AN INVESTIGATION ON THRIPS FAUNA OF GUILAN PROVINCE, NORTH OF IRAN (INSECTA: THYSANOPTERA)

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ABSTRACT: Seventeen species of thrips (Insecta: Thysanoptera) were collected in the present survey from various plants in Guilan province. A fungus feeding genus, *Hoplothrips* was recorded from Iran for the first time. Ecological information about all these 17 species is provided. Three species, *Franklineilla intonsa*, *Microcephalothrips abdominalis* and *Thrips tabaci* are considered as *Tospovirus* vectors in Guilan provience.

KEY WORDS: Thrips, Thysanoptera, Guilan provience, fauna, *Hoplothrips*.

Approximately 5800 species are currently recognised in the insect order Thysanoptera (Mound, 2010), and about one hundred of these species have been considered as crop pests, causing damage by feeding or by transmitting virus diseases to growing crops (Lewis, 1997). Most pest Thysanoptera are members of the family Thripidae (Mound, 1997). The significance of thrips as crop pests has been reviewed by Lewis (1997). Thrips that are serious crop pests are usually highly adaptable and polyphagous species. This adaptability is reflected not only in their capacity to feed on various sources, but also in variation in length of larval life, body size at pupation, pupation site, and threshold temperatures for development (Morse & Hoddle, 2006).

Very little is known about the Thysanoptera fauna of Iran. Particularly the information related to the species composition of thrips and their significance as potentially phytophagous or carnivorous is lacking (Minaei et al., 2000). The objectives of the present work were to identify the thrips fauna of Guilan province, their distribution and hosts.

MATERIAL AND METHODS

Thrips specimens have been collected into 60% ethyl alcohol. The specimens were beaten from flowers and leaves. A small plastic beating tray was used and speciments picked off with a small brush into the collecting fluid in plastic ependorf tubes contained a pencil written label of plant, locality and date.

A microscopic slide mount using Hoyers Mountant was prepared using a form of the protocol given in world Thyasanoptera (http://anic.ento.csiro.au/thrips/field_lab/index.html).

RESULT AND DISCUSION

In this survey, 17 species of Thysanoptera belonging to 3 families (Aeolothripidae, Phlaeothripidae and Thripidae) in Guilan province are reported

(Table 1). In this list the genus *Hoplothrips* is recorded in Iran for the first time. In this study two females of this genus were collected so it is not possible to recognize that at species level with the materials. The species of this genus are living under bark of trees, on fungi or in turf (Priesner, 1965).

All of Thyasoptera recorded here are associated with green plants, although two species, *A. intermedius* and *A. collaris* are persumbly faculatative predators. It is demonstrated that "host records" based on winged adults that have dispersed from their breeding site is unreliable (Mound, 2005). In Iran there are many host plant records for thrips that may be not true and Minaei et al. (2007) gave some examples of these misunderstanding. So it is not possible to assume that there is a real association with thrips and plants which recorded here (Table 1). Three species recorded here including *F. intonsa*, *Microcephalothrips abdominalis* and *T. tabaci* are reported as vector of tospoviruses around the world (Ullman et al., 1997). Tomato spotted wilt virus (TSWV) has been recorded in Iran, and transmission of cineraria (*Senecio* sp.) isolate of TSWV has been confirmed by *Thrips tabaci* (Rasoulpour & Izadpanah, 2003). In addition a new *Tospovirus* species infecting tomato namely Tomato fruit yellow ring virus has been recorded in Iran and *Microcephalothrips abdominalis* is recorded as the vector (Ghotbi et al., 2003; Ghotbi et al., 2005). So they can be considered as important pest thrips. *Chirothrips manicatus* is widely reported as a pest of grasses (Minaei & Mound, 2010). In U.S.A., infestation of Bent Grass (*Agrostis* sp.) by this species was estimated at 32% (Rao & Alderman, 2005).

Pseudodendrothrips mori is reported as pest of mulbery in Guilan province (Etebari et al., 1999). *Taeniothrips inconsequens* (Uzel, 1895) and *Tenothrips frici* are resposbile for damage to flowers in some part of world (Lewis, 1997) and Iran (Esmaeili, 1983). *Thrips flavus* is the first thrips recorded in Iran by Afshar (1938) as a cotton pest however this species is polyphagous (Zur Strassen, 2003). *Thrips meridionalis* (Priesner) is collecting on various Rosaceae and Fabaceae (Zur Strassen, 2003) and in this study this host relashinship was confirmed.

Thrips nigropilosus, lives on Asteraceae flowers and widespread in Europe, also in North America, and in Kenya reported as a pest of Pyrethrum (Mound et al., 1976). *Haplothrips aculeatus* is widespread from Europe to Japan on various Poaceae, and has been found commonly on such plants in north and south Iran (Minaei & Mound, 2008). The species is recorded from various parts of Iran (Bhatti et al., 2007). *Haplothrips reuteri* is considered to be both common and widespread from south-eastern Europe to India particularly in flowers of various Asteraceae (Minaei & Mound, 2008). It has been recorded from several localities in Iran (Bhatti et al., 2007) and considered as a dominant species in Shiraz region (Minaei & Alichi, 2001).

