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Arthropods of the Limarí basin (Coquimbo region, Chile): agricultural importance in agricultural ecosystems

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Abstract

Arthropods are an important group of organisms in agricultural ecosystems due to their ecological impact as pollinators and agents of natural pest control. Some species, however, may damage crops and be vectors for diseases or reservoirs of zoonoses that may affect human populations. The economic impact of arthropods may be a limiting factor of production and development in fragile and vulnerable ecosystems, as is the case of the Limarí basin in the Coquimbo region – an important agricultural area within the semiarid region of Chile. In view of the limited amount of information available about potential pests and natural enemies of the main crops cultivated in the Limarí Valley, we analyzed the agricultural importance of arthropods in the Limarí basin. After reviewing historical data, specimen collections, and the literature, a total of 412 arthropods species of agricultural importance were recorded, 92.5% of them insects and the rest (31 species) arachnids. Around 25% of the species were quarantined species in foreign markets, and 21.8% were species that may have a positive impact on agriculture. Within Insecta, the genera Aleurothrixus, Trialeurodes (Hemiptera: Aleyrodidae), and Pseudococcus (Hemiptera: Pseudococcidae) were the main groups associated to agricultural crops containing species of quarantine importance for foreign markets. We hope that this species inventory serves as a basis for identifying biological vulnerabilities in a basin, which has seen a continuous expansion of productive land in recent years.

Keywords: *agricultural pests, arid zones, Limari valley, quarantine species, transverse valleys, Chile.*

INTRODUCTION

The significance of arthropods for agricultural production systems lies in their ecological role as pollinators and natural pest controllers (Naranjo *et al*., 2015). However, the majority of arthropod species are harmful agents that damage crops – potentially reducing its productivity – or attack stored products (Elgueta, 1993; Artigas, 1994). Arthropods can also be vectors and reservoirs of zoonotic agents or behave as ectoparasites, with severe economic losses to cattle-raising systems and direct consequences to human health (Canals and Cattan, 2006). For these reasons, controlling arthropod pests in products destined for export is critical, since many of these pests are of quarantine significance in certain destination markets (e.g., the US) (Follett and Neven, 2006).

The Norte Chico area in semiarid Chile extends from 27° to 32° S, encompassing the Atacama and Coquimbo regions. This area is characterized by the presence of an intermediate depression interspersed with mountain ranges that give origin to transverse valleys that extend from the Andes to the Pacific Ocean (DGA, 1986). In the Norte Chico, the valleys of Copiapó (27-28° S) and Huasco (28-29° S) in the Atacama region and the valleys of Elqui (30° S), Limarí (31° S) and Choapa (32° S) in the Coquimbo region form a

semiarid matrix characterized by scarce and disperse precipitation and the presence of permanent, mixed regime rivers (Romero *et al*., 1998).

Significant among these transverse valleys is the Limarí River basin, considered to be the most economically important food and agricultural center (INE, 2007), featuring secondary production activities such as small-scale agriculture, cattle raising and small-scale mining (Cortés, 2016). Nowadays the surface of the Limarí valley is covered by forage (25,456 ha), fruit (20,151 ha), grapevine (8.353 ha) and vegetable (4,753 ha) crop lands (INE, 2007).

Most of the agricultural production is destined for foreign markets (e.g., the US, Japan, Europe) subject to international phytosanitary requirements (FAO, 2000). The most economically important fruit crops include grapevines (7,321.7 ha), avocado trees (4,128.0 ha), olives (2,511.2 ha), and mandarin trees (1,573.4 ha) (INE, 2007; CIREN, 2015). Consequently, pest control is very important for agricultural exports since some arthropod species can severely affect the agricultural ecosystems' production and result in the products being rejected in their destination markets (Moore-Tello, 2009).

The economic impacts of the damage caused by arthropods are more severe in fragile and vulnerable ecosystems, such as the basins of semiarid Chile, particularly the Limarí basin, the most important agricultural area of the semiarid region of Chile (INE, 2007). The objective of this study was to document agriculturally important arthropod species in the Limarí River basin (Coquimbo Region, Chile).

MATERIAL AND METHODS

The study site

The study area comprised the three basins associated to, or influenced by, the Limarí River (Coquimbo Region, Chile), namely, the Limarí River basin itself, the coastal basin of the Elqui and Limarí rivers, and the coastal basin of the Limarí and Choapa rivers (Figure 1). The limits of these three basins were defined based on 1:250,000 maps (Shapefile) from the Instituto Geográfico Militar (IGM). The predominant soil types in the area are entisols, aridisols, and inceptisols, all of which show some influence from the vegetation (Morales, 2006). The climate is steppe type, ranging from steppe with abundant clouds in the coast to cold steppe in the mountainous areas (Novoa and López, 2001). The mean annual precipitation exceeds 300 mm in mountainous areas and reaches 60 mm to 240 mm in the lowlands near the coast (2001). The annual temperature is homogeneous in the coast, but varies in the interior valleys and mountainous areas (DMC, 2001). Far from the influence of the sea, the vegetation in the interior areas corresponds to an interior steppe scrubland (Gajardo, 1993; Squeo *et al*., 2001).

Capture methods and data collection

To investigate the agricultural importance of arthropods in the Limarí basin, distributional data of arthropod species records was collected based on a review of reference material deposited in the following entomological collections: Juan Enrique Barriga Collection (JEBC); Laboratorio de Entomología Ecológica, Universidad de La Serena, La Serena, Chile (LEULS); and Museo Entomológico Luis Peña, Departamento de Sanidad Vegetal, Facultad de Ciencias Agronómicas, Universidad de Chile, Santiago, Chile (MEUC). Additionally, data from entomological prospections conducted between 2009 and 2015 in the Limarí Province was provided by the Servicio Agrícola y Ganadero de Chile (SAG [Chilean Agricultural and Livestock Service]). Lastly, these records were supplemented with distributional data from the literature and data from manual prospections and captures conducted using entomological nets and UV light between June and October of 2015. The captured material was cleaned, dried, and preserved in alcohol (80% for Acari and 70% for Insecta) until processing and mounting. All the collected material is deposited at the Laboratorio de Entomología Ecológica of Universidad de La Serena (LEULS). Acari was taxonomically identified based on Krantz (1978) and Rojas (2005), whereas Araneae was characterized following Ramírez (1999) and the World Spider Catalog (2020). Within Insecta, the taxonomic identification of Coleoptera followed Barriga

(1990, 2020), Barriga *et al*. (1993), Elgueta and Marvaldi (2006), Vidal and Guerrero (2007), Solervicens (2014), Moore and Vidal (2015), González (2020); for Lepidoptera, Artigas (1994), Estay and Bruna (2002), Angulo *et al*. (2006); for Hemiptera, Ripa and Rodríguez (2000), Estay and Bruna (2002), Castro da Costa (2010); for Diptera, Estay and Bruna (2002); and for Hymenoptera, Rojas (2005).

