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Soil arthropods associated with sweetpotato crop (*Ipomoea batata* L.) in La Molina, Lima, Peru

Artrópodos de suelo asociado al cultivo de camote (*Ipomoea batata* L.) en La Molina, Lima, Perú

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Abstract

Sweetpotato (*Ipomoea batata* L.) is an economically important crop grown in Peru. The present study aimed to determine the soil arthropods associated with sweetpotato and its relative abundance in sweetpotato production fields in La Molina, Lima, Peru. Evaluations were conducted at Universidad Nacional Agraria La Molina, from February to August 2017. Samples were collected using pitfall traps and examined at the Klaus Raven Büller Entomology Museum. Soil morphospecies were extracted and separated from collected samples and then counted, recorded and identified. They were also admitted to the Entomology Museum collection. Eighty morphospecies in the classes Collembola, Insecta, Malacostraca, Arachnida and Chilopoda of phylum Arthropoda were recorded. Within the Collembola class, Entomobryidae was the most abundant family; within Insecta, *Gryllus* spp. (Gryllidae); within Malacostraca, *Porcellio laevis* (Porcellionidae); within Arachnida, *Theridion volubile* (Theridiidae) of the order Aranea; and within Chilopoda, the order Lithobiomorpha. By understanding the diversity of arthropods, it may inform future measures and improve control of pests by taking into consideration the soil arthropods among which important beneficial natural enemies could be found.

Keywords: *Arthropods, sweetpotato, soil, pitfall traps*

Resumen

En Perú, el camote es un cultivo económicamente importante. El presente trabajo se realizó con el fin de determinar la asociación de los artrópodos de suelo con el cultivo de camote y su abundancia relativa en los campos de producción de camote en La Molina, Lima, Perú. Se evaluó en el área agrícola de la Universidad Nacional Agraria La Molina, Lote 'Pancal', del 3 de febrero al 11 de agosto, 2017. Las muestras colectadas fueron examinadas en los Laboratorios del Museo de Entomología Klaus Raven Büller. Se instalaron seis trampas de caída las cuales se evaluaron semanalmente. De las muestras colectadas se extrajeron y separaron las morfoespecies de suelo, se contabilizaron, registraron e identificaron. Así mismo, fueron ingresadas a la colección del Museo de Entomología. Se registraron a las Clases Collembola, Insecta, Malacostraca, Arachnida y Chilopoda del Phyllum Arthropoda. De la Clase Collembola, la más abundante fue la Familia Entomobryidae; de Insecta, *Gryllus* spp. (Gryllidae); Malacostraca, *Porcellio laevis* (Porcellionidae); Arachnida, *Theridion volubile* (Theridiidae) del Orden Aranea; y Chilopoda, el Orden Lithobiomorpha. Se registraron 79 morfoespecies.

Palabras clave: *Artrópodos, camote, suelo, trampas de caída*

Introduction

Sweetpotato (*Ipomoea batata* L.) is one of the most widely sown crops in the world (Martin 1988), and it typically performs well in warm valleys. Native to Central America (Ishida et al., 2000), it has been cultivated in Peru since pre-Incan times (Fonseca, et al., 2002). In Peru, it is sown in coastal valleys (at sea level), inter-Andean valleys and jungle regions (500 to 2000 m altitude) (Fonseca et al., 2002). Between 2017 and 2018, a total of 6,000 hectares (ha) of sweetpotato were registered nationwide, 2,400 ha being grown in the Lima region, followed by Lambayeque (700 ha), Ica (700 ha), and Cajamarca (600 ha), reaching yields of up to 17.8 tonnes/ha (Sistema Integrado de Estadística Agraria, SIEA, 2017).

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The physical-chemical nature, structure and sources of organic matter in the soil allow for the development of a wide diversity of flora and fauna, which interact with and maintain functioning ecosystems through processes such as nutrient cycle, decomposition of organic matter, emission of greenhouse gases, modification of soil structure, water treatment and erosion (Cortet et al., 1999). Soil arthropods are individuals that play an important role in soil ecosystems. Behan-Pelletier (1993) considered the study of soil arthropods difficult to establish and define since most arthropods, with some exceptions, spend a certain stage of their life in the ground.

