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SPECIES COMPOSITION AND DISTRIBUTION OF PEANUT PESTS IN UZBEKISTAN

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ABSTRACT

Peanut pests are widespread throughout the world, but few of them are of regional economic importance. This article briefly discusses leaf pests, stem pests, root pests of peanuts, the harmfulness of peanuts, and their economic importance.

Keywords: Diplopoda, Julida, Orthoptera, Dermapcera, Isoptera, Thysanoprera, Hemiptera, Homoptera, Colcoptera, Lepidoptera, Diptera Hymenoptera.

INTRODUCTION

Peanut-Arachis hypogaea L. Countries such as Africa, Asia (China and India), and America are the largest peanut-producing countries in the world. 48,756,790 tons of peanuts are produced annually in the world. China ranks first in the world, producing 17,572,798 tons of peanuts per year, India is in second place, producing 6,727,180 tons per year, and Nigeria is in third place, producing 4,450,050 tons of peanuts. China, India, and Nigeria together produce over 50% of the world’s peanuts. By growing 28,305 tons of peanuts per year, Uzbekistan ranks forty-ninth and first among the CIS countries. (https://www.atlasbig.com. www.fao.org).

Literature review. Peanut oil is the second richest in macro- and micronutrients after soybeans, however, about 60% of soybeans in the world are grown and consumed in developed countries. Peanut butter is mainly used as a staple food in developing countries (Africa and India). [1; S. 96-101].

Like many other plants, peanuts are attacked by several pests, including nematodes, insects, fungi, bacteria, and viruses, which cause reduced yields. The main pests of peanuts are polyphagous feeding species [3; S. 7-26].

Smith and Barfield (1982) in the USA, Whitman (1990) in Africa, Amin (1988) in India, and Lynch and Douce (1992) have provided extensive information on peanut pests and their harm. A list of crop rotations against peanut pests is recommended by Lynch (1990). Rango Rao reported on peanut post-harvest pests (reserve pests) [3; pp. 80-88, 4; pp. 18-24, 5; S. 110-116].

The species composition of peanuts and their pests on the territory of Uzbekistan has not been studied enough. This situation requires large-scale studies of the species composition of pests of peanut plants and their economic importance.

Research methodology and materials (Research Methodology).

The research was carried out in the peanut fields of the Angor, Kumkurgan, Denov districts of the Surkhandarya region.

Entomological observations and pest species were studied by the method of G. Ya. Bei-Bienko, bioecology of pests by the method of V. F. Pale, pest density, and harmfulness by the method of Sh. T. Khodzhaev [15; pp. 69-72, 6; 26-26].

Analysis and results.

About 400 species of primary, secondary, and occasional pests of peanut plants are known in the world. Among them, 30 species of nematodes (Nematoda), 17 species belonging to 3 families (Asttigmatidae, Eupodidae, Tetranychidae), arachnids (Arachnida), a class of mites (Acarina), belonging to the type Arthropoda; 12 species belonging to the family Odontopygidae, class Diplopoda, family Julida; belongs to the class Insecta, 10 families, including the family Orthoptera, Tetrigidae, Acrididae, Gryllidae, Gryllocalpidae, Blattidac, family Dermaptera - Labiduridae, family Isoptera - Termiridae, Hodotermitidae, family Thysanoptera - Thripidae, family Hemiptera - Miridae, Lygaeidae , Pyrrhocoridae, Coreidae, Alydidae, Pentatomidae, Crdnidae, Homoptera, Cercopidae, Cicadellidae (= Jasidae), Delphacidae, Dictyopharidae, Fulgomlae, Aleyrodidae, Aphididae, Coccidae, Pseudococcidae, Tettigometridae, Colcoptera, Sraphylinidae, Staphylinidae, Scarabaeidae, Buprcstidae, Elater, Coccinellidae , Melyridae, Tenebrionidae, Lagriidae, Meloidae, Cerambycidae, Chrysomelidae, Curculionidae, Lepidoptera - Limacodidae, Pyralidae, Tortricidae, Gelechiidae, Geomecridae, Arctiidae, Agaristidae, Noctuidae, Sphingidae, Lycaenidae, Pieridae, Cecidomyiidae, Empididae, Lauxaniidae, Diptera, Chloropidae, Hymenoptera tu Formicidae, Megachilidae, 54 families, 362 species in total, nan wasps damage to root, leaf and seed, reserve pests of peanuts [3; pp. 198-202, 7; 197.-s., 8; 286-291-b].

