

POPULATION DYNAMICS OF GREEN PEACH APHID, *MYZUS PERSICAE* (SULZ.) (HOMOPTERA, APHIDIDAE) ON PEACH TREE (*PERSICA VULGARIS* MILL.) AND PEPPER (*CAPSICUM ANNUM* L.)

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Summary

During 1998-2000, population dynamics of the green peach aphid, *Myzus persicae* (Sulzer) was studied on peach trees and pepper in Nitra, south-western Slovakia. Population dynamics was observed weekly during the vegetation period. During 1998 and 1999, the first alatae gynoparae on peach were observed in the middle of September. In 2000 it was in the middle of October. The peak of *M. persicae* population was recorded in the first decade of October (in 1998 and 1999), or at the end of October (in 2000). The last aphid individuals were observed in the second decade of December (in 1998) or in the second decade of November (in 1999 and 2000). The first fundatrices were found on April 26 in 1999 and on April 13 in 2000. In 1999, the highest population density of *M. persicae* was found at the end of May. In 2000 it was on June 15. The highest number of migrates alatae was observed on May 24 in 1999 and on June 1 in 2000. After maximum, population of *M. persicae* on peach trees decreased. In 1999, the first individuals of *M. persicae* on pepper were recorded on June 10. The population density increased until the first decade of July and decreased again until the end of August. The second maximum was found in the first decade of September. From that time, the number of *M. persicae* went down until frost destroyed pepper plants. In 2000, the first individuals of *M. persicae* on pepper were recorded on July 27, and maximum of density was found on September 28.

Key words: Peach aphid, *Myzus persicae*, *Capsicum annuum*, *Persica vulgaris*

Introduction

The green peach aphid, *Myzus persicae* (Sulzer) (Homoptera, Aphididae) is of high economic importance with a wide geographic distribution and a wide host range (Emden et al., 1969). Among plant species seriously attacked is pepper in commercial greenhouses where *M. persicae* causes not only direct feeding damage but it is also a prominent vector of cucumber mosaic virus, potato virus Y and alfalfa mosaic virus (Somos, 1984).

In the present study the population dynamics of the green peach aphid was studied on primary host peach tree and secondary host pepper.

Materials and methods

The experiment was conducted at the experimental area of the Slovak Agricultural University in Nitra, Slovakia in 1998-2000. The population dynamics of *M. persicae* was observed on 3 peach trees (varieties Sunhaven, Elberta and Redhaven). At each tree, 20 randomly chosen sprouts were selected. Peach trees were investigated at 7-day intervals. In spring, the period of larval hatching and period of aphid migration from trees were investigated. In autumn, the occurrence of first aphids and their maximum occurrence on peach trees were determined.

The experiment with pepper was carried out in unheated greenhouse situated 30 m near peach trees. Three varieties of pepper (Andrea, Slovakia and PCR) were included to experiment. The population of *M. persicae* on pepper was determined on 3x5 plants of each variety at 7-day intervals.

Results and discussion

In autumn, the first alatae gynoparae on peach were observed in the middle of September (September 18, 1998; September 9, 1999). In 2000, they were observed in the middle of October (October 12) (Tab. 1). Similarly, Praslička (1972) found first alatae gynoparae in Nitra in the second decade of September. In Poznan, Poland, alate gynoparae were observed from the end of September (Wilkaniec, Karczewska, 1993). The peak of *M. persicae* population was recorded in the first decade of October (in 1998 and 1999), or at the end of October (in 2000). The last aphid individuals were observed in the second decade of December (in 1998) or in the second decade of November (in 1999 and 2000).

In our results, the first individuals of the fundatrix generation were found on April 26, 1999 and on April 13, 2000 (Tab 1.). Praslička (1972) found the first adult fundatrix at Nitra locality from March 24 to April 13. Similar results were recorded at Poznan, Poland, where the first larvae of the fundatrix generation hatched from over-wintering eggs at the beginning of April (Wilkaniec, Karczewska, 1993). In 1999, the highest population density of *M. persicae* was found at the end of May. In 2000

it was on June 15. The highest number of migrates alatae was observed on May 24 in 1999 and on June 1 in 2000. After maximum, population of *M. persicae* on peach trees decreased.