In sweetpotato, Robles (2002) recorded the orders Dermaptera and Coleoptera of the class Insecta and the class Arachnida. Schuller (2003) documented the class Insecta with the families Staphylinidae and Carabidae of the order Coleoptera and the class Arachnida in Chancay near Lima in tomato (*Solanum lycopersicum* L.). In maize (*Zea mays* L.), the order Dermaptera occurs most abundantly, followed by the Coleoptera, which is dominated by the families Staphylinidae and Carabidae, and the class Arachnida. In artichoke (*Cynara scolymus* L.) grown in Huaura (Larco, 2018), three orders have been reported: Coleoptera with the family Carabidae as the most abundant, followed by the families Linyphiidae and Theridiidae within the order Aranea and the families Anisolabididae and Labiduridae within Dermaptera. In avocado (*Persea americana* Mill.), the families Sicariidae, Lycosidae and Dysderidae within the order Aranea have been observed as well as the orders Coleoptera and Dermaptera.

Pyle et al. (1981) points out that agriculture is the main factor that disturbs the agroecosystem of soil arthropods. However, Altieri (1999) emphasises that the disturbance in the diversity and abundance of these systems will depend on the type, age, diversity, structure and management of the crop. For example, sweetpotato (*Ipomoea batatas* L.) requires less input and labour than other crops such as corn, and it tolerates marginal growth conditions (International Potato Center, 2020). Generally, it does not require many intensive agricultural practices, which has led to it becoming a refuge for many species of arthropods due to the favourable conditions for survival. For this reason, the objective was to determine the relative diversity and abundance of the arthropod inhabitants of the soil in the sweetpotato crop in La Molina, Lima, Peru.

Materials and Methods

Weekly collections of soil arthropods were made, by means of pitfall traps, of a 1.1 ha sweetpotato field planted with the variety 'Jonathan' that had previously been planted with maize. The field was located in a sector of the Fundo, called 'Pancal', in the agricultural area of the Universidad Nacional Agraria La Molina, located in the district of La Molina, St. La Molina SN (Lima, Peru). The evaluation periods were from February 3rd to August 11th, 2017, and a total of 27 samples were collected. Typical cultural practices were performed during the collection period, including fertilisation, irrigation and weeding. At 36 days after sowing, cultivation and pounding were performed. No insecticide applications were made.

Field work

Installation of pitfall traps

Six pitfall traps consisting of 12.5-cm-high and 12-cm-diameter polyethylene poly-rap containers were installed. They were filled weekly with approximately 250 mL of a solution of water and formaldehyde and 2 mL of liquid soap. Formaldehyde was used to prevent the decomposition of the collected insects and liquid soap to break the surface tension.

The field was divided into six sectors, and a pitfall trap was placed in each sector. They were located at the back of the furrow. A hole was excavated to a depth where the mouth of the container was flush with the surface of the soil. The location of each pitfall trap was flagged. Each time a cultural practice was performed in either field, the pitfall traps were removed and subsequently replaced. Traps were placed at least 5 m from the field perimeter so as to minimise edge effects.

Sample collection

On each evaluation date, the pitfall traps were removed, and the contents were emptied into airtight 6 × 4 cm polyethylene containers previously marked with indelible ink with the trap number and date. Then, the traps were washed and again filled with the solution (water, formaldehyde and detergent) and reinstalled. The pitfall traps were removed once to prevent them from being damaged due to the hilling and subsequently relocated to the same place. When trap containers were damaged, they were changed and reinstalled.

Sample processing in the laboratory

Taxonomic separation and counting of the collected soil arthropods was performed in the research laboratory at the Klauss Raven Büller Entomology Museum of the Entomology Department of the Universidad Nacional Agraria La Molina. The contents of the 6 x 4 cm polyethylene container were screened with an organza cloth placed in a strainer, and the sample was washed with tap water and then with distilled water. The washed sample was placed in 25-cm-diameter glass Petri dishes.

The separation and grouping of soil arthropods based on morphological characteristics, called morphospecies (Oliver & Beattie, 1993, 1996a, 1996b), was done using fine tweezers. Selected individuals were counted and kept in small glass bottles with 30 mL of 75% alcohol and labelled with their corresponding code. The code consisted of 1) the first letter of the crop, 2) the abbreviation of the order of the sample and 3) the number of the sample.

