Plant and Soil Science

Journal homepage: https://agriculturalscience.com.ua/en
Plant and Soil Science, 14(4), 9-20
Received: 10.07.2023 Revised: 17.10.2023 Accepted: 22.11.2023

UDC 632.913:595.42:582.781

DOI: 10.31548/plant4.2023.09

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New record of *Anthocoptes platynotus* Nalepa (Acari: Eriophyoidea) and its abundance on *Cornus mas* L. in the northern part of a Forest-Steppe zone of Ukraine

Abstract. The superfamily Eriophyoidea is a large and diverse group of mites that includes a number of species that parasitise plants of economic importance, mainly perennial plants in agriculture and forestry. The purpose of this study is to examine the cornel plants plantations in

Suggested Citation:

Bondareva, L., Chumak, P., Strygun, O., Tymoshchuk, T., & Zavadska, O. (2023). New record of *Anthocoptes platynotus* Nalepa (Acari: Eriophyoidea) and its abundance on *Cornus mas* L. in the northern part of a Forest-Steppe zone of Ukraine. *Plant and Soil Science,* 14(4), 9-20. doi: 10.31548/plant4.2023.09.

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the botanical gardens of Kyiv and Zhytomyr (Ukraine) for the presence and damage by mites of the superfamily Eriophyoidea. During the study, field and laboratory methods were used in accordance with generally accepted methods in acarology and plant protection. As a result of the study, on *Cornus mas* L. plants, a four-legged mite *Anthocoptes platynotus* Nalepa, 1898 was found. This is the farthest northern distribution zone of the species in Ukraine. New data on the harmfulness of this species were received. It was determined that under *A. platynotus* feeding, there was a slight deformation of the leaf lamina on both sides of the leaf veins, there was no leaf bleaching. The population level of *A. platynotus* on six varieties of a plant subg. Cornus was determined. It was established that it was different. Phytophage-mite damaged the varieties "Elegantnyi" and "Kubanskyi" the most. The least affected were the varieties "Mosvir-1" and "Novyi". The varieties "Bylda" and "Svitliachok" had a medium degree of damage. *A. platynotus* lives on the underside of a leaf and does not form galls or felt. The peak of phytophagous population in the research region occurs at the end of July. It was noted that a low number of *A. platynotus* does not substantially affect the growth and development of the leaves on the fodder plant. The practical value of the study lies in the fact that the information on *A. platynotus* presence, abundance, and spread will help in sampling the mites and making future management decisions

Keywords: four-legged mites; identification; varieties; spread; harmfulness; population

INTRODUCTION

Cornel (*Cornus mas* L.), a shrub or small tree, is one of the most valuable fruit, medicinal, technical, and ornamental plants. The fruits of cornel contain carbohydrates (glucose, fructose), pectin substances, polyphenols, ascorbic acid, various vitamins, mineral salts of potassium, phosphorus, calcium, phosphorus, iron, magnesium, biologically active substances. Sweet fruits of cornel are used for food – jams, jellies, marmalades, jams, extracts, fillings, syrups, kvass, compotes, soft drinks are made from them. Fresh fruits and juice of cornel are used in medicine as an astringent, tonic, antifever, appetizing, antirheumatic, antidiabetic remedy. For medicinal purposes, shoots, leaves, bark, roots, seeds are also used. Cornel is an excellent mellifer, blossoms one of the first fruit seed and stone crops. It is valued not only for its high yield and excellent nutritional and flavour qualities of fruits, but also for its high economic efficiency and environmental friendliness. However, cornel plantation is a habitat for some pest species. One of the groups of pests damaging cornel is mites of the superfamily Eriophyoidea (Acari: Eriophyoidea). They are very small organisms and are almost impossible to observe with the naked eye without the use of some kind of microscopic device.