In 1999 (Fig. 1), the first individuals of *M. persicae* on pepper were recorded on June 10. The population density increased until the first decade of July and decreased again until the end of August. The second maximum was found in the first decade of September. From that time, the number of *M. persicae* went down until frost destroyed pepper plants. In 2000 (Fig. 2), the first individuals of *M. persicae* on pepper were recorded on July 27, and maximum of density was found on September 28. Praslička (1972) found the maximum of *M. persicae* population on pepper in the middle of July.

In 1999, the last aphid individuals on pepper were observed in the second decade of November. In 2000 it was at the end of November (variety Slovakia – November 16; variety PCR-November 23; variety Andrea – November 30). According to Praslička (1972), high occurrence of *M. persicae* was found at Nitra locality from the beginning of June till the middle of August.

During 1999-2000, the highest infestation by *M. persicae* was observed on the pepper variety Andrea and the lowest infestation on variety PCR (Fig.1. and 2.).

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Table 1 Population dynamics of the green peach aphid, *Myzus persicae* (Sulzer) on *Persica vulgaris* L. at the locality Nitra during the years 1998-2000

		1998	1999	2000
Autumn	The first occurrence alatae gynoparae	September 18	September 8	October 12
	The maximum of population density	October 8	October 8	October 26
	The maximum of migrantes alatae population	October 15	October 8	October 26
	The last individuals	December 17	November 19	November 16
Spring	The first occurrence of adults		April 26	April 19
	The maximum of population		May 31	June 28
	Date of migration from the primary host		1. decade July	1. decade July

Table 2 Population dynamics of the green peach aphid, *Myzus persicae* (Sulzer) on *Capsicum annum* L. at the locality Nitra during the years 1999-2000

	1999	2000
The first occurrence	June 10	July 24
The maximum of population	July 1 and September 9	September 28
The maximum population of migrates alatae	October 14	October 5

Fig. 1 Population dynamics of green peach aphid, *Myzus persicae* (Sulz.) on three varieties of *Capsicum annum* L. in 1999

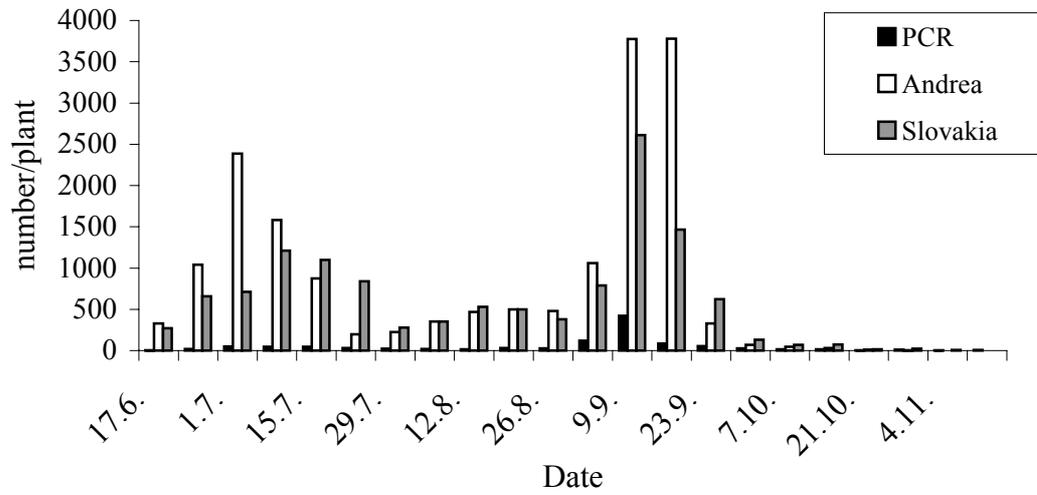


Fig. 2 Population dynamics of green peach aphid, *Myzus persicae* (Sulz.) on three varieties of *Capsicum annum* L. in 2000

