keywords: Morphometric parameters, blue bug, *Chrysocoris purpureus*

Introduction

Jatropha curcas commonly called as Ratanjyot, Chandrajyot, Jamalghota, Jangli arandi and Kala aranda in Hindi. In Chhattisgarh, rural people call by different names i.e., in Bastar plateau zone it is known as Ranizada, in northern hill zone as Ramredi and in Chhattisgarh plain region as Bagranda (Puri *et al.*, 2005) [3]. It is multipurpose tree of significant economic importance. It is native of Mexico and tropical South America. The plant is reported to have been introduced in Asia and Africa by Portuguese as an oil yielding plant. Now it is occurring all most throughout the India and in Andaman Island in semi wild condition. It is found throughout most tropics and is known nearly by 200 different names indicating its significant and various possible uses. It adapts well to semi arid marginal site, waste land and dry environment.

The genus *Jatropha* belonging to family Euphorbiaceae is one of the prospective biodiesel yielding tree crops. It is morphologically a diverse genus comprising 160-175 species of shrubs, rhizomatous shrubs, herbs and small trees. About nine species of *Jatropha* have been recorded in India. Out of these important ones are *Jatropha curcas*, *J. gossypifolia*, *J. glandulifera*, *J. multifida*, *J. podagrica*, *J. integerrima*, *J. nana*, *J. tanjorensis*, and *J. spicies*. (Agarwal and Agarwal, 2007) [1].

The bushy plant (3-4 meter high) of *Jatropha* bears numerous side branches arising from its main stem. The flowers are yellowish green in loose panicles. The flowering occurs once in a year i.e. during September-December. The ripe fruits are about 2-5 cm. large and ripened fruits are yellow in colour. The seeds resemble with castor seed in shape either ovoid or oblong and are covered in a dull brownish black capsule. (Punia, 2007) [2].

The seeds contain *Jatropha* oil which has a great potential to be used as biofuel in future. Like any other crop, *Jatropha* is also attacked by a number of insect pests which deteriorates the plant growth, vigour and also affects the quality and quantity of oil yield.

The use of *J. curcas* is varied and has ranged from serving as medicine to providing slow drying non edible oil known as 'curcas oil'. The wood and fruit of *Jatropha* can be used for numerous purposes including fuel. The seed contains (50% by weight) viscous oil which can be used for the manufacture of candles and soaps in the cosmetic industry, for cooking and lighting by itself or as a diesel/ paraffin substitute which has important implications for meeting demand for rural energy services and exploring practical substitutes for fossil fuels to counter green house gas accumulation in the atmosphere.

Experiment details

The experiment was conducted in Randomized Block Design with 47 provenances each replicated three times.

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Design: RBD
 Replications: Three
 Number of provenance: 47
 Plot size: 90 x 40 m²
 Age of plant: 6 years
 Treatments: 8

For recording observations, the whole experimental field was divided into 35 blocks, each block having nine plants.

List of provenances of *Jatropha curcas* are as follows

S. No.	Name of provenances	S. No.	Name of provenances
1.	Sagar-1	25.	J&K Set 2
2.	RJ 117 (A)	26.	Jagdapur
3.	Dehradun	27.	Kalyanpur
4.	Barbuspur	28.	APOS-2001
5.	Pant J&K Set 2	29.	RJ 117 (B)
6.	J&K Set 1	30.	TNMC-7
7.	Jabalpur	31.	ANOS-201
8.	J&K Set 1	32.	PKVJ-SJ-1
9.	NRCAF-13	33.	Pendra Road
10.	Baikunthpur	34.	PKVJ-DHW-1
11.	TNMC-5	35.	NRCAF-14
12.	Mandeshwar	36.	Balodabazar
13.	Pant J&K Set 1	37.	Kot
14.	PKVJ-MKV-1	38.	Tukupoms
15.	AMOS-201	39.	Taraipur
16.	Bawal	40.	Kilkila
17.	NRCAF-15	41.	Chandrapur
18.	PKVJ-AKT-1	42.	Mahanpur
19.	Indore-I	43.	Surajpur
20.	Korba	44.	Sonhat
21.	Chandka	45.	Saheltarai
22.	TFRI-1	46.	Churmundra
23.	Barmunda	47.	Keshipur
24.	NRCAF-18		

Result discussion

Table 1: Morphometric parameters of male and female blue bug, *C. purpureus*.

Parameters	Male	Female
Ventral view colour	Orange	Whitish
Average length	1.50cm	1.40cm
Average width	1.50cm	1.40cm
Average length of Antennal scape	859.71 µm	818.88 µm
Average width	316.16 µm	308.00 µm
Average length of pedicel	365.39 µm	393.09 µm
Average width	234.61 µm	252.71 µm
Average length of flagella	1137.06 µm	1283.41 µm
Average width	282.82 µm	277.26 µm

The morphometric parameters of male and female of blue bug, *C. purpureus* were studied in detail under trinocular digital microscope.

The average length and width of the body from head to last abdominal segment was measured and it was observed that the mean length of male bug was 1.50cm and that of female was 1.40cm. The details of the antennae was also studied the mean length of scape was 859.71µm in male while in female it was 818.88µm, pedicel was 365.16µm and 393.09 µm in male and female respectively while the average length of flagellum (including 3 segments) was found to be 1137.06µm and 1283.41µm respectively.

The colour of the ventral part of the abdomen was orange in male white it was whitish in female.

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