

Pest Complex Of Indian Mustard *Brassica Juncea* In Western Uttar Pradesh

Amar Pal Singh^{1*}, Rajesh Kumar Rathi^{2*}, Malti³

^{1,2,3} Assistant Professor, Department of Zoology, Janta Vedic College, Baraut (Baghpat) UP

Abstract - The studies on pest complex were conducted during rabi season at Research Farm of Janta Vedic College, Baraut (Baghpat) in Western Uttar Pradesh revealed that 13 species of insect pest were recorded to infest the mustard crop. The mustard aphid (*Lipaphis erysimi* kalt.) was found as a keypest of mustard crop during the study period. Painted bug (*Bagrada cruciferarum* Kirk.) was found as a minor pest, first at seeding stage and second at harvesting state when the crop was in maturing stage. The saw fly (*Athalia lugens proxima* Klug.), pea leaf miner (*Chromatomyia horticola* Goureau.) and flea beetle (*Phyllotreta cruciferae* Goeze) were also found as a minor pest with irregular occurrence during the study period.

Keywords - Indian Mustard, pest complex.

-----X-----

INTRODUCTION

Indian Mustard, *Brassica juncea* (L) Czarn is an important oilseed crop in India having an area of about 6.4 m ha with a production of 8.02 mt. and productivity is 1262 Kg/ha (Patel and Singh, 2017). India is ranked third after Canada and China Sharing about 11.0% of the global rape seed production of oil seeds in India during 2018-19. Bakhetia and Sekhon (1984) recorded 38 insect pest from rapeseed mustard crops. The crop is attacked by several insect pests which cause the major problem to mustard growers. The present study will help to know the pest complex in the agroclimatic conditions of Baraut (Baghpat) to find out their suitable management.

MATERIALS AND METHODS

Field experiment was carried out during rabi season of 2022-23 at Research Farm of Janta Vedic College, Baraut (Baghpat) UP to study the pest complex on mustard. The mustard variety Varuna was sown in Randomized Block Design in the plot size of 4m x 3m having row to row and plant to plant spacing as 30 and 15 cm respectively. The crop was grown with recommended agronomical practices. The observation of insect pest was taken either daily or at an interval of 1-2 days.

RESULTS AND DISCUSSION

The mustard crop was found to be infested by 13 species of insect pests at different phases of growth, among these pests mustard aphid (*Lipaphis erysimi* kalt.) was found as a major pest. Painted bug (*Bagrada cruciferarum* Kirk.), sawfly (*Athalia lugens proxima* Klug.) and pea leaf miner (*Chromatomyia horticola* Goureau) were found as a minor pests of rapeseed-mustard crop. The mustard aphid was found as the key pest and remains active during vegetative, flowering and pod formation stage. The painted bug damaged the crop, first in the seeding stage and then at the pod stage. The nymphs and the adults sucked sap from leaves shoots, inflorescence or pod on the plants. The sawfly was found at the seeding stage. The flea beetle (*Phyllotreta cruciferae* Goeze) was recorded as minor pest of rapeseed mustard. The other pest such as cabbage butterfly (*Pieris brassicae* Linn.), diamond back moth (*Plutida xylostella* Linn.) cut worm (*Agrotis segetum* Dennis & Shiff.), bihar hairy caterpillar (*Diacrista obliqua* Walker), green peach aphid (*Myzus persicae* Hub) etc. were found of minor importance but some times they may damage the crop moderately. The other pests appeared on the crop as occasional pests. (Table 1) Rai (1976) recorded 24 insect species while Bakhetia and Sekhon (1984) recorded 38 insect pests infesting

rapeseed-mustard crop in India. 14 to 43 species of insect pests infesting rapeseed mustard crop was recorded by Chaudhary and Pal (2006), Singh *et al* (2007), Bakhetia and Arora (1993) and Purwar *et al* (2004) These results support the present investigation with minor variation which may be due to the agroclimatic conditions, and due to the difference in the time of sowing.

