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Review Article

Record of aphidophagous syrphids with their prey and host plants in India: A review

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ABSTRACT: The article deals with the association of aphidophagous syrphids with their prey species and their host plants for programming the biocontrol approach against aphid pests. Aphids are tiny sap-sucking bugs and they are important phytophagous pests due to their polymorphism and rapid increase of their numbers by parthenogenetic development. Larvae of syrphids are the most important natural enemies of several sap-sucking insects and are useful bioagents in biological control programmes. After reviewing many articles 48 species of syrphids are recognised as predators of 72 aphid species infesting more than 141 plants of different families. Among these syrphids, *Episyrphus balteatus* was reported as a predator on maximum number of aphid species (43 species) followed by *Ischiodon scutellaris* (34 species), *Eupeodes confrater* (20 species), *Betasyrphus serarius* (18 species), *Paragus serratus* (17 species), and *Allograpta javana* (12 species).

KEYWORDS: Aphid, biological control, host plants, syrphids

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INTRODUCTION

Aphids (Homoptera: Aphididae) are tiny sap-sucking plant bugs that are important phytophagous pests due to their polymorphism, host-shifting heteroecious behaviour and reproductive habits. They target every part of the plant's tissues that directly harm crops by reducing the growth of plants (Singh & Singh, 2021). They are also capable of spreading viral diseases in plants. The green peach aphid (*Myzus persicae*) individually capable of spreading 110 viruses in plants (Singh & Singh, 2016). Aphids are more susceptible to biological control because they are restricted in their mobility (Joshi & Ballal, 2013). Syrphids are essential predators of aphids and serve a key role in their control.

The family Syrphidae (Diptera) is a huge and diversified group of insects distributed worldwide. Syrphid flies are commonly known as hoverflies, flower flies, sunflies and drone flies (Ghorpade, 1981). They are active fliers that have loud vibration of flight and are the second most important pollinators of agricultural and non-agricultural crops (Mitra *et al*., 2015; Sutherland *et al*., 1999). Larvae of syrphids are the most important natural enemies of sap-sucking insect pests (aphids) and are useful bioagents in biological control programmes.

About 6,008 species of syrphid flies have been reported worldwide under 199 genera, in which 357 species of 69 genera are currently recorded in India (Pape, 2016). The syrphid larvae are found mostly in aquatic and terrestrial habitats, they can be phytophagous, predatory and scavengers. About 25% are predacious; mainly aphidophagous belong to the tribe Syrphinae and Eristalinae (Joshi & Ballal, 2013).

Earlier about 27 species of aphidophagous syrphid were reported from India in which 24 identified and 3 were unidentified species of Syrphidae (Agarwala *et al*., 1984). After reviewing many articles 48 species of syrphids are recognised as aphidophagous viz., *Allobaccha apicalis, Allobaccha sapphirina, Allograpta javana, Asarkina belli*, *Asarkina ericetorum*, *Asiobaccha nubilipennuis*, *Betasyrphus fletcheri*, *Betasyrphus isaaci*, *Betasyrphus linga*, *Betasyrphus serarius*, *Betasyrphus* sp., *Chrysotoxum baphyrum*, *Dideopsis aegrota*, *Epistrophe griseocincta*, *Episyrphus balteatus*, *Episyrphus viridaureus*, *Eristalinus aeneus*, *Eristalinus quinquelineatus*, *Eristalis cerealis*, *Eristalis tenax*, *Eumerus albifrons*, *Eumerus* nr. *albifrons*, *Eupeodes bucculatus*, *Eupeodes confrater*, *Eupeodes corollae*, *Eupeodes latifasciatus*, *Eupeodes* sp., *Ischiodon scutellaris*, *Ischiodon* sp., *Melanostoma orientale*, *Melanostoma univitatum*, *Microdon bellus*, *Palpada interrupta*, *Paragus politus*, *Paragus serratus*, *Paragus tibialis*, *Paragus yerburiensis*,

Scaeva albomaculata, *Scaeva latimaculata*, *Scaeva pyrastri*, *Scaeva selenitica*, *Sphaerophoria bengalensis*, *Sphaerophoria indiana*, *Sphaerophoria scripta*, *Sphaerophoria* sp., *Syrphus fulvifacies*, *Syrphus* sp., and *Xanthogramma* sp. These syrphids are predators of 72 known aphid species infesting more than 141 plants of different families. Among 48 species of syrphids, *E. balteatus* predates on a maximum number of aphid species (43 species) followed by *I. scutellaris* (34 species), *E. confrater* (20 species), *B. serarius* (18 species), *P. serratus* (17 species), and *A. javana* (12 species).

The information about the associations of the trophic levels within a community is essential to understanding the true nature of interaction among the food plants, herbivore insects and predators. These complexes are a source of information through which biological studies of predators can be made and are very helpful in programming a biocontrol approach against the pest. Hence, in the present review article, we have enlisted the list of syrphids with aphid prey species and their host plants (Table 1).

Table 1. List of aphidophagous syrphids with their aphid prey and host plants from India

1. *Allobaccha apicalis* (Loew, 1858), Syn. *Baccha nigricosta* (Brunetti, 1907), Syn. *Baccha apicalis* (Loew, 1858)		
Aphid species	**Host plants**	**References**
Unidentified aphids	Grass	Anand *et al*., 1967
2. *Allobaccha sapphirina,* (Wiedemann, 1830), Syn. *Baccha sapphirina* (Wiedemann, 1830)		
Unidentified aphids	*Citrus* sp.	Bhatia and Shaffi, 1932
3. *Allograpta javana* (Wiedemann, 1824), *Sphaerophoria javana* (Wiedemann, 1824), *Syrphus javana* (Wiedemann, 1824)		
Aphis craccivora	*Lablab purpureus*	Kumar *et al*., 2015
Aphis gossypii	*Gossypium* sp.	Bhatia and Shaffi, 1932; Ghorpade, 1973; Rao, 1969
	Lagenaria siceraria	Ahmad *et al.,* 2020; Kumar *et al*., 2015
Aphis odinae	*Mangifera indica*	Ghorpade, 1973
Cervaphis rappardi indica	*Cajanus cajan*	Shantibala *et al*., 1997
Lipaphis erysimi	*Brassica oleracea* var. *botrytis*	Agarwala *et al*., 1989
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1989
	Brassica rapa	Agarwala *et al*., 1989
	Raphanus sativus	Agarwala *et al*., 1989
Macrosiphum rosae	*Rosa* sp.	Agarwala *et al*., 1979
Melanaphis sacchari	*Sorghum bicolor*	Patnaik *et al*., 1977
	Zea mays	Patnaik *et al*., 1977
Myzus persicae	-	Ghorpade, 1973; Rao, 1969
Rhopalosiphum maidis	*Zea mays*	Ghorpade, 1973
Sitobion rosaeiformis	*Rosa* sp.	Agarwala *et al*., 1979; Raychaudhuri *et al*., 1978
Therioaphis trifolii	*Medicago sativa*	Ghorpade, 1973
Unidentified aphids	*Brassica* sp.	Agarwala *et al*., 1984
4. *Asarkina belli* Ghorpadé, (1994)		
Aphis gossypii	*Hibiscus rosasinensis*	Chinnu *et al*., 2023
5. *Asarkina ericetorum* (Fabricius, 1781)		
Aphis craccivora	*Lablab purpureus*	Ahmad *et al*., 2020; Kumar *et al*., 2015
Aphis gossypii	*Lagenaria siceraria*	Ahmad *et al*., 2020; Kumar *et al*., 2015
Aphis nasturtii	*Lagenaria siceraria*	Ahmad *et al*., 2020; Kumar *et al*., 2015
Unidentified aphids	*Zea mays*	Cherian,1934
6. *Asiobaccha nubilipennis* (Austen, 1893). Syn. *Allobaccha nubilipennuis* (Austen, 1893)		
Aphis aurantii	*Camellia sinensis*	Radhakrishnan and Murlidharan , 1993; 1991(1995); 1995
7. *Betasyrphus fletcheri* (Ghorpade, 1994)		

Table 1. Continued...