For example, a recorded individual belonging to the order Hymenoptera (HYM) and being the first identified individual '1' was coded as HYM1, the second individual of the same order as 'HYM2' and so on. Those samples where an order could not be identified were classified as Morpho1, Morpho2, etc. One or a group of individuals of each species, depending on the number of individuals collected during the evaluation, were mounted on entomological pins and/or stored in alcohol, labelled and registered in the Entomology Museum of the Universidad Nacional Agraria La Molina.

Taxonomic identification

Collected individuals were identified in the laboratory using identification keys, with the support of specialists and by comparison with samples from the collection of the Klaus Raven Büller Entomology Museum of the Universidad Nacional Agraria La Molina. These were counted and evaluated for class, order, family, genus and/or, in some cases, due to its abundance and/or importance, even species.

Results

During the entire evaluation period, 22,822 individuals were recorded in 5 classes, 15 orders and 28 families. The arthropods identified and counted are shown in Table 1.

Classes represented included Chilopoda, Arachnida, Malacostraca, Collembola and Insecta. In descending order of number of individuals counted, the class Collembola was the most abundant (18,592), followed by Insecta (2,161), Malacostraca, Arachnida and Chilopoda. With respect to the number of morphospecies, the class Insecta was the most predominant, followed by the classes Arachnida, Collembola, Chilopoda and Malacostraca (Fig. 1).

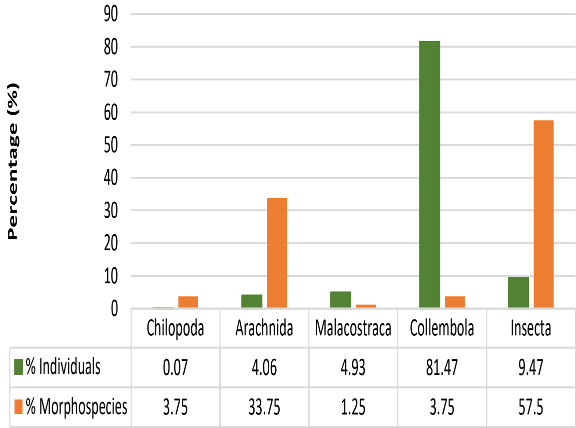

Figure 1. Number of individuals and morphospecies (percentages) by Arthropod class in sweetpotato from February to August 2017, in Lima, Peru

Table 1: Morphospecies of soil arthropods captured with pitfall traps in sweetpotato from February to August 2017

CLASS INSECTA	**2161**	**CLASS COLLEMBOLA**	**18592**
Order Coleoptera	**357**	**Order Entomobryomorpha**	**18499**
Family Carabidae	**210**	Family Entomobryidae	**18499**
Blennidus peruvianus (Dejean, 1828)	**190**	***Seira* sp.**	
Calleida sp.	**1**	***Lepidocyrtus* sp.**	
Carab1. sp.	**1**	***Entomobrya* sp.**	
Carab2. sp.	**5**	**Order Poduromorpha**	**53**
Tetracha chilensis (Laporte, 1834)	**4**	Family Brachystomellidae	**53**
Tetragonoderus sp2.	**9**	***Brachystomella* sp.**	
Family Elateridae	**3**	**Order Symphypleona**	**40**
Conoderus sp.	**1**	Family Bourletiellidae	**40**
Heteroderes sp.	**2**	*Rastriopes* sp.	
Family Scarabaeidae	**8**		
Aphodius sp.	**3**		
Ataenius sp.	**2**	**CLASS MALACOSTRACA**	**1124**
Paranomala undulata (Melsheimer, 1845)	**3**	**Order Isopoda**	**1124**
Family Staphylinidae	**54**	**Family Porcellionidae**	**1124**
Subfamily Aleocharinae	**35**	*Porcellio laevis* (Latreille 1804) (adults)	**377**
Aleoc. sp1.	**25**	*Porcellio laevis* (Latreille 1804) (nymphs)	**747**
Aleoc. sp2.	**1**		
Aleoc. sp3.	**7**		