RESULTS AND DISCUSSION

A total of 412 agriculturally important arthropods species were recorded in the study area, 92.5% (381 species) of them insects (Insecta) and only 7.5% arachnids (Tables 1 and 2).

Among arachnids, the mite *Panonychus citri* (McGregor) (Acari: Tetranychidae) was the main phytophagous species on citrus fruits, followed by *Brevipalpus chilensis* Baker (Acari: Tenuipalpidae) and *Oligonychus* sp. (Acari: Tetranychidae), the latter two phytophagous on fruit trees (Table 1). Of these species, the native *B. chilensis* is a pest of quarantine significance that causes severe economic damage to grapevine trees (González, 1989).

Within Insecta, the genera *Aleurothrixus*, *Trialeurodes* (Homoptera: Aleyrodidae), and *Pseudococcus* (Hemiptera: Pseudococcidae) were the main groups associated with agricultural fields (e.g., fruit trees, vegetables) in the Limarí basin (Table 2). Aleyrodidae is a group of insects associated with a large number of crops that can affect the plants' resilience due to their sap-sucking characteristics (Tello *et al*., 2013). Among the species of quarantine significance for the European and Mediterranean Plant Protection Organization (EPPO), we recorded *Aleurothrixus floccosus* Maskell, *Aleurothrixus porteri* Quaintance & Baker, and *Aleurothrixus* sp. (Hemiptera: Aleyrodidae), phytophagous whiteflies on citrus trees, cucurbits, and nightshades (Table 2).

Another significant group in the Limarí basin is the family Pseudococcidae, one of the major phyosanitary problems for table grape exports in Chile as a result of their quarantine significance in several foreign markets (González, 2011). Some species, such as *Pseudococcus viburni* (Signoret), *Pseudococcus meridionalis* Prado, and *Pseudococcus cribata* González, are very common in Chilean vineyards (Correa *et al*., 2012) and may affect the resilience of plants (Artigas, 1994) and transmit viruses (Douglas and Krüger, 2008) (Table 2). Control of this group in the Limarí basin depends on the correct taxonomic identification of the specimens found in the fields, a task that is not easy considering that many of these families are cryptic. In recent years, this problem has been tackled by molecular profiling of the specimens of certain Chilean populations (Correa *et al*., 2012; Correa *et al*., 2015).

The results have shown that 25% of the taxa recorded in the basin are species of quarantine significance for foreign export markets (Table 2). However, several species of these species are under control or have been eradicated from the Coquimbo Region and the rest of the country, such as the Mediterranean fruit fly *Ceratitis capitata* (Wiedemann) (Diptera: Tephritidae), one of the major pests, whose larvae cause serious damage to fruits. Currently, the Sistema Nacional de Detección de Moscas de la Fruta (SNDMF [Chilean Fruit Fly Detection System]), under the direction of SAG (Servicio Agrícola y Ganadero), has the mission of confirming the eradication of this insect in the country and conducting control activities against the potential arrival of this pest in Chile (Lobos *et al*., 2005), as was the case in March 2015 when five adults and a focus of *C. capitata* larvae were detected in the urban area of the municipality of La Serena (SAG, 2015a; SAG, 2015b). In that same year, SAG put an end to the Mediterranean fruit fly eradication campaign in the municipalities of La Serena and Coquimbo, declaring the area free from this dipteran (SAG, 2015c).

In a different front, efforts are still underway to control and eradicate the European grapevine moth *Lobesia botrana* (Denis & Schiffermuller) (Lepidoptera: Tortricidae), a species of economic significance in Europe that arrived in Chile, Argentina, and California in the period 2008-2010 (González, 2010; Mutis *et al*., 2014). Currently, the National Program for the Eradication of *Lobesia botrana*, under the direction of SAG, is conducting control and eradication activities against this insect in the Atacama, Coquimbo, Valparaíso, Biobío, and Araucanía regions, using pheromone traps (Mutis *et al*., 2014) and authorized pesticides (SAG, 2016).

It is estimated that 21.8% of the arthropods recorded in the Limarí basin may have positive implications for agriculture due to their role as biologic controllers (predators and parasitoids), pollinators, saprobionts, or mycophagists. Within this group, the most important species were *Parastethorus histrio* Chauzeau (Coleoptera: Coccinellidae), a predator of *Tetranychus urticae* C.L. Koch (Acari: Tetranychidae), followed by *Hippodamia* (*Adonia*) *variegata* (Goeze) (Coleoptera: Coccinellidae) (Table 1).

In view of the increase in the distribution of agricultural pests, it is essential to incorporate predator insects able to reduce pest attacks on crops as well as understand the population dynamics of these controller species in the ecosystems (New 2007; Sorribas *et al*., 2016). For the above reasons, more bionomic studies on pests are required as predictive tools to propose control actions against these organisms (González, 1981; López-García, 2011).

The expansion of crop fields towards dryland areas is a radical change in the landscape composition (Alcayaga *et al*., 2013) that directly affects the richness of several arthropod groups, including pests and natural predators (Jonsson *et al*., 2012; Inclán *et al*., 2015a). Several authors have suggested that the increased extent of high-intensity agricultural systems may lower species diversity and the abundance of natural enemies (Macfadyen *et al*., 2011; Lohaus *et al*., 2013). Consequently, it is expected that the expansion of technified crop fields towards dryland hillsides will favor the colonization, establishment and population growth of some arthropod groups in the Elqui basin (Coquimbo Region) (Pizarro-Araya *et al*., 2009; Zuleta *et al*., 2009; Young *et al*., 2010). However, it is yet unclear how the changes in the landscape shape the species composition and how the population dynamics of natural enemies behaves (Inclán *et al*., 2015b), processes that should be further studied in the transverse valleys of the Norte Chico.

CONCLUSIONS

The majority of the arthropod species of agricultural significance found in the study area were insects, which shows the huge diversity of this group and the availability of habitats and resources in the Limarí basin to support them. A significant proportion (25%) of the taxa recorded in this area were species of quarantine significance, with some genera – mostly insects, e.g., Aleyrodidae and Pseudococcidae – being primary pests in several crops, mainly export fruits, that require constant control of their local population densities. We hope that the data presented in this paper serves to characterize the level of threat and benefit of the arthropods of agricultural significance in this highly productive basin of the semiarid region of the Norte Chico of Chile.

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Table 1: Records of mites (Arachnida: Acari) found in the Limarí Basin (Coquimbo Region, Chile): the scientific name, the source, and their economic importance are indicated.