Aphis craccivora	*Lablab purpureus*	Joshi *et al*., 1997
	Vigna unguiculata	Joshi *et al*., 1997
8. *Betasyrphus isaaci* (Bhatia, 1933), Syn. *Syrphus isaaci* (Bhatia, 1933)		
Aphis aurantii	*Camellia sinensis*	Sharma *et al*., 2006
Lipaphis erysimi	*Brassica juncea*	Manpoong *et al*., 2016
	Brassica rapa	Bisht *et al*., 2006
Brevicoryne brassicae	*Brassica oleracea* var. *capitata*	Bisht *et al*., 2006
	Sinapis sp.	Bhatia and Shaffi, 1932
9. *Betasyrphus linga* (Ghorpade, 1994)		
Aphis craccivora	*Cajanus cajan*	Joshi *et al*., 1997
	Vigna unguiculata	Joshi *et al*., 1999b
Hyadaphis coriandari	*Foeniculum vulgare*	Udayakumar *et al*., 2023a
10. *Betasyrphus serarius* (Wiedemann, 1830)		
Aphis aurantii	*Camellia sinensis*	Devi *et al*., 2010; Radhakrishnan and Murlidharan, 1993; 1991(1995); 1995
Aphis craccivora	-	Ghorpade, 1981
Aphis gossypii	-	Ghorpade, 1981
	Brassica oleracea	Singh *et al*., 2002
	Solanum melongena	Chaudhary and Singh, 2012
Aphis solanella	-	Ghorpade, 1981
	Capsicum frutescens	Chaudhary and Singh, 2012
Aphis spiraecola	*Bidens pilosa*	Agarwala *et al*., 1979; Agarwala *et al*., 1984
Aphis verbasci	*Verbascum thapsus*	Das and Raychaudhuri, 1983
Brevicoryne brassicae	*Brassica oleracea* var. *capitata*	Bijaya *et al*.,1996; Devi *et al*., 1996
Hyperomyzus carduellinus	*Sonchus arvensis*	Ghosh *et al*., 1985
Lipaphis erysimi	*Brassica rapa*	Bhat and Bhagat, 2017
	Brassica juncea var. *rugosa*	Devi *et al*., 2002
	Brassica oleracea var. *botrytis*	Agarwala *et al*., 1989
	Brassica sp.	Agarwala *et al*., 1989
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1979; Agarwala *et al*., 1989; Agarwala *et al*., 1984; Devi *et al*., 1996; Rahman, 1940
	Raphanus sativus	Agarwala *et al*., 1989
Macrosiphum rosae	*Rosa canina*	Raychaudhuri *et al*., 1978
Macrosiphum rosaeformis	*Rosa* sp.	Agarwala *et al*., 1984
Myzakkaia verbasci	*Rubia cordifolia*	Das and Raychaudhuri, 1983
Myzus dycei	*Urtica dioica*	Ghosh *et al*., 1985
	Urtica sp.	Das and Raychaudhuri, 1983
Myzus persicae	*Brassica oleracea* var. *capitata*	Bijaya *et al*., 2006; Devi *et al*., 1996;
Myzus sorbi	*Sorbaria tomentosa*	Ghosh *et al*., 1985
Sitobion rosaeiformis	*Rosa bourboniana*	Kakkar and Sood, 1989
Uroleucon parasonchi	*Sonchus arvensis*	Ghosh *et al*., 1985
Unidentified aphids	*Helianthus* sp.	Agarwala *et al*., 1984
	Sinapis sp.	Agarwala *et al*., 1984
11. *Betasyrphus* sp.		
Aphis craccivora	*Cajanus cajan*	Chinnu *et al*., 2023
Aphis nerii	*Calotropis gigantea*	Chinnu *et al*., 2023
Lipaphis pseudobrassicae	*Brassica juncea*	Chinnu *et al*., 2023

Table 1. Continued...

Myzus persicae	-	Bisht *et al*., 2006
	Brassica juncea	Chinnu *et al*., 2023
	Prunus persica	Bisht *et al*., 2006
	Rosa spp.	Bisht *et al*., 2006
12. *Chrysotoxum baphyrum* (Walker, 1849)		
Tetraneura javensis	*Saccharum officinarum*	Patil *et al*., 2013
13. *Dideopsis aegrota* (Fabricius, 1805), Syn. *Asarkina aegrota* (Fabricius)		
Aphis aurantii	*Camellia sinensis*	Radhakrishnan and Murlidharan (1995; 1993; 1991(1995)
Aphis odinae	*Anacardium occidentale*	Maruthadurai and Singh, 2017; Vidya and Rajanna, 2014
Aphis craccivora	*Lablab purpureus*	Joshi *et al*., 1997
	Solanum melongena	Satpathi and Mandal, 2006
	Vicia faba	Ghorpade, 1981
	Vigna unguiculata	Joshi *et al*., 1999b
Aphis gossypii	*Psidium* sp.	Baskaran *et al*., 2009
	Solanum melongena	Satpathi and Mandal, 2006
Aphis spiraecola	*Artemisia vulgaris*	Agarwala *et al*., 1979; Rao, 1969
	Bidens pilosa	Agarwala *et al*., 1979; Agarwala *et al*., 1984
Ceratovacuna lanigera	*Saccharum officinarum*	Rabindra *et al*., 2002
Hyadaphis coriandari	*Foeniculum vulgare*	Udayakumar *et al*., 2023a
Myzus persicae	*Beta vulgaris*	Kumar *et al*., 2015; Parween *et al*., 2023
	Solanum melongena	Satpathi and Mandal, 2006
Rhopalosiphum maidis	*Beta vulgaris*	Kumar *et al*., 2015; Kumar and Ahmad, 2017
14. *Epistrophe griseocincta* (Brunetti, 1923)		
Rhopalosiphum maidis	*Hordeum vulgare*	Agarwala *et al*., 1979; Agarwala and Raychaudhari, 1981
15. *Episyrphus balteatus* (De Geer, 1776), Syn. *Syrphus balteatus* (De Geer)		
Acyrthosiphon pisum	*Pisum sativum*	Bhat and Bhagat, 2017
Aphis aurantii	*Camellia sinensis*	Bisht *et al*., 2006; Devi *et al*., 2010; Radhakrishnan and Murlidharan (1995; 1993; 1991(1995)
Aphis sp.	*Gossypium* sp. (Cotton)	Agarwala *et al*., 1984
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1984
	Zea mays	Agarwala *et al*., 1984
	various grasses	Agarwala *et al*., 1984
Aphis citricidus	*Citrus* sp.	Ghosh *et al*., 1985
Aphis craccivora	-	Rao, 1969
	Cajanus cajan	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Lablab purpureus	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Solanum melongena	Satpathi and Mandal, 2006
Aphis fabae	-	Ghorpade, 1981; Rao 1969
Aphis glycines	*Glycine max*	Singh and Singh, 2000

Table 1. Continued...