Table 1: Pest complex of Indian mustard var. Varuna under the agro-climatic conditions of Baraut (Baghpat) U.P.

Sl.No.	Scientific Name	Order	Family	Crop Stage	Status
1.	<i>Lipaphis erysimi</i> (Kalt)	Hemiptera	Aphididae	Vegetative, flowering and pod formation	Major
2.	<i>Bagrada cruciferarum</i> (Kirk)	Hemiptera	Pentatomidae	Seedling and pod formation	Minor
3.	<i>Myzus persicae</i> (Sulzer)	Hemiptera	Aphididae	Vegetative, flowering and pod formation	Minor
4.	<i>Brevicoryne brassicae</i> (Lin.)	Hemiptera	Aphididae	All stages	Minor
5.	<i>Anthalia lugens proxima</i>	Hymenoptera	Tenthredinidae	Seedling	Minor
6.	<i>Phyllotreta crucifera</i> (Goeze)	Coleoptera	Chrysomelidae	Seedling and Vegetative	Minor
7.	<i>Epilachna dodecastigma</i>	Coleoptera	Cocinellidae	Vegetative stage and maturing stage	Minor
8.	<i>Pieris brassicae</i> (Linn.)	Lipidoptera	Pieridae	Flowering and pod formation	Minor
9.	<i>Plutella xylostella</i> (Linn.)	Lepidoptera	Plutellidae	Vegetative	Minor
10.	<i>Plusia onchalcica</i> (Fab.)	Lepidoptera	Noctuidae	Vegetative	Minor
11.	<i>Diacrisia abliqua</i> (Walker)	Lepidoptera	Arctiidae	All stages	Minor
12.	<i>Helicoverpa armigera</i> (Hub.)	Lepidoptera	Noctuidae	Flowering and pod formation	Minor
13.	<i>Chromatomyia horticola</i> (Goureau)	Diptera	Agromyzidae	Flowering and pod formation	Minor

REFERENCES

1. Bakhetia D R C and Arora R (1993) Changing scenario of insect pests and pest management in rape seed mustard. In : Pest and Pest management in India–The changing Scenario. Sharma, H.C. and Rao, M.V. (Eds) National Seminar in changing scenario in pest and pest management in India held during 31 Jan – 1 Feb at Hyderabad PP. 56-59.
2. Bakhetia D R C and Sekhon B S (1984) Review of the research work on insect pest of rapeseed-mustard in India. Paper presented at the all India annual Rabi oilseeds workshop of Rapeseed-mustard, safflower and Linseed held at Sukhadia University of Agric. Res. Stn Durgapura (Jaipur) Rajasthan, Aug. 6-10, 1984.

3. Bakhetia D R C, Sekhon B S (1987) Insect pests and their management in rapeseed mustard, *J. Oil seed Res.* 6, 269-299.
4. Choudhary S and Pal S (2006) Pest complex and their succession in mustard under tarai ecological conditions of West Bengal, *Indian J. Ent.* 68, 387-95.
5. Patel S and Singh C (2017) Development of weather based forewarning model for mustard aphid *L.erysimi* Kalt. in Tarai region of Uttarakhand. *J. Agrometeorol*, 19:382.
6. Purwar J P Singh R K and Mall P (2004) Eco friendly management of Insect Pests in rapeseed mustard. *Indian Farmers Digest*, 37, 34-35.
7. Rai B K (1976) Pests of oilseed crops in India and their control. Indian Council of Agricultural Research, New Delhi. pp-121.
8. Singh R Singh D and Rao V U M (2007) Effect of abiotic factors on mustard aphid (*L.erysimi* Kalt.) on Indian Brassica, *Indian J. Agric. Res.* 41, 67-70.

Corresponding Author

Amar Pal Singh*

Assistant Professor, Department of Zoology, Janta Vedic College, Baraut (Baghpat) UP