

**Acknowledgement:** The authors wish to thank Dr. D. John Durairaj, Professor of soil Science, Agricultural College and Research Institute, Coimbatore for his guidance and also Miss. N. Kamalam, Assistant Agricultural Chemist for her useful suggestions in the preparation of this paper.

REFERENCES

- |  |   |
|--|---|
| Asghar, A. G., C. L. Dhawan<br>and K. D. Bhola | 1949 Preliminary studies on the establishment of colour standards in relation to soil constants. <i>Indian J. agric. Soil.</i> , 19: 21-9.  |
| Durairaj, D. J.                                | 1951 A study of the soil types of South India in relation to their colour and physical and chemical properties. M. Sc. Thesis, Madras Univ.   |
| —————  | 1961 Advanced studies on soil colour. Ph. D. Thesis. Madras Univ.   |
| Fabbri, A.                                     | 1932 Investigations on the relationship between some physical character of the quarternary ancient soils of Emilia (Italy) and their colour. <i>Ann. Staz. Splr. agr. Modena</i> . N. J. 2: 303-16 in <i>Chem. Abstr.</i> , 26: 6043. |
| Joshi, R. H.                                   | 1950 Colours of soils of Madhya Pradesh. Role of mechanical fractions and organic matter in colour formation. <i>Indian J. agric. Sci.</i> , 20: 443-59.  |
| Nickerson, D.                                  | 1946 Colour measurement and its applications to the grading of agricultural products. A Hand Book on the method of disc colorimetry. <i>Misc. Publications 580</i> . U. S. D. A. 1946.  |

<https://doi.org/10.29321/MAJ.10.A03737>

Notes on The Aphids of Rajasthan

by

H. C. JOSHI<sup>1</sup> and Y. K. MATHUR

A general survey of the aphids infesting agricultural and horticultural crops in various locales of Rajasthan viz. Ajmer, Alwar, Bharatpur, Jaipur, Kota, Udaipur and Sriganganagar was undertaken during 1963-64. The aphids collected from different food plants were got identified through the Commonwealth institute of Entomology, London. Brief notes on their occurrence, host plants, periodicity of attack have been given in this paper.

1. *ACRYTHOSIPHON PISUM*. Harris. (Pea aphid).

Synonyms: *Macrosiphum pisi*, Kalt.; *M. onobrychis*, B. d. F. *Nectarophora pisi*, Kalt & *Illinoia pisi*, Kalt.

<sup>1</sup> The Entomologist, Department of Agriculture, Meera Marg Bani Park, Jaipur.

Received on 6-10-1965.

Body colour yellowish green to dark green, adults alate and apterous.

Host Plant: Pea (*Pisum sativum*).

Distribution: Jaipur, Ajmer and in the pea growing areas in the vicinity of Bharatpur.

Notes: The aphid infests upper as well as lower surface of leaves, tendrils and the pods. The infestation was heaviest in the month of March. *Myzus persicae* was also found associated with *A. pisum* on pea leaves in small numbers.

## 2. BREVICORYNE BRASSICAE, Linn.

Synonyms: *Aphis brassicae*, Linn.

Body colour yellowish green, Adults apterous and alate.

Host Plant: Cabbage (*Brassica capitata*), cauliflower (*Brassica oleracea*) and mustard (*Brassica campestris*).

Distribution: Bharatpur, Jaipur and Ajmer.

Notes: The infestation by this pest is generally seen on the young shoots, tender leaves and twigs but at times attains enormous proportions on the pods of mustard and turnip. Honeydew secretions encrust the infested areas of the plants which give a sticky appearance. The peak period of activity was recorded in the last week of January.

## 3. APHIS CRACCIVORA, Koch.

Synonyms: *Aphis laburni*, Kalt.; *A. medicaginis*, Koch. and *A. leguminosae*, Theo.

Body colour dark brown, adults alate and apterous.

Host Plant: Cowpea (*Vigna catjang*) and methi (*Trigonella-foenum-graecum*).

Distribution: Jaipur and Udaipur,

Notes: All the stages of this aphid were found on the leaves of methi during January and February. Young plants of methi were seen badly infested in the Government Experimental Farm, Jaipur.