Aleoc. sp4.	**1**
Aleoc. sp5.	**1**
Subfamily Oxytelinae	**1**
Oxyt. sp1.	**1**
Subfamily Paederinae	**6**
Paederus sp.	**4**
Paederi. sp1.	**2**
Subfamily Staphylininae	**11**
Platydracus notatus	**5**
Staphy. sp1.	**2**
Staphy. sp2.	**4**
Staphylinidae1	**1**
Family Tenebrionidae	**82**
Blapstinus cisteloides (Erichson, 1847)	**17**
Blapstinus holosericius (Laporte, 1840)	**48**
Epitragopsis olivaceus (Erichson, 1847)	**2**
Parepitragus pulverulentus (Erichson, 1847)	**5**
Order Hymenoptera	**383**
Family Formicidae	**119**
Dolichoderinae	**34**
Linepithema sp.	**34**
Formicinae	**18**
Brachymyrmex sp.	**18**
Myrmicinae	**12**
Solenopsis sp.	**12**
MorfoL1 sp.	**1**
MorfoL2 sp.	**1**
MorfoL3 sp.	**2**
MorfoL4 sp.	**1**
MorfoL5 sp.	**3**
MorfoL6 sp.	**43**
MorfoL7 sp.	**2**
MorfoL8 sp.	**2**
Family Scelionidae	**264**
Baeus sp.	**251**
Trimorus sp.	**13**
Order Orthoptera	**1396**
Family Acrididae	**3**
Family Gryllidae	**1393**
Gryllus sp. adult	**564**
Gryllus sp. nymph	**829**
Order Dermaptera	**24**
Family Anisolabididae	**24**
Euborellia annulipes (Lucas, HF, 1847)	**24**
Order Blattodea	**1**
Family Blattellidae	**1**
CLASS ARACHNIDA	**928**
Subclass Scorpiones	**5**
Subclass Acari	**267**
Order Mesostigmata	**1**
Mesostigmata1	**1**
Order Oribatida	**100**
Oribatida1	**100**
Order Prostigmata	**166**
Prostigmata1	**77**
Prostigmata2	**89**
Order Aranea	**656**
Family Gnaphosidae	**216**
Family Linyphiidae	**71**
Family Lycosidae	**54**
Family Mysmenidae	**1**
Family Oxyopidae	**7**
Family Salticidae	**1**
Family Scytodidae	**11**
Family Sicariidae	**1**
Family Theridiidae	**289**
Family Thomisidae	**3**
Family Trachelidae	**2**
CLASS CHILOPODA	**17**
Order Geophilomorpha	**6**
Family Geophilidae	**6**
Geophilidae1	**3**
Geophilidae2	**3**
Order Lithobiomorpha	**11**
Family Henicopidae	**11**
TOTAL	**22822**

Classes of arthropods that were recorded consistently throughout the evaluation period were Collembola, Insecta, Malacostraca and Arachnida.

Class Collembola

A total of 18,592 individuals were recorded throughout the evaluation belonging to the orders Entomobryomorpha, Poduromorpha and Symphypleona according to the taxonomic classification of Bellinger et al. (2012). Entomobryomorpha was the most abundant with 99.5%, followed by Poduromorpha with 0.3% and Symphypleona with 0.2%. From the order Entomobryomorpha, 18,499 individuals of the family Entomobryidae were identified, among which were the genera *Seira* sp., *Lepidocyrtus* sp. and *Entomobrya* sp.; from the order Poduromorpha, 53 individuals of the genus *Brachystomella* sp. of the family Brachystomellidae; and from the order Symphypleona, 40 individuals of the genus *Rastriopes* sp. of the family Bourletiellidae.

The Bourletiellidae (Symphypleona) and Brachystomellidae (Poduromorpha) were collected on 10 evaluation dates. However, neither family was consistently captured, and on several evaluation dates, they were not recorded at all. Conversely, the Entomobryidae (Entomobryomorpha) were the most abundant and constant throughout the evaluation period. Figure 2 illustrates that during the period of vegetative development fewer individuals were collected compared to the period of root filling. Irrigation and weeding may have influenced the decrease in the number of individuals registered in June (928 individuals) and July (642 individuals), respectively. The highest number of recorded individuals occurred on May 12th (1,699) and June 23rd (1,702).