Eriophioid mites are obligate phytophagous and for the most part exhibit a high level of host specificity and adaptability. They are capable of infesting almost all parts of plants, excluding roots. As noted by E. de Lillo *et al.* (2018), many species of Eriophioid mites are considered economically important because of certain damages such as chlorotic spots, galls, blotches, stunting, or curling of leaf edges that they can cause. Some species can transmit phytopathogenic viruses (Kubota *et al.*, 2022; Albrecht *et al.*, 2022).

To date, about 5000 species of Eriophioidea have been described, which, according to experts' estimates, is no more than 5-10% of their global diversity (Bondareva & Timoshchuk, 2020). One of the reasons for the poor examination of the group is the extremely small size of Eriophioidea (100-300 µm in length), which allows considering them as one of the examples of multicellular organisms that are on the verge of miniaturisation. According to K. Kołątaj (2017), the small size and low mobility of eriophioid mites allow them to passively spread over long distances through air currents, rain, and especially through trade in planting material and food.

Most quadrupedal mites are vagrant species on exposed plant parts, but latent forms are present among many Eriophiidae. According to V. Martynov *et al.* (2021), the response of plant cells to mite feeding varies considerably in severity. Free-living Eriophiidae in most cases do

not cause damage visible to the naked eye, but in case of mass reproduction may lead to rusting, bronzing, or chlorotic appearance of damaged parts. A relatively limited proportion, approximately 10-15% of these mites, reside in natural storage sites on the host or within the galls they create (Jiang *et al.*, 2021).

In recent decades, there have been almost no focused studies of species and structural diversity of four-legged mites in Ukraine. However, every year acarological scientists around the world describe new species of mites of the superfamily Eriophyoidea that pose a threat to plants. For example, F. Bahirai *et al.* (2021) recorded 11 new species of four-legged mites in Lorestan province of Iran on different host plants. According to Y.P. Yanovskyi *et al.* (2021; 2022), currently, outbreaks of mass reproduction of four-legged mites on garden plants are recorded everywhere in Ukraine, which leads to the relevance of ecological and faunistic studies. Despite the importance of these mites as pests, knowledge about their distribution and trophic relationships in Ukraine is largely insufficient.

Overall, the examination of four-legged mite activity in various fruit and berry crops remains pertinent. Neglecting these potentially harmful biological factors could result in decreased drought and frost resistance, ultimately leading to a substantial decrease in crop yields. Knowledge of the biology, ecology, and behaviour of these phytophages is necessary to develop programmes for effective control of the number of four-legged mites. Detailed data on the development cycle of the main mite pests under natural conditions, including the influence of weather and climatic conditions and host plant type, are required.

Therefore, the objective of this study was to examine the botanical gardens of Kyiv and Zhytomyr to identify mites of the superfamily Eriophyoidea in cornel plantations. The tasks included the analysis of trophic relationships of phytophagous mites, and the primary assessment of population status and the degree of harmfulness. The use of sticky tapes as a method of effective phytosanitary monitoring of mites will allow for detecting mites at early stages.

MATERIALS AND METHODS

The monitoring was conducted in 2021-2022 from May to September on the territory of Botanical Garden named after academician O.V. Fomin in Kyiv, in the National Botanical Garden named after M.M. Hryshko (National Academy of Sciences of Ukraine), in the Laboratories of non-traditional fruit cultures of the production unit National University of Life and Environmental Sciences of Ukraine, in The Botanical Garden of Polissia National University in Zhytomyr.

Six varieties of *Cornus mas* L.: "Elehantnyi", "Kubanskyi", "Bylda", "Svitliachok", "Mosvir-1", and "Novyi" were inspected in the Laboratories of non-traditional fruit cultures of the production unit of the National University of Life and Environmental Sciences of Ukraine. Thirty cornel leaves of each variety from the lower side were examined, and when the lamina was deformed, both the phytophagous density and the leaf damage were determined on a five-point scale (Table 1).