Aphis gossypii	*Brassica oleracea*	Singh *et al*., 2002
	Chrysanthemum sp.	Samuel *et al*., 2013
	Cajanus cajan	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Capsicum annum	Bisht *et al*., 2006; Bhat and Bhagat, 2017
	Chrysanthemum spp.	Bisht *et al*., 2006
	Coriandrum sativum	Bisht *et al*., 2006
	Cucumis sativus	Bisht *et al*., 2006 ; Bhat and Bhagat, 2017; Rao, 1969
	Cucurbita maxima	Bhat and Bhagat, 2017
	Fagopyrum esculentum	Bhat *et al*., 1986
	Fagopyrum kashmirianum	Bhat *et al*., 1986
	Fagopyrum tataricum	Bhat *et al*., 1986
	Solanum betaceum (Cyphomandra betaceae)	Agarwala *et al*., 1979
	Lagenaria siceraria	Bhat and Bhagat, 2017
	Psidium sp.	Baskaran *et al*., 2009
	Solanum melongena	Bhat and Bhagat, 2017; Satpathi and Mandal 2006
	Solanum tuberosum	Bisht *et al*., 2006; Bhat and Bhagat, 2017
Aphis kurosawai	*Artemisia vulgaris*	Ghosh *et al*., 1985
Aphis pomi	*Malus* sp.	Khan *et al*., 2016; Kumari, 2020
Aphis punicae	*Punica granatam*	Mohiuddin *et al*., 2019
Aphis solanella	*Capsicum frutescens*	Chaudhary and Singh, 2012
Aphis spiraecola	*Chromolaena odorata (Eupatorium odoratum)*	Agarwala *et al*., 1984
	Cosmos bipinnatus	Dubey and Singh, 2011
	Solanum nigrum	Ghosh *et al*., 1985
	Sonchus sp.	Chaudhary and Singh, 2012
Brachycaudus helichrysi	*Anaphalis margaritacea*	Ghosh *et al*., 1985
	Erigeron bonariensis	Ghosh *et al*., 1985
	Prunus amygdalus	Ghosh *et al*., 1985
	Prunus persica	Ghosh *et al*., 1985
Brevicoryne brassicae	*Brassica caulorapa*	Agarwala *et al*., 1984
	Brassica oleracea	Bhat and Bhagat, 2017
	Brassica oleracea var. *acephala*	Bhat and Bhagat, 2017
	Brassica oleracea var. *botrytis*	Agarwala *et al*., 1989, Bhat and Bhagat, 2017; Makhmoor and Verma, 1987
	Brassica oleracea var. *capitata*	Bisht *et al*., 2006; Bhat and Bhagat, 2017; Devi *et al*., 1996
	Brassica oleracea var. *gongylodes*	Bhat and Bhagat, 2017
	Brassica rapa	Bisht *et al*., 2006
	Brassica juncea	Singh *et al.,* 2020
	Raphanus sativus	Bisht *et al*., 2006
Cavariella aegopodii	*Daucus carota*	Bhat and Bhagat, 2017
Ceratovacuna lanigera	*Saccharum officinarum*	Rabindra *et al*., 2002
Cervaphis rappardi indica	*Cajanus cajan*	Shantibala *et al*., 1997
Uroleucon achilleae	-	Agarwala *et al*., 1984
Epipemphigus imaicus	*Populus alba*	Ghosh *et al*., 1985
	Populus ciliata	Ghosh *et al*., 1985
Epipemhigus sp.	*Populus citiata*	Bisht *et al*., 2006
Eriosoma lanigerum	*Malus domestica*	Bisht *et al.,* 2006

Table 1. Continued...

Eumyzus hydrangi	*Hydrangea scandens*	Ghosh *et al*., 1985
Eumyzus pruni	*Prunus cornuta*	Ghosh *et al*., 1985
Hayhurstia atriplicis	*Chenopodium album*	Ghosh *et al*., 1985
Hyadaphis coriandari	*Coriandrum sativum*	Bisht *et al*., 2006
	Foeniculum vulgare	Udayakumar *et al*., 2023a
Hyalopterus pruni	*Prunus persica*	Varatharajan *et al*., 1991
Lipaphis erysimi	*Brassica rapa*	Agarwala *et al.,* 1989; Bhat and Bhagat, 2017; Bisht *et al*., 2006; Kumar *et al*., 2015; Samuel *et al*., 2006; Samuel *et al*., 2013; Borah and Dutta., 2010
	Brassica juncea var. *rugosa*	Devi *et al*., 2002
	Brassica caulotrapa	Agarwala *et al*., 1984
	Brassica nigra	Agarwala *et al*., 1984
	Brassica oleracea var. *botrytis*	Agarwala *et al*., 1989
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1989; Devi *et al*., 1996; Devi *et al*., 2011; Devi *et al*., 2011; Samuel *et al*., 2005
	Raphanus sativus	Agarwala *et al*., 1989
	Triticum aestivum	Kumar *et al*., 2015
Lipaphis pseudobrassicae	*Brassica juncea*	Kumar *et al*., 1988
Macrosiphoniella pseudoartemisiae	*Artemisia vulgaris*	Ghosh *et al*., 1985
Macrosiphoniella sanborni	*Chrysanthemum indicum*	Kumar *et al*., 2015
	Chrysanthemum spp.	Agarwala *et al*., 1984; Bisht *et al*., 2006; Samuel *et al*., 2005
Melanaphis sacchari	*Sorghum bicolor*	Chaudhary and Singh, 2012
	Zea mays	Agarwala *et al*., 1979
Melanaphis sp.	*Pyrus pashia*	Ghosh *et al.*, 1985
Myzus dycei	*Urtica dioica*	Ghosh *et al*., 1985
Myzus persicae	*Brassica caulotrapa*	Agarwala *et al*., 1984
	Brassica juncea	Soni *et al*., 2021
	Brassica rapa	Bijaya *et al*., 2001
	Brassica nigra	Agarwala *et al*., 1984
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2006; Bisht *et al*., 2006; Devi *et al*.,1996; Singh *et al*.,1994
	Brassica oleracea gongylodes	Devi *et al*., 1999
	Capsicum annum	Bhat and Bhagat, 2017
	Cucumis sativus	Agarwala *et al*., 1979
	Cucurbita maxima	Bhat and Bhagat, 2017
	Solanum betaceum	Agarwala *et al*., 1984
	Prunus persica	Bisht *et al*., 2006
	Solanum melongena	Satpathi and Mandal, 2006
	Solanum tuberosum	Agarwala *et al*., 1979; Bisht *et al*., 2006; Bhat and Bhagat, 2017
	Solanum lycopersicum	Bhat and Bhagat, 2017
Prociphilu sp.	*Lonicera quinquelocularis*	Ghosh *et al*., 1985
Rhopalosiphum maidis	*Cenchrus americanus*	Chaudhary and Singh, 2012
	Triticum aestivum	Bisht *et al*., 2006
	Zea mays	Kumar *et al*., 2015; Kumar and Ahmad, 2017
Rhopalosiphum padi	*Triticum aestivum*	Bisht *et al*., 2006; Kumar *et al*., 2015; Kumar and Ahmad, 2017

Table 1. Continued...