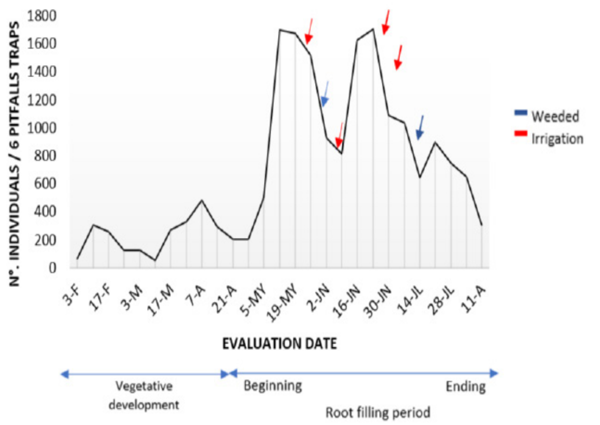

Figure 2: Seasonal occurrence of Entomobryidae (Order Entomobryomorpha) captured in sweetpotato from February to August 2017, in Lima, Peru.

Class Insecta

Of this class, 2,161 individuals were collected throughout the evaluation, among which individuals of the order Orthoptera (64.6%), Coleoptera (17.72%), Hymenoptera (16.52%), Dermaptera and Blattodea were identified, the first three being more abundant (Fig. 3).

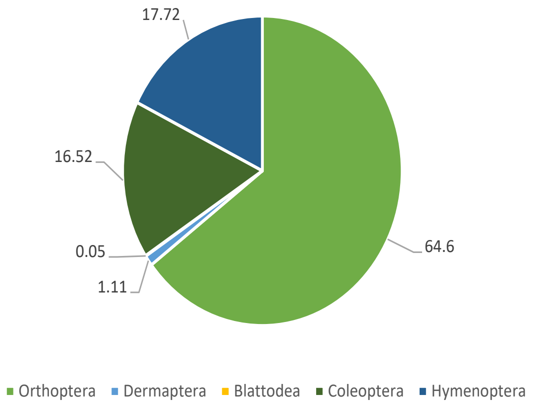

Figure 3: Percentage of Orders of the Class Insecta registered in the sweetpotato from February to August 2017, in Lima, Peru.

From the order Orthoptera, *Gryllus* spp. was the morphospecies recorded in greater abundance at both adult (564 individuals) and nymphal (829) forms. Figure 4 illustrates, in adults, a decrease in the number of individuals recorded in the evaluation of May 26th, which likely may have been due to irrigation realised on May 21st. Likewise, weeding and irrigation could have affected the capture of these individuals during subsequent evaluations.

With respect to the nymphs, 135 individuals were collected on May 19th, and irrigation occurred on May 21st. Furthermore, adult individuals collected likely decreased close to harvest. Given the previous results with the adults collected, the number of individuals was expected to decrease in the subsequent evaluation. However, agricultural practices performed before the evaluation of June 16th (121 individuals) did not seem to have much influence. It could not be determined if weeding influenced the number of nymphs collected.

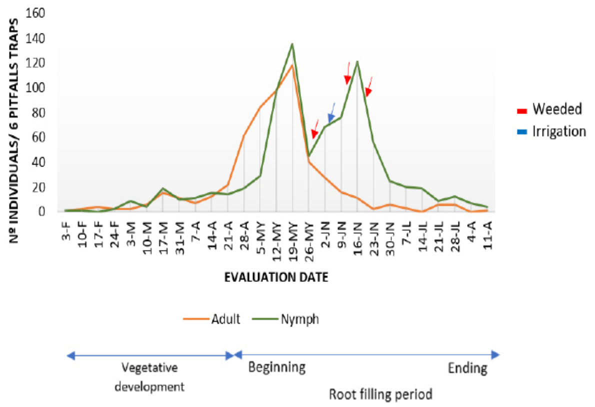

Figure 4: Seasonal occurrence of *Gryllus* spp. (Orthoptera: Gryllidae) captured in sweetpotato from February to August 2017, in Lima, Peru..

