



Araştırma Makalesi

**Observation the Existence of New Pest on Olive Orchards in Turkish Republic of Northern Cyprus: *Omophlus nasreddini* Reitter, 1890 (Coleoptera: Alleculidae)**

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**ABSTRACT**

During this research, *Omophlus nasreddini* Reitter, 1890 (Coleoptera: Alleculidae) was observed as a new insect pest in Turkish Republic of Northern Cyprus. Samples were collected from olive orchards which are located in Lefke, Değirmenlik, Güzelyurt, Girne and İskele districts between end of April and May 2022. With the diagnosis of this pest, the existence of an important olive pest in the Turkish Republic of Northern Cyprus was revealed for the first time with this study.

**Keywords:** *Omophlus nasreddini*, pest, olive, TRNC

**Kuzey Kıbrıs Türk Cumhuriyeti Zeytin Bahçelerinde Yeni Zararlının Varlığının Gözlemlenmesi: *Omophlus nasreddini* Reitter, 1890 (Coleoptera: Alleculidae)**

**ÖZ**

Bu çalışma sırasında, *Omophlus nasreddini* Reitter (Coleoptera: Alleculidae) Kuzey Kıbrıs Türk Cumhuriyeti'nde yeni bir zararlı olarak gözlemlenmiştir. Nisan sonu ve Mayıs 2022 tarihleri arasında Lefke, Değirmenlik, Güzelyurt, Girne ve İskele ilçelerinde bulunan zeytin bahçelerinden örnekler toplanmıştır. Bu zararlının teşhisi ile Kuzey Kıbrıs Türk Cumhuriyeti'nde önemli bir zeytin zararlısının varlığı ilk kez bu çalışma ile ortaya çıkarılmıştır.

**Anahtar Kelimeler:** *Omophlus nasreddini*, zararlı, zeytin, KKTC

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## Introduction

The olive tree (*Olea europaea* L.) is a member of the Oleaceae family reported to originate from Mesopotamia (including Southeast Anatolia). Traditionally, olives are known to be beneficial to human health. It is also consumed as table olives and oil. The majority of olive trees, about ninety-eight percent, are located in the Mediterranean climate (Işık,2010).

It is known that the origin of the olive tree is historically based on the islands of Cyprus and Crete. Although many olive tree varieties are grown in Cyprus, the most grown cultivars are the local cultivars and the Gemlik cultivars. Olive trees can host many different beneficial and harmful insects (Helvacı et al., 2018). Harmful organisms include more than 255 species. Losses in production due to harmful insects are estimated to be 15%. Among these pests, the most common species are Olive fruit fly, *Bactrocera oleae* (Rossi, 1790) (Diptera: Tephritidae), Olive moth, *Prays oleae* (Bernard, 1788) (Lepidoptera: Hyponomeutidae) and Mediterranean land scale, *Saissetia oleae* (Olivier, 1791) (Hemiptera: Coccidae) (Helvacı and Özden, 2020).

Along with these pests, *Omophlus nasreddini* Reitter, 1890 (Coleoptera: Alleculidae) causes significant damages in olive cultivation. Although it was previously considered as a such as cherries, sour cherries, apples and olives, and their larvae feed on the roots and tubers of different plants. However, it is noted that it is an important pest feeding on potato tubers and olive blossoms. Feeding on olive blossoms in the early spring months, *O. nasreddini*, feeding on the pollens in olive flowers and other parts, harms the productivity of olives (Bulak et al., 2013; Samin et al., 2014).

genus, belonging to the Alleculidae family, cause damage to various plants in Russia and Europe. It is very common in Southern Europe and its adults are fed with pollen in the flowers of many forest trees, especially cultivated plants Kaçar et al. (2010), *O. nasreddini* has been recorded as a new pest for olive groves/trees in Gaziantep and Kilis provinces in Turkey. olive

separate family (Alleculidae), it has recently been identified as a subfamily of Tenebrionidae by many authors.

Adults of species of the Cteniopodini tribe are mostly short-lived and may occur on vegetation and flowers where they can feed on pollen. *O. nasreddini* is one of the species belonging to the In this study, it was aimed to identify *O. nasreddini* as a new species in Turkish Republic of Northern Cyprus (TRNC) and to determine its distribution.