Sappaphis sp.	*Cotoneaster bacillaris*	Ghosh *et al*., 1985
Shinjia orientalis	*Pteris* sp.	Ghosh *et al*., 1985
Sitobion avenae	*Triticum aestivum*	Bisht *et al*., 2006
Sitobion miscanthi	*Triticum aestivum*	Bisht *et al*., 2006; Kumar *et al*., 2015
Sitobion rosaeiformis	*Rosa* sp.	Agarwala *et al*., 1984; Bisht *et al*., 2006
	Rosa bourboniana	Kakkar and Sood, 1989
	Rosa indica	Chaudhary and Singh, 2012
16. *Episyrphus viridaureus* (Wiedmann, 1824). Syn. *Episyrphus alternans* (Macquart, 1842)		
Brevicoryne brassicae	*Brassica rapa*	Kumar *et al*., 1987
Lipaphis erysimi	*Brassica rapa*	Agarwala *et al*., 1989; Kumar *et al*., 1987
	Brassica juncea	Manpoong *et al*., 2016
	Brassica oleracea var. *botrytis*	Agarwala *et al*., 1989
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1989
	Raphanus sativus	Agarwala *et al*., 1989
Melanaphis sacchari	*Zea mays*	Agarwala *et al*., 1984
Myzus persicae	*Brassica rapa*	Kumar *et al*., 1987
Rhopalosiphum padi	*Triticum aestivum*	Dixit *et al*., 2019
Sitobion avenae	*Triticum aestivum*	Dixit *et al*., 2019
17. *Eristalinus aeneus* (Scopoli, 1763)		
Aphis pomi	*Malus* sp. (Apple plant)	Khan and Shah, 2018
18. *Eristalinus quinquelineatus* (Fabricius, 1781)		
Myzus persicae	*Capsicum annuum*	Kaur and Sangha, 2016
19. *Eristalis cerealis* (Fabricius, 1805)		
Aphis pomi	*Malus* sp. (Apple plant)	Khan and Shah, 2018
20. *Eristalis tenax* (Linnaeus, 1758)		
Aphis aurantii	*Camellia sinensis*	Sharma *et al*., 2006
Aphis craccivora	*Solanum melongena*	Satpathi and Mandal, 2006
Aphis gossypii	*Solanum melongena*	Satpathi and Mandal, 2006
Aphis pomi	*Malus* sp. (Apple plant)	Khan *et al*., 2016
Lipaphis erysimi	*Brassica juncea*	Kashyap *et al*., 2018
Macrosiphum sp.	*Rosa* spp.	Bisht *et al*., 2006
Myzus persicae	*Solanum melongena*	Satpathi and Mandal, 2006
21. *Eumerus albifrons* (Walker, 1852)		
Aphis craccivora	*Vigna unguiculata*	Mishra *et al*., 2013
Brevicoryne brassicae	*Brassica oleracea*	Mandal and Patnaik, 2006
Lipaphis erysimi	*Brassica oleracea*	Mandal and Patnaik, 2006
Myzus persicae	*Brassica oleracea*	Mandal and Patnaik, 2006
22. *Eumerus* nr. *albifrons* (Walker, 1852)		
Melanaphis sacchari	*Sorghum bicolor*	Patnaik *et al*., 1977
	Zea mays	Patnaik *et al*., 1977
23. *Eupeodes bucculatus* (Rondani, 1857), Syn. *Eupeodes frequens* (Matsmura, 1917), Syn. *Metasyrphus latilunulatus* (Collin, 1931)		
Aphis fabae	*Solanum nigrum*	Sood *et al*., 2007
Brevicoryne brassicae	*Brassica juncea*	Singh *et al.,* 2020
	Brassica oleracea	Sharma and Bhalla, 1991
	Brassica rapa	Kumar *et al*., 1987
Lipaphis erysimi	*Brassica rapa*	Kumar *et al*., 1987
Myzus persicae	*Brassica oleracea*	Sharma *et al*., 2020
	Brassica rapa	Kumar *et al*., 1987

Table 1. Continued...

24. *Eupeodes confrater* (Wiedemann, 1830), Syn. *Metasyrphus confrater* (Wiedemann, 1830), Syn. *Syrphus confrater*		
Aphis aurantii	*Camellia sinensis*	Devi *et al*., 2010
Aphis craccivora	-	Agarwala *et al*., 1984
	Lablab purpureus	Ghosh *et al*., 1981
	Phaseolus vulgaris	Bhat and Bhagat, 2017
	Rumex acetosella	Bhat and Bhagat, 2017
	Solanum lycopersicum	Bhat and Bhagat, 2017
Aphis fabae	-	Agarwala *et al*., 1984
	Solanum nigrum	Sood *et al*., 2007
Aphis gossypii	*Biden pilosa*	Agarwala *et al*., 1979
	Brassica oleracea	Singh *et al*., 2002
	Chrysanthemum sp.	Chaudhary and Singh, 2012
	Cucumis sativus	Bisht *et al*., 2006
Aphis spiraecola	*Biden pilosa*	Agarwala *et al*., 1979
Brachycaudus helichrysi	*Prunus amygdalus*	Ghosh *et al*., 1985
	Prunus persica	Ghosh *et al*., 1985
Brevicoryne brassicae	*Brassica rapa*	Bisht *et al*., 2006; Kumar *et al.,* 1987;
	Brassica oleracea var. *botrytis*	Makhmoor and Verma 1987
	Brassica oleracea var. *capitata*	Devi *et al*., 1996
Ceratovacuna lanigera	*Saccharum officinarum*	Sarma *et al*., 2007
Cervaphis rappardi indica	*Cajanus cajan*	Shantibala *et al*., 1997
Epipemphigus imaicus	*Populus ciliata*	Ghosh *et al*., 1985
Eriosoma lanigerum	*Malus sylvestris*	Agarwala *et al*., 1984
	Malus domestica	Bisht *et al*., 2006
Lipaphis erysimi	-	Agarwala *et al*., 1984
	Brassica nigra	Ghosh *et al*., 1981
	Brassica rapa	Agarwala *et al*., 1989; Bhat and Bhagat, 2017; Kumar *et al.,* 1987
	Brassica juncea	Singh and Singh, 2013
	Brassica juncea var. *rugosa*	Devi *et al*., 2002
	Brassica oleracea var. *botrytis*	Agarwala *et al*., 1989
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1989; Devi *et al*., 1996
	Raphanus sativus	Agarwala *et al*., 1989
Lipaphis pseudobrassicae	*Brassica juncea*	Kumar *et al*., 1988
Macrosiphum rosae	*Rosa* spp.	Verma and Sharma, 2006
Macrosiphoniella sanborni	-	Agarwala *et al*., 1984
Myzus persicae	*Brassica juncea*	Kumar *et al*., 1988
	Brassica rapa	Kumar *et al.,* 1987
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2006; Devi *et al*., 1996; Singh *et al*.,1994
	Brassica oleracea gongylodes	Devi *et al*., 1999
	Tagetes erecta	Bhagat *et al*., 2018
Sitobion miscanthi	*Triticum* spp.	Agarwala *et al*., 1984
Tuberculatus nervatus	*Quercus serrata*	Singh *et al*., 1995
Uroleucon carthami	*Carthamus tinctorius*	Jha *et al*., 1998
Unidentified	*Brassica* spp.	Agarwala *et al*., 1984
	Gossypium sp.	Agarwala *et al*., 1984
	Sinapis spp.	Agarwala *et al*., 1984
	Triticum spp.	Agarwala *et al*., 1984

Table 1. Continued...