## 4. APHIS GOSSYPHII, Glover. (Cotton aphid).

Synonyms: *Aphis citrulli*, Ash.; *A. citrii*, Ashm.; *A. cooki*, Essig.; *A. cucumeris*, Forbs.; *A. cucurbitae*, Buckt.; *A. circezendis*, Fitch.; *A. bauhiniae*, Theo.; *A. illata*, Wlk.; *A. malvoidea*; *A. malvacarum*, V. d. G.; *A. malvae*, Koch.; *A. parvus*, Theo.; *Cerosipha gossypii* and *Toxoptera leonuri*, Tak.

Body colour green, adults alate and apterous.

Host Plant: Brinjal, (*Solanum melongena*), bhindi (*Abelmoschus esculentus*), musk melon (*Cucumis melo*), mango (*Mangifera indica*), sunnhemp (*Crotalaria juncea*), cucumbe: (*Cucumis sativus* L.), cotton (*Gossypium* sp.), betelvine (*Piper betle* L.), lemon (*Citrus limonia*), guava (*Psidium guajava*), gurhal (*Hibiscus rosachinsnsis*), menhdi (*Lawsonia inermis*), holyhock and tichoma hedge.

Distribution: Throughout Rajasthan.

Notes: This is the first record of this aphid on betelvines from this country. The young plants suffer a greater damage. It attacks musk-melon and cucumber crops and are generally seen on the under surface of leaves. On betelvines, pest population increases during March and April and black ants, *Camponotus compressus* F. are found associated with it.

#### 5. APHIS NERII B. d. F.

Synonyms: *Aphis lutescens*, Mon. and *A. asclepiadis*. Pass.

Body colour yellowish orange to pink; adult apterous.

Host Plant: Aak (*Calotropis gigantia* and *C. procera*).

Distribution: Jaipur, Ajmer and Udaipur.

Notes: This aphid was collected from gardens and from wild growing Aak in the month of January and was confined to the lower surface of the leaves.

#### 6. APHIS sp. (GOSSYPHII group) possibly PUNICAE.

Body colour light brown; Adults apterous.

Host Plant: *Duranta* (Hedge plant).

Distribution: Jaipur.

Notes: The maximum infestation of this pest in *Duranta* hedge was observed during January and February in the vicinity of Jaipur city.

#### 7. DACTYNOTUS SP.

Body colour light green; Adults apterous.

Host Plant: Brinjal (*Solanum melongena*).

Distribution: Dholpur and Jaipur.

Notes: It is found in association with *Aphis gossypii* congregating in large numbers on the under surface of the leaves. Aphids appeared in enormous numbers on brinjal crop in the month of March.

## 8. HYADAPHIS CORIANDRI (Das) Vagrants.

Synonyms: *Brevicoryne coriandri*, Das; *B. corianderi*, Das.

Body colour light green; Adults apterous.

Host Plant: Tomato (*Lycopersicum esculentum*) and coriander (*coriandrum sativum*).

Distribution: Ajmer, Jaipur and Udaipur

Notes: Mild attack of this pest was observed on tomato leaves. A large number of aphids was found attacking the stalks of flowers of the inflorescence of coriander from December to January. The lady bird beetle, *Coccinella septumpunctata* kept the pest under check on tomato crop. Peak period of infestation on coriander was observed in the middle of January.

## 9. LIPAPHIS ERYSIMI, Kalt. (Mustard aphid).

Synonyms: *Rhopalosiphum pseudobrassicae*, Davis, *Aphis pseudo-brassicae*, Davis; *Siphocoryne indobrassicae*, Das.

Body colour creamy green; Adults alate and apterous.

Host Plant: Cauliflower, cabbage, mustard, lucerna and turnip.

Distribution: Throughout Rajasthan, but abundant in Ajmer, Jaipur and Bharatpur.

Notes: The pest was observed in an epidemic form on mustard crop in Bharatpur and the high degree of infestation resulted in the complete failure of the crop. Predatory beetles *Coccinella septumpunctata* L. and *Chilomenes sexmaculata* Fab. were seen preying on the aphids on mustard crop at Jaipur.