From the order Coleoptera, the families Carabidae, Elateridae, Scarabaeidae, Staphylinidae and Tenebrionidae were recorded. The family Carabidae was the most

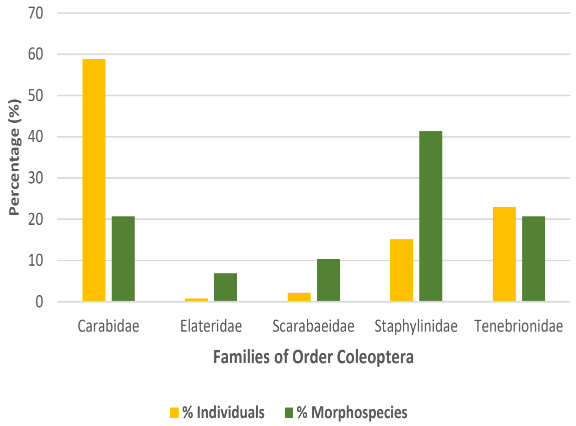

Figure 5: Percentage of individuals and morphospecies of the families within the Order Coleoptera registered in sweetpotato from February to August 2017, in Lima, Peru**.**

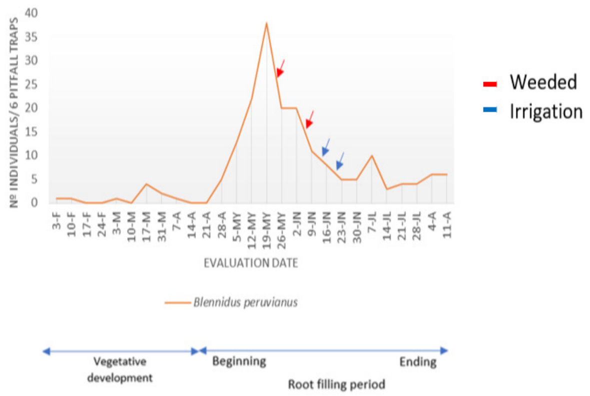

Figure 6: Seasonal occurrence of *Blennidus peruvianus* (Dejean, 1828) (Coleoptera: Carabidae) in sweetpotato from February to August 2017, in Lima, Peru.

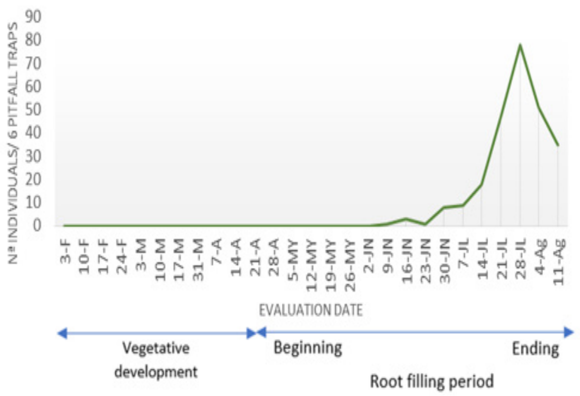

Figure 7: Seasonal occurrence of *Baeus* sp. (Hymenoptera: Scelionidae) in sweetpotato from February to August 2017, in Lima, Peru.

abundant with 210 individuals in total, followed by Tenebrionidae (82), Staphylinidae (54), Scarabaeidae (8) and Elateridae with 3 individuals (Fig. 5). However, with respect to the number of morphospecies registered, the family Staphylinidae was predominant.

Blennidus peruvianus (family Carabidae) was the most abundant species, and its presence was almost constant throughout the evaluation period.

Figure 6 illustrates how the different agricultural practices influence collection rate. Within the order Hymenoptera, *Baeus* sp. was the most abundant genus. In Figure 7, the ascending presence can be observed from June 9th (1 individual) to the last evaluation date, having the highest record on July 28th with 78 individuals.

Class Malacostraca

Throughout the evaluation, 1,124 individuals belonging to the *Porcellio laevis* Latreille 1804 species (order Isopoda: family Porcellionidae) were counted. Individuals in adult and juvenile stages were registered with juveniles (747 individuals) more abundant than adults (377 individuals). Figure 8 shows the increase in the population of *Porcellio* adults during the first three evaluations. As with other species, the cultivation practices and field management seemed to have strong influence on the number of individuals captured during each collection. Regarding juveniles, the juvenile curve had a tendency almost similar to that of adults; however, the number of juveniles captured in a given evaluation was usually higher.