25. *Eupeodes corollae* (Fabricius, 1794), Syn. *Metasyrphus corolle* (Fabricius), Syn. *Syrphus corollae* (Fabricius)		
Aphis aurantii	*Camellia sinensis*	Sharma *et al*., 2006
Aphis gossypii	*Fagopyrum esculentum*	Bhat *et al*., 1986
	Fagopyrum kashmirianum	Bhat *et al*., 1986
	Fagopyrum tataricum	Bhat *et al*., 1986
Aphis pomi	*Malus domestica*	Bhagat *et al*., 1988
Brachycaudus helichrysi	*Prunus persica*	Ghosh *et al*., 1985
Brevicoryne brassicae	*Brassica oleracea* var. *botrytis*	Makhmoor and Verma, 1987
	Brassica juncea	Ghosh *et al*., 1985
	Raphanus sativus	Agarwala *et al*., 1981
Eriosoma lanigerum	*Malus domestica*	Ghosh *et al*., 1985
Hyperomyzus carduellinus	*Sonchus oleraceus*	Ghosh *et al*., 1985
Lipaphis erysimi	*Brassica rapa*	Bisht *et al*., 2006; Bhat and Bhagat, 2017
	Brassica napus	Bhat and Bhagat, 2017
Macrosiphum sp.	*Rosa* spp.	Bisht *et al*., 2006
Myzus dycei	*Urtica dioica*	Ghosh *et al*., 1985
Myzus persicae	*Raphanus sativus*	Agarwala *et al*., 1981
26. *Eupeodes latifasciatus* (Macquart, 1829)		
Chaitophorus kapuri	*Populus ciliata*	Ghosh *et al*., 1985
Macrosiphoniella pseudoartemisiae	*Artemisia vulgaris*	Ghosh *et al*., 1985
27. *Eupeodes* sp.		
Brevicoryne brassicae	*Brassica napus* var. *napus*	Lakhanpal and Raj, 1998
Lipaphis erysimi	*Brassica napus* var. *napus*	Lakhanpal and Raj, 1998
Myzus persicae	*Brassica napus* var. *napus*	Lakhanpal and Raj, 1998
28. *Ischiodon scutellaris* (Fabricius, 1805), Syn. *Xanthogramma scutellare*		
Acyrthosiphon pisum	*Pisum sativum*	Agarwala *et al*., 1979
Acyrthosiphon rubi	*Rubus ellipticus*	Das and Raychaudhuri, 1983
Aphis aurantii	*Camellia sinensis*	Bisht *et al*., 2006; Radhakrishnan and Murlidharan (1995; 1993; 1991(1995);
	Camellia sinensis	Devi *et al*., 2010
Aphis craccivora	*Cajanus cajan*	Joshi *et al*., 1997
	Lablab purpureus	Agarwala *et al*., 1984; Ahmad *et al*., 2020; Joshi *et al*., 1997; Kumar *et al*., 2015;
	Phaseolus vulgaris	Ahmad *et al*., 2020; Kumar *et al*., 2015;
	Solanum melongena	Satpathi and Mandal, 2006
	Rumex acetosella	Bhat and Bhagat, 2017
	Vicia faba	Agarwala *et al.,* 1984
	Vigna mungo	Ahmad *et al*., 2020
	Vigna radiata	Kumar *et al*., 2015
	Vigna unguiculata	Joshi *et al*., 1997, Joshi *et al*., 1999a
	Unknown	Agarwala *et al*., 1979
Aphis fabae	*Luffa aegyptica*	Kumar *et al*., 2015
Aphis glycines	*Glycine max*	Singh and Singh, 2000

Table 1. Continued...

Aphis gossypii	*Capsicum annum*	Bisht *et al*., 2006
	Abelmoschus esculentus	Udayakumar *et al*., 2023b
	Brassica oleracea	Singh *et al*., 2002
	Cajanus cajan	Chaudhary and Singh, 2012
	Chromolaena odorata	Chinnu *et al*., 2023
	Coccinea grandis	Ahmad *et al*., 2020
	Coccinia sp.	Kumar *et al*., 2015
	Croton sp.	Ahmad *et al*., 2020
	Cucumis sativus	Chinnu *et al*., 2023
	Cucumis sp.	Bisht *et al*., 2006
	Fagopyrum esculentum	Bhat *et al*., 1986
	Fagopyrum kashmirianum	Bhat *et al*., 1986
	Fagopyrum tataricum	Bhat *et al*., 1986
	Gossypium hirsutum	Joshi *et al*., 1999a
	Gossypium sp.	Agarwala *et al*., 1984
	Hibiscus rosasinensis	Kumar *et al*., 2015; Ahmad *et al*., 2020
	Lagenaria siceraria	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Luffa aegyptica (Luffa cylindrica)	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Momordica charantia	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Phaseolus vulgaris	Bisht *et al*., 2006
	Psidium guajava	Mani and Krishnamoorthy, 1989; Baskaran *et al*., 2009; Bisht *et al*., 2006
	Solanum melongena	Agarwala *et al*., 1979; Agarwala *et al*., 1984; Satpathi, 1999; Satpathi and Mandal, 2006
	Solanum tuberosum	Nonita *et al*., 2002
Aphis nerii	*Calotropis gigantea*	Joshi *et al*., 1999a
	Calotropis procera	Chaudhary and Singh, 2012
Aphis odinae	*Anacardium occidentale*	Maruthadurai and Singh, 2017; Vidya and Rajanna, 2014
Aphis ruborum	*Rubus ellipticus*	Ghosh *et al*., 1985
Aphis solanella	*Capsicum frutescens*	Chaudhary and Singh, 2012
Aphis spiraecola	*Artemisia vulgaris*	Agarwala *et al*., 1984
	Cosmos bipinnatus	Dubey and Singh, 2011
	Spiraea hypericifolia	Chaudhary and Singh, 2012
	Unknown	Agarwala *et al*., 1979
Aphis verbasci	-	Agarwala *et al*., 1984
	Verbascum thapsus	Ghosh *et al*., 1985
Brevicoryne brassicae	*Brassica juncea*	Soni *et al*., 2021
	Brassica rapa	Kumar *et al*., 1987
	Brassica caulorapa	Agarwala *et al*., 1979
	Brassica nigra	Agarwala *et al*., 1984
	Brassica oleracea var. *capitata*	Devi *et al*., 1996
	Raphanus sativus	Ghosh *et al*., 1985
Capitophorus formosartemisiae	*Artemisia vulgaris*	Ghosh *et al*., 1985
Ceratovacuna lanigera	*Saccharum officinarum*	Patil *et al*., 2006
Hyadaphis coriandari	*Coriandrum sativum*	Bisht *et al*., 2006
	Foeniculum vulgare	Udayakumar *et al*., 2023a

Table 1. Continued...