## 10. MYZUS (NECTAROSIPHON) PERSICAE Sulzer. (Peach aphid).

Synonyms: *Aphis persicae*, Sulzer.; *Rhopalosiphum lactucellum*, Theo.; *Myzodes persicae*, Sulzer.

Body colour light green to dark green; Adults apterous and alate.

Host Plant: Pea (*Pisum sativum*), tobacco (*Nicotiana tabacum*), banana (*Musa paradisiaca* L.), lissora (*Cordia dichotoma* Frost), chillies (*Capsicum anum*), potato (*Solanum tuberosum*), methi (*Trigonella foenum-graecum*), cumin, pitunea, phlox, sweetsultan, pansy and *Jasminum* sp.

Distribution: Throughout Rajasthan.

Notes: This aphid has been recorded for the first time attacking Lissora, (*Cordia dichotoma* F.) and banana (*Musa paradisiaca* L.) in India. The aphids settle on both upper and lower surface of the leaves, apical shoots, and the flowering buds. The flowering plants have been observed heavily infested in the month of January.

## 11. RHOPALOSIPHUM MAIDIS, Fitch.

Synonyms: *Aphis maidis*, Fitch and *A. adusta*, Zehnt.

Body colour yellowish green to dark green; Adult alate and apterous.

Host Plant: Sugarcane (*Saccharum officinerum*), jowar (*Sorghum vulgare*), maize (*Zea mays*), bajra (*Pennisetum typhoides*), barley (*Hordium vulgare*) and wheat (*Triticum vulgare*).

Distribution: Throughout Rajasthan.

Notes: The 'kharif' crops like maize and jowar were seen more infested in comparison to the 'Rabi' crops like wheat and barley. The green aphid was seen actively flying on most of the 'Kharif' crops.

## 12. THERIOAPHIS TRIFOLII, Mon. ssp. MACULATA Bck.

Body colour light greenish brown to green; Adults apterous.

Host Plant: Lucerne (*Medicago sativa*).

Distribution: Bharatpur and Jaipur.

Notes: Different stages of this insect are found in very small numbers on the lower surface of tender leaves. *Chilomenes sexmaculata* F. was found preying on this aphid in Bharatpur.

Remarks: The aphids collected from the under-mentioned host plants of a doubtful identity are shown against them:

S. No.	Host Plant	Aphid
1.	Methi ( <i>Trigonella foenum-graecum</i> )	<i>Aphis</i> Sp. ? <i>craccivora</i> Koch.
2.	Pea ( <i>Pisum sativum</i> )	<i>Aphis</i> ( <i>Pergandeida</i> ) Sp. ? <i>craccivora</i> .
3.	Duranãa (Hedge Plant)	<i>Aphis</i> Sp. ? ( <i>gossypii</i> -group) possibly <i>punicae</i> Pass.
4.	Bhindi ( <i>Abelmoschus esculentus</i> )	<i>Aphis</i> Sp. ? <i>gossypii</i> Glover.
5.	Mendi ( <i>Lawsonia inermis</i> )	<i>Aphis</i> Sp. ? <i>gossypii</i> Glover.
6.	Tichoma (Hedge Plant)	<i>Aphis</i> Sp. ? <i>gossypii</i> Glover.
6.	Brinjal ( <i>Solanum melongena</i> )	<i>Dactynotus</i> Sp. ?

Summary: A general survey of aphids infesting various field and garden crops was undertaken in various locales of Rajasthan and the species recorded have been described with reference to their site of infestation, host plants, distribution and their synonyms. The aphids recorded are *Acrythosiphon pisum* Harris, *Aphis brassicae* Linn., *Aphis craccivora* Koch., *Aphis gossypii* Glover, *Aphis nerii* B. d. F. *Aphis* Sp. possibly *punicae* *Dactynotus* sp., *Hyadaphis coriandri*. (Das) Vagrants, *Lipaphis erysimi* Kalt., *Myzus persicae* Sulzer, *Rhopalosiphum maidis* Fitch and *Therioaphis trifolii*. Mon. ssp. *maculata* Bck.