More than 10 species of nematodes, 6 species of ticks, 2 species of arthropods, and about 100 species of insects are of economic importance as the main pests. At the same time, although some parasites are of no practical importance, they are considered carriers of the spread of bacteria, viruses, and fungi [3; pp. 198-202, 10; S. 20-21].

As cosmopolitan pests of peanut nematodes: Meloidogyne javanica., Meloidogyne hapla., Meloidogyne arenaria., Pratylenchus brachyurus., Mesocriconema ornatum., Belonaimus longicaudatus, from insects: Microtermes spp (termite), Forcipula quadrispinosa (earthworm), Helicoverpa zea Boddie (corn).), Spodoptera frugiperda (autumn nightshade), Calliptamus italicus L (grasshoppers), Adelphocoris lineolatus Goeze (flies), Coleoptera (more than 100 species of beetles - field and barn pests), Trips tabaci (thrips), from spiders: showing Koch's Tetranychus urticae (spider mites), causing serious damage to young seedlings, leaves, roots, and seeds of peanuts in the larval and sexually mature (adult) periods [3; pp. 46-48, 13; S. 60-62].

India is one of the main peanut-growing countries. 182 species of pests (aphids, nematodes, insects, and mites) belonging to 11 genera and 37 families have been recorded in the peanut fields of India.

Among them, Meloidogyne, Isoptera, Hemiptera, Lepidoptera, Coleoptera, Thysanoptera, Duptera, Orthoptera, and Acariformes, as the main peanut pests, have made 20-30% of the crop unusable. [14; pp. 13-17, 15; S. 58-65].

China, India, Egypt, Nigeria, USA, Congo countries as pests of peanut storage after peanut harvest (ants) Dorylus orientalis, (beetles) Pangaeus bilineatus, Caryedon serratus, Tribolium castaneum, Trogoderma granarium, (from butterfly moths) Ephestia cautella, Plodia interpunctella damages more than 10% of the crop [17; pp. 10-11, 18; S. 23-24].

In cooperation between practicing entomologists and scientists from the United States of America, 10 species of termites were identified as pests of peanuts in African countries (Nigeria, Sudan, Senegal, Ghana, Cameroon, Congo-Ethiopia, Zambia, Zimbabwe, Morocco) [17]. ; 8-9-b 8; pp. 54-58], 8 species of nematodes [2; pp. 91-97], the damage caused by about 200 species of insects in fields and warehouses is determined. [9; pp. 98-102].

Even though African countries have large areas of peanut cultivation, the yield is very low. Many African countries do not allocate sufficient funds for pest control. In this area, agrotechnical, biological, and chemical processing of peanuts from harmful insects is at a low level. [2; pp. 228-230, 4; S. 200-221].

Gada S. Refai and the Valaar. Towards Abu Zayed 2008-2009 9 genera, 27 families, 48 species of insects, and mites were found on peanut plants in Egypt. Among them, 9 genera, 20 families, and 37 species are listed as pests. Among them, 11 species of beneficial insects belonging to 4 families are listed [11; S. 1021-1027].

The United States is the 5th largest producer of peanuts in the world. North Carolina and Virginia are peanut-growing states. The main pests of peanuts in the USA are: thrips - Frankliniella schultzei and Frankliniella fusca (Hinds); Aphid - Aphis

craccivora Koch; from isosceles - Empoasca kerri Pruthi and E. fabae (Harris); from legumes - Heliothis zea (Boddie), Spodoptera frugiperda and Spodoptera litura; small corn stem worm - Elasmopalpus lignosellus (Zeller), peanut leafworm - Aproaerema modicella (Deventer); beetle southern corn beetle - Diabrotica undecimpunctata Howardi Barber; spider mites common spider mite -Tetranychus urticae Koch; termite pickers, Odontotermes, several types of pests have been registered [12; S. 2-7].