Order	Family	Scientific name	Source	Economic significance
Acari	Anystidae	Anystidae sp.	SAG	Predates on *Boophilus microplus*
	Ascidae	Ascidae sp.	SAG	Predates on *Lycoriella auripila* and *Ephestia kuehniella*
	Eriophyidae	*Aceria granati*	SAG	Phytophagous on *Punica granatum*
		Aceria sheldoni	LEULS	Phytophagous on citrus trees
		Aculops lycopersici	SAG	Phytophagous on olive trees
		Calepitrimerus vitis	SAG	Phytophagous on grapevine trees
		Colomerus vitis	SAG	Phytophagous on grapevine trees
		Eriophyes erineus	SAG	Phytophagous on *Juglans regia*
		Eriophyes sheldoni	SAG	Phytophagous on *Citrus* spp.
		Oxycenus maxwelli	SAG	Phytophagous on olive trees
	Eupodidae	Eupodidae sp.	SAG	Predates on nematodes
	Phytoseidae	Phytoseidae sp.	SAG	Predates on Acari
	Ixodidae	*Rhipicephalus sanguineus*	LEULS	*Babesia canis* infection
	Tenuipalpidae	*Brevipalpus chilensis*	SAG, LEULS	Phytophagous on fruit trees; species of quarantine significance in the US
		Brevipalpus obovatus	SAG	Phytophagous on citrus trees
		Brevipalpus sp.	SAG	Phytophagous on fruit trees and ornamental plants
	Tetranychidae	*Bryobia rubrioculus*	SAG	Phytophagous on apple trees
		Bryobia sp.	SAG	Phytophagous on cereals
		Eotetranychus lewisi	SAG	Phytophagous on fruit trees
		Eotetranychus sp.	SAG	Phytophagous on grapevine trees
		Oligonychus ilicis	SAG	Phytophagous on *Juglans regia*
		Oligonychus vitis	SAG	Phytophagous on fruit trees
		Oligonychus sp.	SAG	Phytophagous on grapevine trees
		Panonychus citri	SAG, LEULS	Phytophagous on citrus trees
		Panonychus ulmi	SAG	Phytophagous on fruit trees
		Tetranychidae sp.	SAG	Phytophagous
		Tetranychus cinnabarinus	SAG	Phytophagous on tomatoes
		Tetranychus desertorum	SAG	Phytophagous on beans, cucurbits, and apricots
		Tetranychus urticae	SAG	Phytophagous on fruit trees and vegetables
		Tetranychus sp.	SAG	Phytophagous on fruit trees and vegetables
	Tydeidae	*Lorrya* sp.	SAG	Phytophagous

Abbreviations: LEULS: Laboratorio de Entomología Ecológica, Universidad de La Serena, SAG: Servicio Agrícola y Ganadero.

Table 2: Records of insects (Insecta) found in the Limarí Basin (Coquimbo Region, Chile): the scientific name, the source, and their economic importance are indicated.

Order	Family	Scientific name	Source	Economic significance
Coleoptera	Aderidae	*Aderus* sp.	JEBC	Saprophagous
	Anthicidae	*Ischyropalpus curtisi*	SAG	Predates on Acari
		Ischyropalpus sp.	SAG	Predates on Acari
	Cantharidae	Cantharidae sp.	SAG	Predates on insects
	Carabidae	*Anisotarsus* sp.	SAG	Predates on *Inopus rubriceps;* generalist
		Callidula nigrofasciata	SAG	Predates on insects
		Calosoma vagans	JEBC	Predates on Lepidoptera larvae; generalist
		Carabidae sp.	SAG	Predates on insects
		Metius sp. 2	JEBC	Predates on *Premnotrypes latithorax* (Curculionidae); generalist
		Trirammatus striatula	LEULS	Predates on Aphididae species; generalist
	Chrysomelidae	*Chelymorpha varians*	SAG, LEULS	Phytophagous on Convolvulaceae (*Convolvulus* and *Ipomaea*) spp.; species of quarantine significance in the US
		Pachybrachis sp.	SAG	Phytophagous on *Baccharis* spp.; *Pachybrachis pallens* is a species of quarantine significance in the US
		Phaedon semimarginatus	SAG	Phytophagous on *Baccharis linearis* and *Baccharis* spp.
		Procalus viridis	SAG	Phytophagous on *Lithraea caustica*
		Procalus sp.	LEULS	Phytophagous on *Lithraea caustica*
		Xanthogaleruca luteola	SAG	Phytophagous on *Ulmus* spp.
	Chrysomelidae: Bruchinae	*Lithraeus egenus*	SAG, JEBC	Controls *Plantago* spp. weed; spermophagous; species of quarantine significance in the US
		Lithraeus elegans	SAG, JEBC	Spermophagous on *Lithraea caustica*; genus of quarantine significance in the US
		Lithraeus leguminarius	JEBC	Spermophagous; genus of quarantine significance in the US
		Lithraeus mutatus	JEBC	Spermophagous; genus of quarantine significance in the US
		Lithraeus pyrrhomelas	JEBC	Spermophagous; genus of quarantine significance in the US
		Lithraeus sp.	SAG	Spermophagous on *Schinus* spp.; genus of quarantine significance in the US
		Megacerus eulophus	SAG	Controls Convolvulaceae weed; spermophagous; species of quarantine significance in the US
		Penthobruchus germaini	SAG	Spermophagous on the ornamental *Parkinsonia aculeata*
		Pseudopachymerina spinipes	SAG, JEBC	Spermophagous on *Acacia caven*
		Rhipibruchus picturatus	MEUC	Spermophagous on *Prosopis* spp.
		Scutobruchus ceratioborus	JEBC	Spermophagous on *Prosopis* spp.
		Stator sp.	SAG	Spermophagous on *Acacia* spp.; *Stator cearanus* is a species of quarantine significance in the US
		Stator tigrensis	SAG	Spermophagous on *Acacia visco* (ornamental)
	Cleridae	*Corinthiscus denticollis*	JEBC	Predates on xylophagous species
	Coccinellidae	*Adalia angulifera*	SAG, JEBC, LEULS	Predates on *Myzocallis coryli* (Aphididae); generalist
		Adalia bipunctata	SAG, LEULS	Predates on Aphididae species
		Adalia deficiens	SAG, JEBC, LEULS	Predates on *Myzocallis coryli* (Aphididae)
		Clitosthetus arcuatus	SAG	Predates on *Siphoninus phillyreae* and *Saissetia* spp.