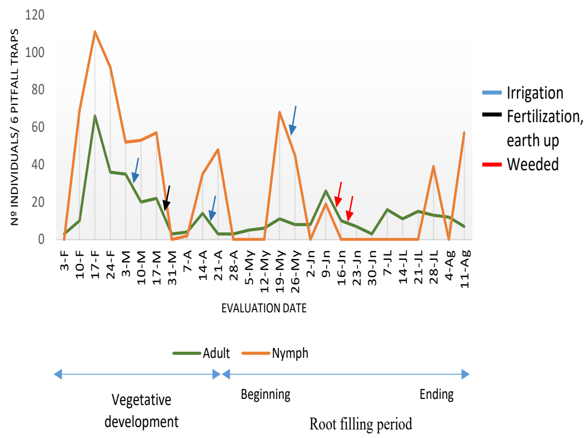

Figure 8: Seasonal occurrence of *Porcellio laevis* Latreille 1804 (Porcellionidae) captured in sweetpotato from February to August 2017, in Lima, Peru..

Class Arachnida

Of this class, 928 individuals were registered throughout the evaluation, among which subclasses Acari and Scorpiones from the order Aranea were identified. The order Aranea was the most abundant with 656 individuals and, in turn, the one that presented the highest number of morphospecies (Fig. 9). Within the order Aranea, 11 families were identified: Gnaphosidae, Linyphiidae, Lycosidae, Mysmenidae, Oxyopidae, Salticidae, Scytodidae, Sicariidae, Theridiidae, Thomisidae and Trachelidae. The most abundant families were Gnaphosidae and Theridiidae. In the subclass Acari, the order Oribatida predominates.

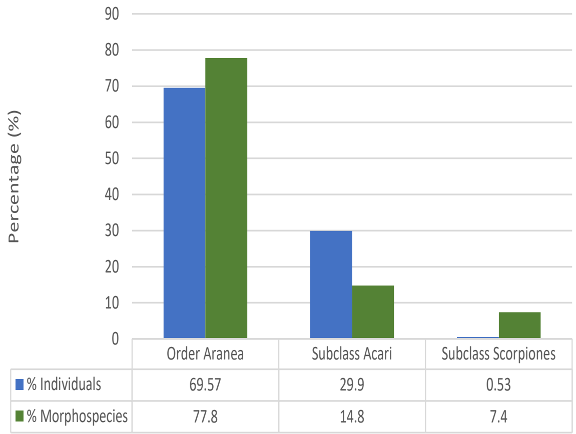

Figure 9: Percentage of Orders of the Class Arachnida registered in the sweetpotato from February to August 2017, in Lima, Peru.

Discussion

Some of the agricultural practices performed in the sweetpotato crop likely influenced the dynamics of the different arthropods identified due to the alteration of habitats that it generates. The field was subjected to practices such as fertilisation, cultivation, harvesting, hilling, irrigation and manual weeding, but not pesticide applications which should allow for a large number of arthropods to establish in the crop.

Class Collembola

Individuals within the class Collembola (Entomobryidae) were the most abundant. In a study carried out in Cañete, another town in the region Costa, Rondón (1999) recorded a large number of individuals of this class, registering 38,197 individuals, in sweetpotato. In the present investigation of the three families identified, Entomobryidae predominated, with the genera *Seira* sp., *Lepidocyrtus* sp. and *Entomobrya* sp.

During the period of crop vegetative growth, a small number of individuals were recorded. In this period, the soil was more exposed to the environment. During the period of starch accumulation in the root closer to harvest, the plants almost entirely covered the soil, and the number of individuals captured began to increase. Based on capture data, lush vegetation conditions generate a favourable microclimate for the establishment of individuals in this group.

Class Insecta

Of this class, only morphospecies predominantly living in the soil were considered. Hence, within this group, the families Gryllidae and Acrididae of the order Orthoptera; Anisolabididae of Dermaptera; Blattellidae of Blattodea; Carabidae, Staphylinidae, Elateridae, Scarabaeidae and Tenebrionidae of Coleoptera; and Formicidae and Scelionidae of Hymenoptera were registered.