Hyalopterus pruni	*Prunus persica*	Varatharajan *et al*., 1991
Hyperomyzus carduellinus	*Lactuca virosa*	Udayakumar *et al*., 2023b
Hysteroneura setariae	*Cyperus rotundus*	Chaudhary and Singh, 2012
Lipaphis erysimi	*Brassica rapa*	Agarwala *et al*., 1989; Bhat and Bhagat, 2017; Kumar *et al*., 1987
	Brassica caulorapa	Agarwala *et al*., 1979
	Brassica juncea	Joshi *et al*., 1999a; Singh and Singh 2013
	Brassica juncea var. *rugosa*	Devi *et al*., 2002
	Brassica nigra	Agarwala *et al*., 1984
	Brassica oleracea var. *botrytis*	Agarwala *et al*., 1989
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1989; Devi *et al*., 1996;
	Raphanus sativus	Agarwala *et al*., 1989
Lipaphis pseudobrassicae	*Brassica juncea*	Kumar *et al*., 1988
Macrosiphum rosae	*Rosa indica*	Ali *et al*., 2009
Melanaphis sacchari	*Sorghum bicolor*	Chaudhary and Singh, 2012
Myzus persicae	*Brassica juncea*	Soni *et al*., 2021
	Brassica rapa	Kumar *et al*., 1987
	Brassica oleracea var. *capitata*	Agarwala *et al*., 1984; Bijaya *et al*., 2006; Devi *et al*., 1996; Singh *et al*.,1994;
	Brassica oleracea gongylodes	Devi *et al*., 1999
	Hibiscus rosasinensis	Kumar *et al*., 2015
	Hibiscus sabdariffa	Parween *et al*., 2023
	Nicotiana tabacum	Agarwala *et al.,*1984
	Prunus persica	Bisht *et al*., 2006
	Solanum melongena	Agarwala *et al*., 1979; Satpathi and Mandal, 2006
	Solanum tuberosum	Agarwala *et al*., 1984; Bisht *et al*., 2006
Myzus sorbi	*Sorbaria tomentosa*	Ghosh *et al*., 1985
Phorodon cannabis	*Cannabis sativa*	Ghosh *et al*., 1985
Rhopalosiphum maidis	*Zea mays*	Joshi *et al*., 1999a; Kumar *et al*., 2015; Singh and Mishra, 1988; Swaminathan *et al*., 2015; Kumar and Ahmad 2017
	Triticum aestivum	Bisht *et al*., 2006
Rhopalosiphum nymphaeae	*Verbena laciniata*	Ali *et al*., 2009
Rhopalosiphum padi	*Triticum aestivum, Zea mays*	Bisht *et al*., 2006
Sitobion avenae	*Triticum aestivum*	Dixit *et al*., 2019
Sitobion miscanthi	*Triticum aestivum*	Kumar *et al*., 2015
Sitobion rosaeiformis	*Rosa indica*	Chaudhary and Singh, 2012
Uroleucon (Uromelan) compositae	*Carthamus tinctorius*	Joshi *et al*., 1999a
29. *Ischiodon* sp.		
Uroleucon carthami	*Carthamus tinctorius*	Jha *et al*., 1998
30. *Melanostoma orientale* (Wiedemann, 1824)		
Aphis clematidis	*Clematis buchananiana*	Ghosh *et al*., 1985
Aphis craccivora	*Solanum melongena*	Satpathi and Mandal, 2006
Aphis gossypii	*Solanum melongena*	Satpathi and Mandal, 2006
Brevicoryne brassicae	*Brassica juncea*	Ghosh *et al*., 1985
	Brassica oleracea	Ghosh *et al*., 1985
	Brassica rapa	Bisht *et al*., 2006

Table 1. Continued...

Lipaphis erysimi	*Brassica juncea*	Sharma *et al*., 1997
	Brassica rapa	Bisht *et al*., 2006
	Sinapis sp.	Agarwala *et al*., 1984
Melanophis sacchari	*Saccharum officinarum*	Agarwala *et al*., 1979
Myzus persicae	*Brassica rapa*	Kumar *et al*., 2015
		Parween *et al*., 2023
	Solanum melongena	Satpathi and Mandal, 2006
Rhopalosiphum maidis	*Hordeum vulgare*	Agarwala *et al*., 1979
	Triticum aestivum	Ghosh *et al*., 1985
Sitobion rosaeiformis	*Rosa* spp.	Agarwala *et al*., 1984
31. *Melanostoma univittatum* (Wiedemann, 1824)		
Acyrthosiphon pisum	*Pisum sativum*	Bhat and Bhagat, 2017
Aphis craccivora	*Phaseolus vulgaris*	Bhat and Bhagat, 2017
	Rumex nepalensis	Bhat and Bhagat, 2017
Lipaphis erysimi	*Brassica rapa*	Bisht *et al*., 2006; Bhat and Bhagat, 2017
	Cucumis sativus	Bisht *et al*., 2006
32. *Microdon bellus* (Brunetti, 1923)		
Aphis craccivora	*Solanum melongena*	Satpathi and Mandal, 2006
Aphis gossypii	*Solanum melongena*	Satpathi and Mandal, 2006
Myzus persicae	*Solanum melongena*	Satpathi and Mandal, 2006
33. *Palpada interrupta* (Fabricius, 1805), Syn. *Eristalis interruptus* (Fabricius, 1805)		
Aphis pomi	*Malus* sp. (Apple plant)	Khan *et al*., 2016
34. *Paragus politus* (Wiedemann, 1830), Syn. *Paragus indicus* (Brunetti, 1908)		
Aphis craccivora	*Solanum melongena*	Satpathi and Mandal, 2006
Aphis gossypii	*Solanum melongena*	Satpathi and Mandal, 2006
Aphis spiraecola	*Bidens pilosa*	Raychaudhuri *et al*., 1978
Myzus persicae	*Solanum melongena*	Satpathi and Mandal, 2006
35. *Paragus serratus* (Fabricius, 1805)		
Acyrthosiphon pisum	*Pisum sativum*	Chaudhary and Singh, 2012
Aphis aurantii	*Camellia* sp.	Devi *et al*., 2010
Aphis citricidus	*Citrus* sp.	Chinnu *et al*., 2023
Aphis craccivora	*Cajanus cajan*	Joshi *et al*., 1997
	Cirsium wallichii	Agarwala *et al*., 1984
	Cyamopsis tetragonoloba	Chinnu *et al*., 2023
	Gliricidia maculata	Chinnu *et al*., 2023
	Lablab purpureus	Ahmad *et al*., 2020; Joshi *et al*., 1997; Kumar *et al*., 2015
	Phaseolus vulgaris	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Vicia faba	Raychaudhuri *et al*., 1978
	Vigna mungo	Ahmad *et al*., 2020
	Vigna radiata	Kumar *et al*., 2015
	Vigna unguiculata	Joshi *et al*. (1997, 1999a)
Aphis glycines	*Glycine max*	Singh and Singh, 2000
Aphis gossypii	*Ageratum conyzoides*	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Brassica oleracea	Singh *et al*., 2002
	Cajanus cajan	Kumar *et al*., 2015
	Gossypium hirsutum	Joshi *et al*., 1999
	Hibiscus rosasinensis	Ahmad *et al*., 2020; Kumar *et al*., 2015

Table 1. Continued...