## Material and Method

During the spring of 2022, this research was realized on TRNC olive orchards. Non-periodic land surveys were made between end of April and May and samples were collected from olive orchards which are located in Çamlıköy and Yedidalga of the district of Lefke; Kuzucuk and Mehmetçik of the Iskele district; Gökhan and Meriç of Değirmenlik district; Lapta, Alsancak, Karşiyaka, Akdeniz and Çamlıbel in the district of Girne; Güneşköy, Yayla, Kalkanlı and Zümürüköy villages of Güzelyurt district and observations were made (**Table 1**). Collected adult samples were killed and labeled in tubes containing 70% ethanol. Later, these tubes were sent to Çukurova University Faculty of Agriculture, Department of Plant Protection, Biological Control Laboratory to be identified.

flowers in the first months of spring, decreases the yield of olives by feeding on pollen on olive flowers and other parts. Alleculidae family (Coleoptera) which feeds on Balachowsky (1962) stated that many species of the *Omophlus* There are no studies on this pest in the Turkish Republic of Northern Cyprus.

## Results and Discussion

During this study, *O. nasreddini* was determined firstly as an important olive pest in the Turkish Republic of Northern Cyprus and the adults of this species were identified by Prof. Dr. M. Rifat ULUSOY. The study was carried out in the spring of 2022 sampling was accomplished in 16 olive groves in 5 districts and 15 villages of these districts (**Table 1**). During the surveys, nearly 20

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adult specimens were collected from each orchard and identified (**Fig. 1**). The olive tree is damaged by several insect pests, which can cause considerable yield losses (Helvacı and Özden, 2020). As a result of this study, determination the existence of *O. nasreddini*, especially between late April and May by moving to olive trees in groups. This harmful insect basically causes damage during the flowering period of all olive varieties. From late April to May, samples were collected from each olive orchard to observe the existence of *O. nasreddini* and detection of this insect pest in Lefke, İskele, Değirmenlik, Girne and

Güzelyurt, where olive is intensely cultivated in the areas of the TRNC. Based on the fly's high spread potential and its confirmed presence in Lefke, İskele, Değirmenlik, Girne and Güzelyurt and there is a serious threat of its further dispersion, particularly to other parts of the country. To date, published research is not found on existence of *O. nasreddini*. The effect of this pest on flowers of olives in Northern Cyprus exists. During this research, determination the existence of *O. nasreddini* on olive production was investigated. With the diagnosis of this pest, determined for the first time an important olive pest in the TRNC.

**Table 1.** Regions where *Omophlus nasreddini* Reitter, 1890 (Coleoptera: Alleculidae) pest has been detected

No.	Name	District	Village	Number of Samples
1	Ziya Sezey	Lefke	Çamlıköy	16
2	Serhat Usanmaz	Lefke	Yedidalga	14
3	Tahir Çetinkayalı	İskele	Kuzucuk	16
4	Sevim İncirli	İskele	Mehmetçik	15
5	Tanser Nizam	Değirmenlik	Gökhan	13
6	Nilgün Aydın	Değirmenlik	Meriç	15
7	Gürsel Nizam	Girne	Lapta	20
8	Halil Koral	Girne	Alsancak	17
9	Mehmet Aydoğdu	Girne	Karşıyaka	14
10	Osman Konut	Girne	Akdeniz	16
11	Alper Yalçın	Girne	Çamlıbel 1	15
12	Osman Arifoğlu	Girne	Çamlıbel 2	15
13	Akın Akın	Güzelyurt	Güneşköy	17
14	İbrahim Kahramanoğlu	Güzelyurt	Yayla	15
15	Ekrem Madenci	Güzelyurt	Kalkanlı	14
16	Ümit Zeki	Güzelyurt	Zümrütköy	16

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**Figure 1.** Adults of *Omophlus nasreddini* Reitter, 1890 (Coleoptera: Alleculidae).

### Conclusion

As a result of this study, the presence of *O. nasreddini* was determined for the first time in the TRNC. It has been observed that especially between the end of April and the end of May, it has been moved to olive trees in groups, affecting the olive fruit and yield negatively since the flowers are fed with male and female organs. It has been concluded that it will cause yield losses. At the same time, this pest can damage basically all olive varieties during the flowering period. Samples were collected for each olive orchard and presence from March to May. As a result of these samples, the insect *O. nasreddini* was detected. Although the *O. nasreddini* is most concentrated in Lapta and Kyrenia, the lowest population in the Lefke region compared to other regions. As a result of these determinations, it has been concluded that it is a potential pest for the Turkish Republic of Northern Cyprus. On the other hand, there is a need for detailed studies on the biology and damage rate of this species

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