Table 1. The qualitative and quantitative scale of density of *Anthocoptes platynotus* population on the leaves of *Cornus mas*

Signs of damage	The area of the leaf surface with the signs of damage, %	Point
No damage	The leaf surface without noticeable signs of deformation near the main and the side veins	0
Damages are slightly noticeable (the surface across the main and the radial leaf veins is deformed)	3-4	1
Slight	5-10	2
Medium	11-20	3
Severe	21-50	4
Very severe	> 50	5

Source: developed based on the study by C.O. Trybel *et al.* (2001)

A transparent adhesive tape was used to identify and estimate the number of mites according to P.Y. Chumak *et al*. (2020) (Fig. 1). The adhesive side of the tape was placed on the cornel leaves and slightly pressed with the fingers.

Figure 1. The use of translucent adhesive tape for mite monitoring
Source: photo by the authors

The prints obtained on one piece of tape were placed on the appropriate sized glass slide with the sticky side to the glass, and a roll of tape was cut off from the preparation with the scissors. The mite samples were labelled with a marker. The sample number, date, and place of picking were noted in the notebook. The use of adhesive tape for the examination of eriophyoids allowed obtaining data on the presence of the object and simultaneously detecting almost all stages of both live and dead pests. While picking the pests, there are predatory insects and mites which after 'shaking off' disappear quickly and are out of sight. Therefore, this method opens up new possibilities for analysing the locations of mites on the lower and upper surface of leaves, near the base of leaves and evaluating the effectiveness of acaricides and their effect on predatory mites.

The mite specimens were placed on the slides in Hoyer's liquid. They were identified using a microscope Optika B-350 (Country of manufacture – Italy). Microphotographs of the live objects were taken with a microscope Leica M 165C (Country of manufacture – Germany), and the mite photographs were taken with a microscope Optika B-350 and a digital camera Sigeta MDC-200 2.0 MP (Country of manufacture – China). The material used in the study is stored in the collection of the Department of Entomology, Integrated Protection, and Plant Quarantine of the National University of Life and Environmental Sciences (Kyiv, Ukraine).

To determine the effect of eriophyoidous mites on the growth and development of leaves of *Cornus mas*, the leaf damage index (I_s) was used, which was determined by the formula (Trybel *et al*., 2001):

$$I_s = \sum \frac{100ab}{5N}, \quad (1),$$

where I_s – the index indicator of leaf damage, %; Σ (ab) 100 – the sum of indicators multiplication of tested leaves number (a) by the degree of phytophagous damage to the leaves (b); N – total number of the tested leaves; 5 – a higher degree of the damaged leaves on a five-point scale.

The area of a leaf surface was calculated according to P.V. Savchenko & N.S. Kozhushko (2013). Digital data were processed using indices accepted in statistics. The mathematical processing of the measurement results was conducted using the package of MS Excel. The experimental studies of plants (both cultivated and wild), including the collection of plant material, were conducted in accordance with institutional, national, or international guidelines. The authors adhered to the standards of the Convention on Biological Diversity (1992) and the Convention on Trade in Endangered Species of Wild Fauna and Flora (1979).

RESULTS AND DISCUSSION

The *Anthocoptes platynotus* Nalepa (1898) (Acari: Eriophyoidea) was first registered when examining cornel (*C. mas*) in urbophytocenosis of northern Forest-Steppe of Ukraine in 2021 (Fig. 2).

For the first time, the mite species was found in the Botanical Garden named after academician O.V. Fomin in Kyiv (latitude: 50°44' N, longitude: 30°50' E), in the National Botanical Garden named after M.M. Hryshko (National Academy of Sciences of Ukraine (latitude: 50°41' N, longitude: 30°56' E), in the Laboratories of non-traditional fruit cultures of the production unit of the National University of Life and Environmental Sciences of Ukraine

(latitude: 50°38' N, longitude: 30°50' E), in The Botanical Garden of Polissia National University in Zhytomyr (latitude: 50°25' N, longitude: 28°69' E).