From the order Orthoptera, more nymphs than adults were captured. The evaluation period was carried out between the months of February and July, months that covered the entire summer, autumn and early winter seasons at the evaluation site. The time of the year was likely favourable for the development of *Gryllus* spp., and the number of individuals recorded increased until the onset of autumn and early winter. Furthermore, minimum soil disturbance from reduced agricultural practices and not applying pesticides likely allowed for a greater number of individuals to establish. It should also be noted that the largest record of individuals, both adult and nymphal, occurred when the plants almost completely covered the soil, which provided refuge area, food sources and favourable oviposition conditions. Due to the greater number of individuals in the nymphal state registered in this period, conditions favouring reproduction likely occurred, especially for oviposition, which permits a greater number of generations to establish.

From Hymenoptera, members of the family Formicidae were considered due to their characteristic of mainly establishing their nests in different types of soil (Kaspari 2003). In addition, individuals from the family Scelionidae were also considered due to the behaviour of the identified morphospecies. The most representative and abundant individuals were females of the genus *Baeus* sp. and endoparasitoids of spider Ootheques (Araujo et al., 2013). *Baeus* females are small ‘wingless’ wasps with a highly fusiform body (Stevens & Austin, 2007). Because of these characteristics, they are frequently found in the soil. Loiácono and Margaría (2004) indicate that they parasitise eggs of some spider species of the family Theridiidae and Araneidae. The fact that there is a great abundance and diversity of spiders in this crop probably allowed *Baeus* sp. to become well established.

Of Coleoptera, *B. peruvianus* (family Carabidae) was the most abundant. The number of individuals captured markedly increased during the latter half of the crop production. Plants should reach an adequate size to generate a favourable microclimate and facilitate the establishment of a greater number of arthropods, which then provides ample food source for *B. peruvianus*. Furthermore, the microclimate may have also been favourable for its establishment. However, research on the developmental cycle and/or any description on a favourable temperature of this species is lacking.

Class Malacostraca

Porcellio laevis was registered at both adult and juvenile stages, and the juveniles were more abundant than the adults. The conditions of the sweetpotato agroecosystem were likely favourable, allowing its establishment. The presence of these individuals is important, because, as noted by Leistikow and Wägele (1999), they are involved in the synthesis of nutrients and in maintaining energy flow in the soil (biochemical cycles).

Class Arachnida

The order Aranea was abundant and diverse with *Zelotes laetus* (family Gnaphosidae) and *Theridion volubile* (family Theridiidae) as the most frequently occurring species; individuals of the subclass Scorpiones and Acari were also recorded. Coddington et al. (2004) noted that it is the only taxon entirely composed of predators. As with the other groups of arthropods, the field conditions with reduced agricultural practices and lack of pesticide application likely allowed for the survival of a large number and diversity of individuals of this class.

Class Chilopoda

Chilopoda are considered important terrestrial predators (Prado-Sepúlveda et al., 2016). However, the number of individuals captured was the lowest with respect to the other arthropods. It is unknown whether conditions were favourable or not for these individuals, but it is likely that there are other more efficient capture methods for these individuals.

Conclusion

In this study, the classes Collembola, Insecta, Malacostraca, Arachnida and Chilopoda were recorded. The class Collembola had the greatest number of individuals, and the class Insecta had the most identified morphospecies. *Seira* sp., *Lepidocyrtus* sp. and *Entomobrya* sp. (order Entomobryomorpha: family Entomobryidae) were the genera belonging to the most abundant family registered in the class Collembola. *Gryllus* sp. (Orthoptera: Gryllidae), *Baeus* sp. (Hymenoptera: Scelionidae) and *B. peruvianus* (Coleoptera: Carabidae) were the most abundant morphospecies of the class Insecta. In Malacostraca, *P. laevis* (Isopoda: Porcellionidae) was the only registered species. *Zelotes laetus* (family Gnaphosidae) and *T. volubile* (family Theridiidae) were the most abundant morphospecies in the class Arachnida. Geophilidae (order Geophilomorpha) and Henicopidae (order Lithobiomorpha) were the only families registered in the class Chilopoda.

Through capturing, identifying and cataloguing the rich diversity of soil arthropods that occur in sweetpotato agroecosystems of Peru, fundamental knowledge is established. The specimens collected and preserved may be of use for future research not only taxonomically but also as a snapshot of the number of species occurring in this region at this time.

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