		Coccidophilus arrowi	JEBC	Predates on Diaspididae
		Coccidophilus transandinus	JEBC	Predates on *Quadraspidiotus perniciosus*
		Cryptolaemus montrouzieri	LEULS, SAG	Predates on *Planococcus* spp. and *Pseudococcus* spp.
		Eriopis chilensis (nec *concinna*)	JEBC, SAG, LEULS	Predates on *Myzocallis coryli* and Aphididae
		Harmonia axyridis	SAG, LEULS	Predates on Aphidoidea, insects and other coccinellids
		Hippodamia (*Adonia*) *variegata*	SAG, JEBC, LEULS	Predates on *Sitobion avenae* and *Metopolophium dirhodum*, generalist on Aphididae
		Hippodamia convergens	LEULS	Predates on *Anagasta kuehniella* (Pyralidae) and Aphididae
		Hippodamia sp.	SAG	Predates on *Sitobion avenae* and *Metopolophium dirhodum*
		Hyperaspis nana	SAG	Predates on Coccidae
		Hyperaspis sphaeridioides	SAG, JEBC	Predates on *Rhopalosiphum maidis* y *Acyrthosiphon pisum*
		Olla v-nigrum	SAG	Predates on *Diaphorina citri*
		Parastethorus histrio	SAG	Predates on *Tetranychus urticae*
		Psyllobora bicongregata	SAG	Mycophagous (predates on *Erysiphe* spp.)
		Rhyzobius lophantae	SAG, LEULS	Predates on *Aonidiella aurantii*
		Rodolia cardinalis	SAG	Predates on *Icerya purchasi*
		Scymnus (*Pullus*) *bicolor*	JEBC, SAG	Predates on *Aphis gossypii* (Aphididae)
		Scymnus (*Pullus*) *loewii*	JEBC, SAG	Predates on *Aphis gossypii* (Aphididae)
	Cryptophagidae	*Chiliotis* sp.	JEBC	Attacks stored products
		Cryptophagus sp.	SAG	Attacks stored products
	Curculionidae	*Acarapion ferruginosum*	JEBC	Phytophagous and carpophagous, feeds on *Acacia caven*
		Apocnemidophorus obsoletus	JEBC	Phytophagous
		Apocnemidophorus pruinosus	JEBC	Phytophagous
		Asynonychus cervinus	SAG, LEULS	Phytophagous on fruit trees and grasslands; of quarantine significance in Japan
		Cylydrorhinus sp.	SAG	Phytophagous
		Geniocremnus angustirostris	MEUC	Phytophagous; genus of quarantine significance
		Gonipterus scutellatus	LEULS	Phytophagous on *Eucalyptus* spp.
		Hyperoides subcinctus	LEULS	Phytophagous on vegetables and grasslands; species of quarantine significance in the US
		Listroderes bimaculatus	LEULS	Phytophagous; genus of quarantine significance
		Listroderes difficilis	SAG, JEBC, LEULS	Phytophagous on vegetables; genus of quarantine significance
		Listroderes sp.	SAG, LEULS	Phytophagous on vegetables; genus of quarantine significance in the US
		Naupactus leucoloma	SAG, LEULS	Phytophagous on vegetables and grasslands; species of quarantine significance in the US
		Naupactus xanthographus	SAG, LEULS	Phytophagous on fruit trees; species of quarantine significance in the US
		Platyaspistes venustus	LEULS	Phytophagous on fruit trees and vegetables; genus of quarantine significance in the US
		Platyaspistes sp.	SAG	Phytophagous on fruit trees and vegetables; genus of quarantine significance in the US
		Sibinia albovittata	JEBC	Of unknown biology; species of quarantine significance in the US
		Sibinia sp.	SAG	Of unknown biology; genus of quarantine significance in the US
		Sitona discoideus	SAG	Phytophagous on Fabaceae; species of quarantine significance in the US
		Smicronyx argentinensis	JEBC	Phytophagous; species of quarantine significance in the US
		Sphenophorus	LEULS	Phytophagous on *Penniseturn* spp., *Cyperus* spp.,

		brunnipennis		and *Juncus* spp.; species of quarantine significance in the US
		Strangaliodes sp.	SAG	Phytophagous
	Dermestidae	*Megatoma* sp.	SAG	Predates on *Naupactus xanthographus* (dead insect carcasses)
		Trogoderma sp.	SAG, JEBC	Attacks stored products
	Elateridae	*Antitypus insignitus*	JEBC	Associated with *Proustia* sp. and *Acacia caven*
		Candanius gracillimus	JEBC, MEUC	Predates on xylophagous larvae of Cerambycidae and Anobiidae
		Conoderus sp.	SAG	Phytophagous; genus of quarantine significance in the US
		Elater abdominalis	JEBC	Phytophagous; genus of quarantine significance in the US
		Stenocebrio coquimbensis	JEBC	Phytophagous
	Erotylidae	*Loberus* sp.	JEBC	Phytophagous on *Puya chilensis*
	Histeridae	*Teretrius* sp.	SAG	Predates on *Prostephanus truncatus*
	Latridiidae	*Aridius* sp.	SAG	Attacks stored products; mycophagous
		Cartodere sp.	SAG	Attacks stored products (yeast); mycophagous
		Corticaria sp. 2	JEBC	Attacks stored products; mycophagous, feeds on spores
		Melanophthalma sp.	SAG	Predates on *Medicago sativa* pests; mycophagous
		Melanophthalma sp. 1	JEBC	Predates on *Medicago sativa* pests; mycophagous
		Melanophthalma sp. 2	JEBC	Predates on *Medicago sativa* pests; mycophagous
	Mauroniscidae	*Amecocerus* sp.	JEBC	Phytophagous
	Meloidae	*Picnoseus flavipennis*	JEBC	Phytophagous
	Melyridae	*Arthrobrachus flavipennis*	SAG	Phytophagous; host to Convolvulaceae, Asteraceae, and Geraniaceae species
		Arthrobrachus limbatus	SAG, JEBC	Phytophagous; host to Convolvulaceae, Asteraceae, and Geraniaceae species
		Arthrobrachus nigromaculatus	JEBC	Phytophagous; host to Convolvulaceae, Asteraceae, and Geraniaceae species
		Arthrobrachus sp.	SAG	Phytophagous; host to Convolvulaceae, Asteraceae, and Geraniaceae species
		Brachidia ruficollis	JEBC	Phytophagous
		Dasytes sp.	SAG	Phytophagous on *Lepidium draba*
	Nitidulidae	*Carpophilus hemipterus*	SAG	Attacks stored products and overripe fruits Pollinator
		Carpophilus humeralis	SAG	Attacks stored products and overripe fruits Pollinator
		Carpophilus lugubris	SAG, MEUC	Attacks stored products and overripe fruits Pollinator
		Carpophilus sp.	SAG	Attacks stored products and overripe fruits Pollinator
		Cybocephalus sp.	SAG	Predates on Diaspididae (Coccoidea)
	Oedemeridae	*Ananca* sp.	JEBC	Phytophagous
		Ananca sp. 1	JEBC	Phytophagous
	Ptinidae	*Lasioderma serricorne*	LEULS	Attacks stored products
		Ptinus sp.	SAG	Attacks stored products
		Ptinus sp. 1	JEBC	Attacks stored products
		Ptinus sp. 14	JEBC	Attacks stored products
		Ptinus sp. 15	JEBC	Attacks stored products
		Ptinus sp. 16	JEBC	Attacks stored products
		Ptinus sp. 20	JEBC	Attacks stored products
		Ptinus sp. 24	JEBC	Attacks stored products
		Ptinus sp. 25	JEBC	Attacks stored products
		Stegobium paniceum	LEULS, MEUC	Attacks stored products
	Scarabaeidae	*Arctodium vulpinum*	LEULS, Pizarro-Araya et al., (2015)	Phytophagous; genus of quarantine significance in the US
		Athlia rustica	LEULS, Pizarro-Araya *et al.*,	Phytophagous on grapevine trees and a variety of roots