	Lagenaria siceraria	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Psidium guajava	Baskaran *et al*., 2009; Mani and Krishnamoorthy, 1989
	Solanum melongena	Devi *et al*., 2008
Aphis nerii	*Calotropis gigantea*	Joshi *et al*., 1999
	Nerium oleander	Ahmad *et al*., 2020; Kumar *et al*., 2015
Aphis odinae	*Anacardium occidentale*	Vidya and Rajanna, 2014; Maruthadurai and Singh, 2017
Aphis spiraecola	*Ageratum conyzoides*	Ahmad *et al*., 2020; Kumar *et al*., 2015
	Lagenaria siceraria	Ahmad *et al*., 2020; Kumar *et al*., 2015
Brevicoryne brassicae	*Brassica oleracea*	Singh *et al*., 2002
Hyadaphis coriandari	*Foeniculum vulgare*	Udayakumar *et al*., 2023a
Lipaphis erysimi	*Brassica rapa*	Bhat and Bhagat, 2017
	Brassica juncea	Joshi *et al*., 1999
	Brassica juncea var. *rugosa*	Devi *et al*., 2002
	Brassica nigra	Ghosh *et al*., 1981
Myzus persicae	*Brassica oleracea* var. *capitata*	Bijaya *et al*., 2006
	Brassica rapa	Bijaya *et al*., 2001
	Prunus persica	Bisht *et al*., 2006
Rhopalosiphum maidis	*Zea mays*	Joshi *et al*., 1999
Rhopalosiphum nymphaeae	*Solanum tuberosum*	Kumar and Ahmad, 2017
Tetraneura nigriabdominalis	*Cicer arietinum*	Agarwala *et al*., 1984
	Citrullus lanatus	Agarwala *et al*., 1984
	Gossypium sp.	Agarwala *et al*., 1984
	Helianthus tuberosus	Agarwala *et al*., 1984
	Panicum sp.	Agarwala *et al*., 1984
	Phyllanthus emblica	Agarwala *et al*., 1984
	Pisum sp.	Agarwala *et al*., 1984
	Saccharum officinarum	Agarwala *et al*., 1984
	Solanum sp.	Agarwala *et al*., 1984
	Zea mays	Agarwala *et al*., 1984
Uroleucon compositae	*Carthamus tinctorius*	Joshi *et al*., 1999
36. *Paragus tibialis* (Fallen, 1817)		
Aphis aurantii	*Camellia sinensis*	Radhakrishnan and Murleedharan (1995; 1993; 1991(1995);
Aphis clematidis simlaensis	*Clematis buchaniana*	Ghosh *et al*., 1985
Aphis craccivora	*Phaseolus vulgaris*	Bhat and Bhagat, 2017
Aphis fabae	*Rumex nepalensis*	Ghosh *et al*., 1985
Aphis gossypii	*Coccinea grandis*	Agarwala *et al*., 1984
	Fagopyrum esculentum	Bhat *et al*., 1986
	Fagopyrum kashmirianum	Bhat *et al*., 1986
	Fagopyrum tataricum	Bhat *et al*., 1986
	Gossypium sp.	Agarwala *et al*., 1984
	Leucas aspera	Agarwala *et al*., 1984
Aphis spiraecola	*Bidens pilosa*	Agarwala *et al*., 1979
Capitophorus formosartemisiae	*Artemisia vulgaris*	Ghosh *et al*., 1985
Metopolophium sp.	*Stephania hernandiifolia*	Das and Raychaudhuri, 1983
Myzus persicae	*Nicotiana tabacum*	Rao, 1969

Table 1. Continued...

	Osbeckia crinita	Agarwala *et al*., 1984
Rhopalosiphum maidis	*Sorghum bicolor*	Chaudhary and Singh, 2012
Unidentified aphis	*Centaurea* sp.	Agarwala *et al*., 1984
	Sonchus sp.	Agarwala *et al*., 1984
37. *Paragus yerburiensis* (Stuckenberg, 1954)		
Aphis craccivora	-	Rao, 1969
	Cajanus cajan	Joshi *et al*., 1997
	Lablab purpureus	Joshi *et al*., 1997
	Solanum melongena	Satpathi and Mandal, 2006
	Vigna unguiculata	Joshi *et al*., 1997
Aphis gossypii	*Gossypium* sp.	Rao, 1969
	Solanum melongena	Satpathi and Mandal (2006)
Aphis spiraecola	*Bidens pilosa*	Agarwala *et al*., 1979
Aphis odinae	*Anacardium occidentale*	Vidya and Rajanna, 2014
Myzus persicae	*Nicotiana tabacum*	Rao, 1969
	Solanum melongena	Satpathi and Mandal, 2006
38. *Scaeva albomaculata* (Macquart, 1842)		
Lipaphis erysimi	-	Rao, 1969
Myzus persicae	-	Rao, 1969
39. *Scaeva latimaculata* (Brunetti, 1923), Syn. *Xanthogramma pruthii* (Deoras, 1943)		
Brevicoryne brassicae	*Brassica rapa*	Kumar *et al*., 1987
	Brassica juncea	Kumar *et al*., 1988
Hyperomyzus carduellinus	*Emilia sonchifolia*	Agarwala *et al*., 1984
Lipaphis erysimi	*Brassica rapa*	Kumar *et al*., 1987
	Raphanus sativus	Sharma *et al*., 1997
Lipaphis pseudobrassicae	*Brassica juncea*	Kumar *et al*., 1988
Myzus persicae	*Brassica rapa*	Kumar *et al*., 1987
	Luffa graveolens	Deoras, 1943
40. *Scaeva pyrastri* (Linnaeus, 1758)		
Aphis fabae	*Solanum nigrum*	Sood *et al*., 2007
Aphis pomi	*Malus domestica*	Bhagat *et al*., 1988
Brevicoryne brassicae	*Brassica oleracea* var. *botrytis*	Makhmoor and Verma, 1987
	Raphanus sativus	Agarwala *et al*., 1984
Myzus persicae	*Brassica oleracea*	Sharma *et al*., 2020
	Raphanus sativus	Agarwala *et al*., 1984
Unidentified aphid	*Brassica* spp.	Rao, 1969
41. *Scaeva selenitica* (Meigen, 1822), Syn. *Lasiopticus selenitica* (Meigen)		
Acyrthosiphon rubi	*Rubus ellipticus*	Das and Raychaudhuri, 1983
Brevicoryne brassicae	*Brassica oleracea* var. *capitata*	Bisht *et al*., 2006
	Raphanus sativus	Bisht *et al*., 2006
Lipaphis erysimi	*Brassica rapa*	Bisht *et al*., 2006
	Sinapis sp.	Anand *et al*., 1967
Rhopalosiphum maidis	*Triticum aestivum*	Bisht *et al*., 2006
42. *Sphaerophoria bengalensis* (Macquart, 1842)		
Aphis gossypii	*Fagopyrum esculentum*	Bhat *et al*., 1986
	Fagopyrum kashmirianum	Bhat *et al*., 1986
	Fagopyrum tataricum	Bhat *et al*., 1986
Aphis punicae	*Punica granatam*	Mohiuddin *et al*., 2019
43. *Sphaerophoria indiana* (Bigot, 1884)		
Aphis craccivora	*Solanum melongena*	Satpathi and Mandal, 2006

Table 1. Continued...