In the state of North Carolina, United States of America, 6 species of nematodes, 92 species of insects and 38 species of warehouse pests of peanuts have been reported as peanut pests. [16; S. 4-6].

Khodjaev in Uzbekistan. Sh.T., Kholliev A.T., Gulmurodov R.A., Makhmudov Sh.A. [18; 4th p., 19; 15 p., 20; 5-s.,].

Species composition of pests and beneficial animals that can be found in the peanut plant of the Surkhandarya region of the Republic of Uzbekistan.

№	Local name of the pest	Latin name of the pest
Phylum:Nematoda		
Order: Tylenchida		
Family: Heteroderidae		
1	***Species:****Meloidogyne arenaria*	
2	***Species:****Meloidogyne javanica*	
Phylum: Arthropoda		
Order:Trombidiformes		
Family:Tetranychidae		
3	***Species:*** *Tetranychus urticae*	
Phylum: Arthropoda		
Order:Orthoptera		
Family:Tettigoniidae		
4	***Species:****Decticus verrucivorus L.*	
5	***Species:****Tettigonia viridissima* L	
6	***Species:****Semenoviana plotnikovi* Uv	
Family:Gryllotalpidae)		
7	***Species:*** *Gryllotalpa gryllotalpa L.*	
Family:Acridoidea		
8	***Species:****Calliptamus italicus L*	
Order: Homoptera		
Family: Aphididae		
9	***Species:****Aphis craccivora Koch.*	
10	***Species:****Aphis gossypii glov*	
11	***Species:****Acyrthosiphon pisum Harris*	
Family:Aleyrodinea		
12	***Species:*** *Bemisia tabaci*	
Order:Hemiptera		
Family: Miridae		

13	***Species:*** *Lygus pratensis L.*
14	***Species:****Adelphocoris lineolatus Goeze.*
15	***Species:*** *Creontiades Pallidus Ramber*
Order: Lepidoptera	
Family:Noctuidae	
16	***Species:****Agrotis segetum* Schiff.
17	***Species:*** *Helicoverpa armigera Hbn*
18	***Species:****Phytometra gamma L.*
19	***Species:****Spodoptera exigua Hb*
Order: Thysanoptera	
Family: Thripidae	
20	***Species:*** *Thrips tabaci* Ling.
Order: Coleoptera	
Family: Elateridae	
21	***Species:****Agriotes meticulosus Cand.*
Family: Curculionidae	
22	***Species:****Sitona cylindricollis Fahrs*
23	***Species:****Sitona linellus Bansd*
24	***Species:****Sitona crinitus Hbst*
Order:Diptera	
Family:Agromyzidae	
25	***Species:*** *Phytomyza atricornis Mg*
Beneficial insect species.	
Order:Hemiptera	
Family: Anthocorida	
1	***Species:*** *Orius laevigatus*
Order:Coleoptera	
Family: Coccinellidae	
2	***Species:*** *Coccinella septempunctata*
Order:Diptera	
Family: Cecidomiidae	
3	***Species:****Aphidoletes aphidimyza*
Order:Hemenopter	
Family:Braconidae	
4	***Species:*** *Brakon hebetor* Say.
5	***Species:*** *Apanteles kozak* Nel.
Family:Thrichogrammatidae.	
6	***Species:****Trichogramma evanescens*
7	***Species:****Trichogramma elegantum*
Order:Neuroptera	
Family:Chrysopidae	
8	***Species:****Chrysopa carnea* Steph.

CONCLUSION

(Conclusion/Recommendations). As a result of our research in the southern region of Uzbekistan in 2020-2022, 2 species of nematodes, 1 species of arachnids, 7 species of insects, 25 species belonging to 13 families were identified on peanut plants.

Also registered 8 species of entomophagous belonging to 5 genera and 6 families of insects, which are natural pests and parasites of peanut agro biocide.

Surkhandarya region of the Republic of Uzbekistan.

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