			(2015)	
		Liogenys palpalis	LEULS, Pizarro-Araya *et al.*, (2015)	Phytophagous
		Aulacopalpus castaneus	LEULS	On topsoil, saprophagous and rhizophagous; species of quarantine significance in the US
		Aulacopalpus ciliatus	LEULS	On topsoil, saprophagous and rhizophagous; species of quarantine significance in the US
		Hylamorpha elegans	SAG, LEULS	Phytophagous on grasslands and Poaceae (larvae)
		Labarrus pseudolividus	MEUC, LEULS	Detritivorous on cow dung
		Lichnia gajardoi	LEULS, Pizarro-Araya *et al.*, (2015)	Phytophagous
		Lichnia sp.	SAG	Phytophagous
		Pacuvia philippiana	LEULS, MEUC, Pizarro-Araya *et al.*, (2015)	Phytophagous on fruit trees
		Tomarus villosus	LEULS, MEUC	Phytophagous on grasslands (larvae)
	Scirtidae	*Cyphon* sp.	SAG	Saprophagous
	Scolytidae	*Pagiocerus frontalis*	SAG	Phytophagous on *Zea mays*
	Staphylinidae	*Atheta obscuripennis*	JEBC	Inhabits hydrophilic forests, xerophilous scrub, and spiny thickets, in the Fray Jorge National Park; saprophagous and predator
		Baeocera sp.	JEBC	Mycophagous
		Baeocera sp. 2	JEBC	Mycophagous
		Oligota pygmaea	SAG	Predates on *Oligonychus yothersi*
	Tenebrionidae	*Blapstinus punctulatus*	SAG, Pizarro-Araya & Cepeda-Pizarro (2013)	Phytophagous and saprophagous; species of quarantine significance in the US
		Blapstinus sp.	SAG	Phytophagous on squash (*Cucurbita maxima*) and common sunflower (*Helianthus annuus*); genus of quarantine significance in the US
		Hypselops oblonga	SAG, JEBC	Pollinator, saprophagous
		Nycterinus rugiceps	Pizarro-Araya & Cepeda-Pizarro (2013)	Saprophagous; genus of quarantine significance in the US
		Nycterinus sp.	SAG,	Saprophagous; genus of quarantine significance in the US
		Nyctopetus sp.	Pizarro-Araya & Cepeda-Pizarro (2013)	Saprophagous; genus of quarantine significance in the US
	Trogossitidae: Peltinae	*Diontolobus punctipennis*	SAG	Mycophagous, feeds on the spores and hyphae; adults are also nectarivore
		Diontolobus sp.	SAG	Mycophagous, feeds on the spores and hyphae; adults are also nectarivore
Dermaptera	Forficulidae	*Forficula auricularia*	LEULS	Attacks stored products Polyphagous predator and phytophagous
		Forficulidae sp.	SAG	Attacks stored products Polyphagous predator and phytophagous

	Pygidicraniidae	*Esphalmenus lativentris*	LEULS	Omnivorous and detritivorous
Diptera	Agromyzidae	*Agromyza apfelbecki*	SAG	Phytophagous on *Cynara* spp.
		Liriomyza huidobrensis	SAG	Phytophagous on vegetables and ornamental plants
	Cecidomyiidae	*Cecidomyiidae* sp.	SAG	Phytophagous on cereals
	Cryptochetidae	*Cryptochetum iceryae*	SAG	Parasitoid of *Icerya purchasi*
	Culicidae	*Culex pipiens*	LEULS	Anthropophilic hematophagous
		Culicidae sp.	SAG	Anthropophilic hematophagous
	Ulidiidae	*Euxesta eluta*	SAG	Phytophagous on *Zea mays*
		Euxesta sp.	SAG	Phytophagous on *Zea mays*
		Seioptera sp.		Pollinator
	Syrphidae	*Eristalis tenax*	SAG	Potential transmitter of mycobacteria and vector of myasis
	Tephritidae	*Ceratitis capitata*	SAG	Species of quarantine significance in the US
		Euaresta sp.	SAG	Phytophagous; biological control of weeds
		Rachiptera sp.	SAG	Phytophagous on *Baccharis linearis*
		Rhagoletis nova	SAG	Phytophagous on sweet cucumber
	Tipulidae	*Tipula apterogyne*	LEULS	Phytophagous on *Triticum* spp.
Hemiptera	Aleyrodidae	*Aleurothrixus floccosus*	SAG	Phytophagous on citrus trees; of quarantine significance for EPPO
		Aleurothrixus porteri	SAG	Phytophagous on citrus trees; of quarantine significance for EPPO
		Aleurothrixus sp.	SAG	Phytophagous on citrus trees; of quarantine significance for EPPO
		Paraleyrodes sp.	SAG	Phytophagous on fruit trees
		Siphoninus phillyreae	SAG	Phytophagous on fruit trees
		Trialeurodes sp.	SAG	Phytophagous on vegetables and ornamental plants
		Trialeurodes vaporariorum	SAG	Phytophagous on vegetables and ornamental plants
	Anthocoridae	*Orius* sp.	SAG	Predates on Thysanoptera species
		Xylocoris sp.	SAG	Predates on *Tribolium castaneum*
	Aphididae	*Aphis craccivora*	SAG	Phytophagous on fruit trees, vegetables, and ornamental plants
		Aphis gossypii	SAG	Phytophagous on fruit trees and vegetables
		Aphis spiraecola	SAG	Phytophagous on citrus trees; transmits CTV
		Aphis sp.	SAG	Phytophagous on fruit trees and vegetables
		Brachycaudus persicae	SAG	Phytophagous
		Brachycaudus schwartzi	SAG	Phytophagous on *Prunus* spp.
		Brachycaudus sp.	SAG	Phytophagous
		Brevicoryne brassicae	SAG	Phytophagous on *Brassica* spp.
		Capitophorus elaeagni	SAG	Phytophagous on *Cynara scolymus*
				Species of quarantine significance in the US
		Cavariella aegopodii	SAG	Phytophagous on Apiaceae
		Chromaphis juglandicola	SAG	Phytophagous on walnut trees (*Juglans* spp.)
		Dysaphis apiifolia	SAG	Phytophagous on Apiaceae
		Dysaphis cynarae	SAG	Phytophagous on *Cynara scolymus*
				Species of quarantine significance in the US
		Dysaphis foeniculus	SAG	Phytophagous on Apiaceae, Brassicaceae, and Rosacea
		Dysaphis sp.	SAG	Phytophagous on Apiaceae, Brassicaceae, and Rosacea
		Essigella californica	SAG	Phytophagous on *Pinus* spp.
		Hyperomyzus lactucae	SAG	Phytophagous on Asteraceae
		Macrosiphum euphorbiae	SAG	Phytophagous on vegetables
		Macrosiphum rosae	SAG	Phytophagous on *Lycopersicon esculentum*
		Myzus ornatus	SAG	Phytophagous on Apiaceae and Asteraceae
		Myzus persicae	SAG	Phytophagous on fruit trees and vegetables
		Myzus sp.	SAG	Phytophagous on Apiaceae and Asteraceae
		Nasonovia ribisnigri	SAG	Phytophagous on *Lactuca sativa*
		Phoeomyzus passerinii	SAG	Phytophagous on Apiaceae
		Therioaphis trifolii	SAG	Phytophagous on Fabaceae
		Toxoptera aurantii	SAG	Phytophagous on citrus trees
		Toxoptera sp.	SAG	Phytophagous on Dicotyledoneae