Aphis gossypii	*Solanum melongena*	Satpathi and Mandal, 2006
	Brassica oleracea var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2011
	Brassica juncea var. *rugosa*	Bijaya *et al*., 2011
Brevicoryne brassicae	*Brassica rapa*	Kumar *et al*., 1987
	Brassica oleracea var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2011; Devi *et al*., 1996;
	Brassica juncea var. *rugosa*	Bijaya *et al*., 2011
Lipaphis erysimi	*Brassica rapa*	Kumar *et al*., 1987
	Brassica oleracea var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2011; Devi *et al*., 1996;
	Brassica juncea var. *rugosa*	Bijaya *et al*., 2011; Devi *et al*., 2002;
	Sinapis sp**.**	Agarwala *et al*., 1984
Lipaphis pseudobrassicae	*Brassica juncea*	Kumar *et al*., 1988
Melanaphis sacchari	*Sorghum bicolor*	Patnaik *et al*., 1977
	Zea mays	Patnaik *et al*., 1977
Myzus persicae	*Brassica rapa*	Kumar *et al*., 1987
	Brassica oleracea var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2006; Bijaya *et al*., 2011; Devi *et al*., 1996;
	Brassica juncea var. *rugosa*	Bijaya *et al*., 2006; Bijaya *et al*., 2011;
	Nicotiana tabacum	Agarwala *et al*., 1984
	Solanum melongena	Satpathi and Mandal, 2006
Unidentified aphids	*Coriandrum* sp.	Agarwala *et al*., 1984
	Gossypium sp.	Agarwala *et al*., 1984
	Pisum sp.	Agarwala *et al*., 1984
	Triticum sp.	Agarwala *et al*., 1984
44. *Sphaerophoria scripta* (Linnaeus, 1758)		
Aphis craccivora	*Lablab purpureus*	Agarwala *et al*., 1979
	Phaseolus vulgaris	Bhat and Bhagat, 2017
	Rumex acetosella	Bhat and Bhagat, 2017
	Solanum lycopersicum	Bhat and Bhagat, 2017
	Solanum tuberosum	Bhat and Bhagat, 2017
Aphis gossypii	*Capsicum annum*	Agarwala *et al*., 1979
	Fagopyrum esculentum	Bhat *et al*., 1986
	Fagopyrum kashmirianum	Bhat *et al*., 1986
	Fagopyrum tataricum	Bhat *et al*., 1986
Aphis pomi	*Malus* sp.	Khan *et al*., 2016; Khan and Shah, 2018
Brachycaudus helichrysi	*Ageratum conyzoides*	Agarwala *et al*., 1979
Brevicoryne brassicae	*Brassica oleracea* var. *Acephala*	Bhat and Bhagat, 2017
	Brassica oleracea var. *botrytis*	Bhat and Bhagat, 2017
	Brassica oleracea var. *Gongylodes*	Bhat and Bhagat, 2017
	Brassica juncea	Ghosh *et al*., 1985
	Brassica sp.	Bhat and Bhagat, 2017
	Raphanus sativus	Bisht *et al*., 2006
Liosomaphis himalayensis	*Berberis asiatica*	Ghosh *et al*., 1985

Table 1. Continued...

Lipaphis erysimi	*Brassica rapa*	Bisht *et al*., 2006; Bhat and Bhagat, 2017
	Brassica napus	Bhat and Bhagat, 2017
	Brassica nigra	Ghosh *et al*., 1981
Macrosiphum rosae	*Rosa* sp.	Agarwala *et al*., 1979
Myzus persicae	*Solanum tuberosum*	Ghosh *et al*., 1985
Mollitrichosiphum nandii	*Alnus nepalensis*	Agarwala *et al*., 1979
Sitobion miscanthi	*Triticum aestivum*	Ghosh *et al*., 1985
Sitobion rosaeiformis	*Rosa* sp.	Agarwala *et al*., 1979
45. *Sphaerophoria* sp.		
Aphis craccivora	*Solanum melongena*	Satpathi and Mandal, 2006
Brevicoryne brassicae	*Brassica oleracea* var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2011
	Brassica juncea var. *rugosa*	Bijaya *et al*., 2011
Aphis gossypii	*Solanum melongena*	Satpathi and Mandal, 2006
	Brassica oleracea var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2011
	Brassica juncea var.*rugosa*	Bijaya *et al*., 2011
Lipaphis erysimi	*Brassica oleracea* var. *botrytis*	Bijaya *et al*., 2011
	Brassica oleracea var. *capitata*	Bijaya *et al*., 2011
	Brassica juncea var.*rugosa*	Bijaya *et al*., 2011; Devi *et al*., 2002
	-	Rao, 1969
Myzus persicae	**-**	Rao, 1969
	Solanum melongena	Satpathi and Mandal, 2006
Sitobion avenae	*Triticum aestivum*	Dixit *et al*., 2019
46. *Syrphus fulvifacies* (Brunette, 1913)		
Aphis aurantii	*Camellia sinensis*	Sharma *et al*., 2006
Brevicoryne brassicae	*Brassica oleracea* var.*capitata*	Bisht *et al*., 2006
	Brassica juncea	Ghosh *et al*., 1985
Macrosiphoniella pseudoartemisiae	*Artemisia vulgaris*	Ghosh *et al*., 1985
Macrosiphum sp.	*Rosa* spp.	Bisht *et al*., 2006
47. *Syrphus* sp.		
Aphis gossypii	*Chrysanthemum* spp.	Bisht *et al*., 2006
Lipaphis erysimi	*Brassica rapa*	Bisht *et al*., 2006; Bhat and Bhagat, 2017
Macrosiphum rosaeformis	*Rosa* spp.	Bisht *et al*., 2006
Myzus dycei	*Urtica* sp.	Agarwala *et al*., 1984
Myzus persicae	*Brassica rapa*	Bisht *et al*., 2006
Rhopalosiphum maidis	*Triticum aestivum*	Bisht *et al*., 2006
Rhopalosiphum padi	*Triticum aestivum*	Bisht *et al*., 2006
Sitobion miscanthi	*Triticum aestivum*	Bisht *et al*., 2006
48. *Xanthogramma* sp.		
Acyrthosiphon pisum	**-**	Anand *et al*., 1967
Acyrthosiphon rubi	*Rubus ellipticus*	Das and Raychaudhuri, 1983
Hyperomyzus carduellinus	*Emilia sonchifolia*	Agarwala *et al*., 1981a
Lipaphis erysimi	*Brassica* spp.	Anand *et al*., 1967
	Coriandrum sp.	Anand *et al*., 1967
	Pisum sp.	Anand *et al*., 1967

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