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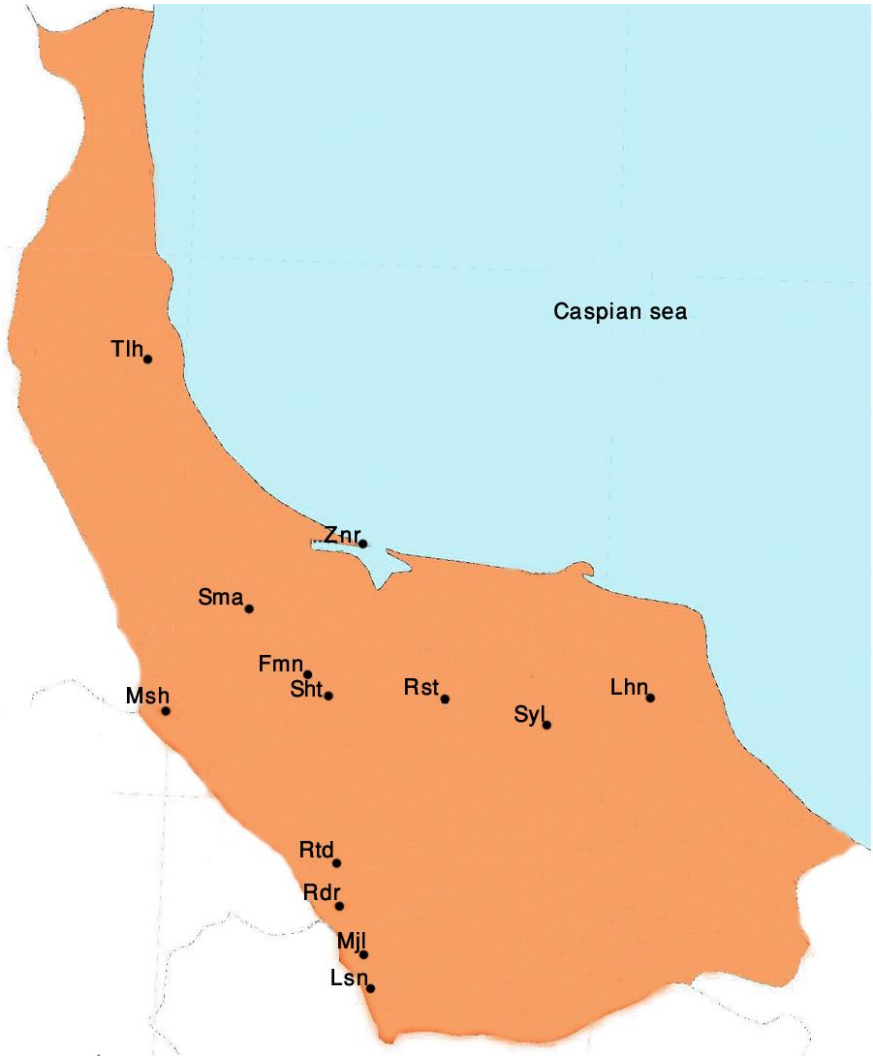
Insect / Host	Family	Species	Location
Volpia sp	Aeolothripidae	*Aeolothrips intermedius*	Rasht
Tagetes sp		*Aeolothrips colaris*	Shaft
Echinochola colonum	Thripidae	*Chirothrips manicatus*	Rodbar,Lahijan, Talesh
Daucus carota, *Chenopodium album*, *Cucurbita* sp		*Frankliniella intonsa*	Manjil,Shaft, Rasht,
Rubus sp		*Frankliniella tenuicornis*	Siahkal,Lahijan
Rosa sp		*Microcephalothrips abdominalis*	Rasht
Centurea sp		*Pseudodendrothrips mori*	Masoleh
Acer saccharum		*Taeniothrips inconsequens*	Somesara
Sinapis arvensis		*Tenothrips frici*	Rasht
Hypericum perforatum		*Thrips flavus*	Lahijan,Anzali, Shaft,Rasht
Pronus sp, *Medicago* sp		*Thrips meridionalis* (Priesner)	Rasht
Polygonum persicaria, *Tamarix tetrandra* , *Achillea* sp		*Thrips nigropilosus*	Rostam abad,Shaft, Rodbar,Loshan
many plants		*Thrips tabaci*	
Oenothera biennis, *Helianthus tuberosus*, *Oryza sativa*	Phlaeothripidae	*Haplothrips aculeatus*	Somesara,Shaft, Rasht,Fooman
Erigeron annu		*Haplothrips distinguendus*	Rostam abad,Siahkal, Shaft
Helianthus annus, *Hoplothrips* sp		*Haplothrips reuteri*	Rodbar,Shaft, Somesara



Tlh: Tlesh **Sht:Shaft** **Lhn:Lahijan** **Lsn:Loshan**

Znr: Zibakenar **Msh:Masooleh** **Rtd:Rostamabad**

Sma: Someh sara **Rst:Rasht** **Rdr:Roudbar**

Fmn: Fooman **Syl:Syahkal** **Mjl:Manjil**