		Uroleucon sp.	SAG	Production of pigments
		Wahlgreniella nervata	SAG	Phytophagous on *Rosa* spp.
	Cercopidae	Cercopidae sp.	SAG	Family of quarantine significance in the US
	Cicadellidae	*Empoasca* sp.	SAG	Phytophagous on *Prunus persica* and *Phaseolus vulgaris*; genus of quarantine significance in the US
		Paratanus exitiosus	SAG	Vector of yellow wilt
		Xerophloea viridis	SAG	Genus of quarantine significance in the US
		Xerophloea sp.	SAG	Genus of quarantine significance in the US
	Cicadidae	*Tettigades lacertosa*	MNNC	Phytophagous; genus of quarantine significance in the US
	Coccidae	*Ceroplastes cirripediformis*	SAG	Phytophagous on citrus trees
		Ceroplastes sinensis	LEULS	Phytophagous on citrus trees
		Ceroplastes sp.	SAG	Phytophagous on citrus trees
		Coccus hesperidum	SAG	Phytophagous on fruit trees
		Parasaissetia nigra	SAG	Phytophagous on fruit trees
		Parthenolecanium corni	SAG	Phytophagous on fruit trees and ornamental plants
		Parthenolecanium persicae	SAG	Phytophagous on fruit trees and ornamental plants
		Parthenolecanium sp.	SAG	Phytophagous on ornamental plants
		Saissetia coffeae	SAG	Phytophagous on olive trees
		Saissetia oleae	SAG	Phytophagous on olive trees
		Saissetia sp.	SAG	Phytophagous on olive trees
	Coreidae	*Althos distinctus*	SAG, MEUC	Phytophagous on Compositae and Bromeliacea; genus of quarantine significance in the US
		Althos nigropunctatus	MNNC	Phytophagous on Compositae; genus of quarantine significance in the US
		Leptoglossus occidentalis	LEULS	Feeds mainly on pine trees, especially their seeds
		Leptoglossus chilensis	SAG, LEULS, MEUC	Phytophagous on blueberries, grapevines, hazel nuts; generalist; species of quarantine significance in the US
	Cydnidae	Cydnidae sp.	SAG	Family of quarantine significance in the US
	Dactylopiidae	*Dactylopius coccus*	SAG	Production of carmine
	Diaspididae	*Abgrallaspis* sp.	SAG	Phytophagous on ornamental plants
		Aonidiella aurantii	SAG	Phytophagous on citrus trees
		Aonidiella sp.	SAG	Phytophagous on citrus trees
		Aspidiotus nerii	SAG	Phytophagous on olive trees
		Aulacaspis rosae	SAG	Phytophagous on *Rosa* spp. and *Rubus fruticosus*
		Carulaspis minima	SAG	Phytophagous
		Diaspidiotus ancylus	SAG	Phytophagous on fruit trees
		Diaspidiotus sp.	SAG	Phytophagous on fruit trees
		Epidiaspis leperii	SAG	Phytophagous on *Juglans regia*
		Hemiberlesia lataniae	SAG	Phytophagous on fruit, ornamental, and forest trees
		Hemiberlesia rapax	SAG	Phytophagous on fruit trees
		Hemiberlesia sp.	SAG	Phytophagous on fruit, ornamental, and forest trees
		Lepidosaphes beckii	SAG	Phytophagous on citrus trees
		Lepidosaphes ulmi	SAG	Phytophagous on *Juglans regia*
		Parlatoria oleae	SAG	Phytophagous on olive trees; of quarantine significance in Chile
		Quadraspidiotus lenticularis	SAG	Phytophagous on olive trees
		Quadraspidiotus perniciosus	SAG	Phytophagous on fruit trees
	Dictyopharidae	Dictyopharidae sp.	SAG	Family of quarantine significance in the US
	Lygaeidae	*Geocoris sobrinus*	SAG	Predates on Heterocera (Lepidoptera) species
		Lygaeus alboornatus	SAG, LEULS, MNNC	Phytophagous on vegetables; of quarantine significance in the US
		Nysius irroratus	MNNC	Polyphagous phytophagous; of quarantine significance in the US

		Nysius simulans	LEULS	Polyphagous phytophagous; genus of quarantine significance in the US
		Nysius sp.	SAG, LEULS	Phytophagous on fruit trees and vegetables; genus of quarantine significance in the US
		Oncopeltus miles	SAG	Species of quarantine significance in the US
	Margarodidae	*Icerya purchasi*	SAG	Phytophagous on citrus trees and ornamental plants
	Miridae	*Coridromius chenopoderi*	SAG	Phytophagous, guest in Chenopodiaceae
		Rhinachloa sp.	SAG	Controls the weed *Parkinsonia aculeata*
		Stenoparedra sp.	SAG	Genus of quarantine significance in the US
	Nabidae	*Nabis punctipennis*	SAG, LEULS	Predates on Thysanoptera and Aphididae species
		Nabis sp.	SAG, LEULS	Predates on Thysanoptera and Aphididae species
	Pentatomidae	*Acledra albocostata*	LEULS, MEUC	Phytophagous; species of quarantine significance in the US
		Acledra fraterna	SAG, LEULS	Phytophagous on fruit trees; species of quarantine significance in the US
		Bagrada hilaris	LEULS	Pest of quarantine significance (under control in Chile) Host mainly to Brassicaceae
		Chinavia apicicorne	LEULS	Phytophagous on vegetables; species of quarantine significance in the US
		Euschistus sp.	SAG	Phytophagous
		Nezara viridula	SAG, LEULS	Phytophagous on vegetables
		Pentatoma dimidiaticollis	SAG, MEUC	Phytophagous on wheat, barley, saltbushes, and alfalfa
				Species of quarantine significance in the US
		Podisus sp.	SAG	Predates on *Plutella xylostella*
	Pseudococcidae	*Chorizococcus* sp.	SAG	Phytophagous on grapevine trees
		Phenacoccus parvus	SAG	Phytophagous on Solanaceae; genus of quarantine significance in the US
		Phenacoccus sp.	SAG	Phytophagous on Solanaceae; genus of quarantine significance in the US
		Planococcus citri	SAG	Phytophagous on citrus trees
		Planococcus sp.	SAG	Phytophagous on citrus trees
		Pseudococcus calceolariae	SAG	Phytophagous on fruit trees, vegetables, and ornamental plants; genus of quarantine significance
		Pseudococcus longispinus	SAG	Phytophagous on fruit, ornamental, and forest trees; genus of quarantine significance
		Pseudococcus meridionalis	SAG	Phytophagous; genus of quarantine significance
		Pseudococcus viburni	SAG	Phytophagous on fruit trees, vegetables, and ornamental plants; genus of quarantine significance
		Pseudococcus sp.	SAG	Phytophagous on fruit, ornamental, and forest trees; genus of quarantine significance
	Psyllidae	*Ctenarytaina eucalypti*	SAG	Phytophagous on *Eucalyptus globulus*
		Glycaspis brimblecombei	SAG	Phytophagous on *Eucalyptus* spp.; species of quarantine significance in the US
		Russelliana solanicola	SAG	Phytophagous on vegetables
		Russelliana sp.	SAG	Phytophagous on vegetables
		Trioza sp.	SAG	Phytophagous on citrus trees; transmits citrus greening disease
	Reduviidae	*Empicoris rubromaculatus*	SAG	Predates on *Tetranychus urticae* and *Panonychus citri*
		Zelus renardii	LEULS	Generalist predator
		Zelus sp.	SAG	Predates on pest insects
	Rhopalidae	*Arhyssus tricostatus*	SAG, LEULS, MEUC	Phytophagous on fruit trees; species of quarantine significance in the US
		Harmostes sp.	SAG	Genus of quarantine significance in the US

		Liorrhyssus hyalinus	SAG, LEULS	Phytophagous on sorghum; genus of quarantine significance in the US
		Liorrhyssus lineativentris	SAG	Species of quarantine significance in the US
		Rhopalidae sp.	SAG	Family of quarantine significance in the US
		Xenogenus gracilis	LEULS	Species of quarantine significance in the US
	Scutelleridae	*Misippus variabilis*	SAG	Phytophagous on *Schinus* spp. and *Lithraea* spp.
	Tingidae	*Corythaica* sp.	SAG	Phytophagous; *Corythaica caestri* is a species of quarantine significance in the US
Hymenoptera	Aphelinidae	*Cales noacki*	SAG	Parasite of *Aleurothrixus flocossus* and *Trialeurodes vaporariorum*
	Apidae	*Apis mellifera*	LEULS	Pollinator
		Bombus terrestris	LEULS	Pollinator
	Braconidae	*Lysiphlebus testaceipes*	SAG	Parasitoid of *Aphis gossypii*, *A. craccivora*, *Rhopalosiphum maidis,* and *R. padi*
	Encyrtidae	*Metaphycus sp.*	SAG	Parasitoid of Aleyrodidae species
		Psyllaephagus pilosus	SAG	Parasitoid of *Cenarytaina eucalypti*
	Eulophidae	*Ophelimus* sp.	SAG	Phytophagous on *Eucalyptus* spp.
	Formicidae	*Linepithema humile*	LEULS	Urban pest that causes serious ecological damage to agriculture and human health
		Camponotus sp.	SAG	Causes structural damage in wood
	Halictidae	*Corynura* sp.	SAG	Pollinator
	Ichneumonidae	*Diplazon laetatorius*	SAG	Parasitoid of *Baccha clavata*, *Mesogramma* sp., and Syrphidae
		Ophion sp.	SAG	Parasitoid of *Spodoptera* spp.
	Platygastridae	*Amitus spiniferus*	SAG	Parasitoid of *Aleurocanthus spiniferus*
	Pompilidae	*Pepsis limbata*	LEULS	Predator
		Pepsis chilensis	LEULS	Predator
		Pepsis sp.	JEBC	Predator
	Signiphoridae	*Signiphora* sp.	SAG	Parasitoid of *Pinnaspis minor*, Hemiptera, and Diptera
	Tenthredinidae	*Caliroa cerasi*	SAG	Phytophagous on fruit trees (larvae)
		Nematus oligospilus	SAG	Phytophagous on *Salix* sp.; species of quarantine significance in the US
	Torymidae	*Megastigmus transvaalensis*	SAG	Phytophagous on *Schinus terebinthifolius*
	Vespidae	*Hypodynerus chilensis*	LEULS	Pollinator; predates on Lepidoptera larvae
		Hypodynerus sp.	SAG	Pollinator; predates on Lepidoptera larvae
		Polistes canadensis	LEULS	Phytophagous (causes damage to fruits)
		Polistes dominulus	SAG, LEULS	Predates on *Pieris rapae* (Pieridae)
		Vespula germanica	LEULS	Phytophagous (causes damage to fruits), entomophagous
Lepidoptera	Arctiidae	Arctiidae sp.	SAG	Family of quarantine significance in the US
	Coleophoridae	Coleophoridae sp.	SAG	Family of quarantine significance in the US
	Crambidae	*Achyra* sp.	SAG	Phytophagous on *Medicago sativa*
		Nomophila indistinctalis	SAG	Genus of quarantine significance in the US
	Gelechiidae	*Phthorimaea operculella*	SAG	Phytophagous on olive trees
		Symmetrischema tangolias	SAG	Phytophagous on *Solanum tuberosum* L.
		Tuta absoluta	SAG	Phytophagous on vegetables; species of quarantine significance in the US
	Geometridae	*Cyclophora nanaria*	Vargas *et al.*, (2001)	Phytophagous on *Olea europaea* L.
	Gracillariidae	Gracillariidae sp.	SAG	Family of quarantine significance in the US
	Hesperiidae	*Hylephila fasciolata*	LEULS	Phytophagous on *Medicago sativa* (larvae); *Hylephila signata* is a species of quarantine significance in the US
		Lerodea eufala concepcionis	LEULS	Pollinator, phytophagous
		Pyrgus sp.	SAG	Pollinator, phytophagous
		Terias deva chilensis	LEULS	Pollinator; phytophagous on *Senna* spp.
	Lycaenidae	Lycaenidae sp.	SAG	Pollinator, phytophagous; family of quarantine significance in the US

		Strymon sp.	SAG	Pollinator, phytophagous
	Lymantriidae	*Orgya antiqua*	SAG	Polyphagous phytophagous
	Nymphalidae	*Vanessa carye*	LEULS	Pollinator, phytophagous on Malvaceae
		Vanessa sp.	SAG	Pollinator, phytophagous
	Noctuidae	*Agrotis bilitura*	Artigas (1994)	Phytophagous on vegetables
		Agrotis ipsilon	Artigas (1994)	Phytophagous on vegetables
		Agrotis lutescens	Artigas (1994)	Phytophagous on vegetables
		Autographa bonaerensis	Artigas (1994)	Phytophagous on vegetables
		Copitarsia turbata	Artigas (1994)	Phytophagous on vegetables
		Faronta albilinea	Artigas (1994)	Phytophagous on cereals
		Feltia subterranea	Artigas (1994)	Phytophagous on vegetables and cereals
		Heliothis zea	Artigas (1994)	Phytophagous on vegetables
		Peridroma saucia	Artigas (1994)	Phytophagous on vegetables
		Pseudaletia impuncta	Artigas (1994)	Phytophagous on grasslands
		Pseudaletia punctulata	Artigas (1994)	Phytophagous on cereals and grasslands
		Rachiplusia un	Artigas (1994)	Phytophagous on vegetables
		Spodoptera eridania	Artigas (1994)	Phytophagous on vegetables
		Syngrapha gammoides	Artigas (1994)	Phytophagous; of quarantine significance in the US
	Pieridae	*Phoebis sennae*	LEULS	Pollinator; phytophagous on *Senna* spp.
		Tatochila mercedis mercedis	LEULS	Pollinator, phytophagous on cruciferous vegetables
		Tatochila sp.	SAG	Pollinator, phytophagous on cruciferous vegetables
	Plutellidae	*Plutella xylostella*	SAG	Phytophagous on cruciferous vegetables; genus of quarantine significance in the US
	Pyralidae	*Ectomyelois ceratoniae*	SAG	Carpophagous on fruit trees; attacks stored products; genus of quarantine significance in the US
	Sphingidae	*Manduca sexta*	LEULS	Phytophagous on solanaceous crops
	Tineidae	Tineidae sp.	SAG	Family of quarantine significance in the US
	Tortricidae	*Lobesia botrana*	SAG	Species of quarantine significance in the US
		Cydia pomonella	SAG	Spermophagous on *Malus domestica, Pyrus* spp.; genus of quarantine significance in the US
		Epitonia aporema	SAG	Phytophagous on Fabaceae; species of quarantine significance in the US
		Epitonia orfilai	SAG	Genus of quarantine significance in the US
		Proeulia auraria	SAG	Phytophagous on fruit trees; genus of quarantine significance in the US
		Proeulia sp.	SAG	Phytophagous on fruit trees; genus of quarantine significance in the US
Neuroptera	Chrysopidae	*Chrysopa* sp.	SAG	Predates on Aphididae
		Chrysoperla sp.	SAG	Predates on Aphididae
		Chrysopidae sp.	SAG	Predates on insects
	Hemerobiidae	*Hemerobius* sp.	SAG	Predates on *Elatobium abietinum*
		Sympherobius sp.	SAG	Predates on Pseudococcidae
Orthoptera	Acrididae	*Dichroplus maculipenne*	LEULS	Phytophagous on Poaceae; genus of quarantine significance in the US
		Dichroplus sp.	SAG	Phytophagous on Poaceae; genus of quarantine significance in the US
		Schistocerca cancellata	SAG,	Polyphagous phytophagous

			LEULS	
		Trimerotropis ochraceipennis	LEULS	Phytophagous on grasslands
	Gryllidae	*Gryllus fulvipennis*	LEULS	Phytophagous on avocado, citrus, and grapevine trees; species of quarantine significance in the US
	Tettigoniidae	*Cosmophyllum pallidulum*	LEULS	Attacks citrus fruits
	Tristiridae	*Elasmoderus lutescens*	LEULS	Polyphagous phytophagous
		Elasmoderus wagenknechti	SAG, LEULS	Polyphagous phytophagous
Phasmatodea	Pseudophasmatidae	*Bacunculus phyllopus*	SAG	Polyphagous phytophagous, *Muehlenbeckia* sp.
Psocoptera	Ectopsocidae	*Ectopsocus* sp.	SAG	Attacks stored products
	Liposcelidae	*Liposcelis* sp.	SAG	Attacks stored products
Thysanoptera	Aeolothripidae	*Aeolothrips* sp.	SAG	Phytophagous on *Allium* spp.
	Phlaeothripidae	*Haplothrips* sp.	SAG	Phytophagous on *Triticum* spp.
		Liothrips sp.	SAG	Phytophagous
	Thripidae	*Drepanothrips reuteri*	SAG	Phytophagous on grapevine trees
		Frankliniella australis	SAG	Phytophagous on Fabaceae, Rosaceae, Brassicaceae, and Ericaceae; species of quarantine significance in the US
		Frankliniella occidentalis	SAG	Phytophagous on vegetables Transmitter of TSWV; genus of quarantine significance
		Frankliniella valdiviana	SAG	Anthophilous on *Baccharis* spp. and *Gochnatia* spp. (Asteraceae); genus of quarantine significance in the US
		Heliothrips haemorrhoidalis	SAG	Phytophagous on fruit trees and ornamental plants
		Limothrips cerealium	SAG	Phytophagous on *Lycopersicon esculentum*
		Microcephalothrips abdominalis	SAG	Phytophagous on fruit trees and ornamental plants (transmits TSV)
		Scirtothrips inermis	SAG	Phytophagous on citrus trees
		Scolothrips sp.	SAG	Predates on *Tetranychus urticae* y *Raoiella* spp. (Tenuipalpidae)
		Thrips australis	SAG	Phytophagous on *Eucalyptus* spp.
		Thrips physapus	SAG	Phytophagous on vegetables and ornamental plants
		Thrips tabaci	SAG	Phytophagous on fruit trees, vegetables, and ornamental plants

Abbreviations: EEC: European Economic Community; CTV: *Citrus tristeza* virus; EPPO: European and Mediterranean Plant Protection Organization; TSV: tobacco streak virus; TSWV: tomato spotted wilt virus; Juan Enrique Barriga Collection (JEBC); Laboratorio de Entomología Ecológica, Universidad de La Serena, La Serena, Chile (LEULS); Museo Entomológico Luis Peña, Departamento de Sanidad Vegetal, Facultad de Ciencias Agronómicas, Universidad de Chile, Santiago, Chile (MEUC); Museo Nacional de Historia Natural, Santiago, Chile (MNNC).

Fig. 1: Geographic location of the Limarí River basin (Coquimbo Region, Chile).