Figure 2. *Anthocoptes platynotus* Nalepa

Source: photo by the authors

According to the original description of *A. platynotus* made by Nalepa in 1898, the body of the female is oblong and narrow. The shield is almost pentagonal and smooth and protrudes above the rostrum. Scapular setae (*sc*) are about half the length of the shield directed upwards; humps are large, widely spaced, and distant from the rear edge. Rostrum is small. Legs are rather short, Gl. 4 and 5 are almost the same length. The claw is 4-ryed. Sternal side is not bifurcated. The abdomen has 13 wide, smooth posterior half-rings, they are strongly flattened, their side parts bent at an angle. Setae *c2* are long and very delicate. Setae *d* are slightly shorter than setae *e*, very short and delicate. The cover flap is striped. Setae I are quite long. ♂ body length is 130 µm, width is 30 µm; ♀ body length is 150 µm and width is 40 µm. A species infests a fodder plant *C. mas*. Slightly twisted leaves are mostly discoloured (Nalepa, 1898).

There is very little information in the literature about the spread and harmfulness of *A. platynotus* on the plant species of Cornaceae in Europe. Earlier, the mite was identified on *Cornus sanguinea* and *Cornus mas* in Hungary and Italy (Hillring, 2003; Ripka, 2007; Ripka, 2008). In the authors' opinion, the mite population in the northern part of a Forest-Steppe zone of Ukraine, characterised by more severe winter conditions compared with subtropical climates in Italy and the temperate climates in Hungary, points at the range of the ecological valence of a mite-phytophagous.

The feed attractiveness of six varieties of *C. mas* and the infestation density on the leaves were analysed (Table 2).

Table 2. Population density of *Anthocoptes platynotus* on *Cornus mas* plants (average during the period of 2021-2022)

Varieties	Point of damage	Adult, specimen/leaf		Larva and nymphs, specimen/leaf		Dead specimen/leaf, %
		Total	Per leaf	Total	Per leaf	
"Elehantnyi"	3-4	380.0	42.2	110.0	12.2	11.2
"Kubanskyi"	3-4	290.0	36.3	110.0	13.7	12.5
"Bylda"	2-3	350.0	31.8	20.0	1.8	9.1
"Svitliachok"	1-2	210.0	23.3	0.0	0.0	11.1
"Mosvir-1"	0-1	120.0	15.0	50.0	6.3	12.5
"Novyi"	0-1	10.0	1.3	0.0	0.0	12.3

Source: compiled by the authors

As follows from the results of a cornel plant inspection, there are some differences in the density of mite infestation on different varieties. The varieties "Elehantnyi" and "Kubanskyi" were the most damaged (4 points). The average number of adults per leaf equalled 36.3-42.2 specimens, larvae – 12.2-13.7 respectively. Medium mite infestation was registered in "Bylda" variety (point of damage – 2-3). There were registered 31.8 adult per leaf and 1.8 larvae per leaf on this variety. The degree of damage – 1-2 points and 23.3 adults per leaf were registered in the variety "Svitliachok". The plants grew side by side and did not have any separating barriers, the general insolation and the humidification conditions were similar, but the infestation of two varieties, "Mosvir-1" and "Novyi" with *A. platynotus,* was substantially less (the point of damage – 0-1), the mite number equalled 1.3-15.0 adult per leaf and 0.0-6.3 larva per leaf. The noticeable signs of plant damage were not detected.

Notably, there was a great amount (9.1-12.5% depending on the variety) of dead, dry, and transparent mites on the leaves of *C. mas.* It is known that no pesticides were applied on the plots of laboratories of non-traditional fruit cultures of production for 12 years. Perhaps, it is connected with the activity of a mite *Zetzellia mali* from Stigmaeidae, because its specimens were found on the leaves.

No larva was found on the varieties "Svitliachok" and "Novyi" when the samples were taken. It can indicate both the speed of a mite development and the resistance of the varieties to *A. platynotus*. Presumably, on some varieties, the mite goes through all stages of development faster than on others. There is age-related heterogeneity of a tested population of *A. platynotus* (larvae and nymphs, their ratio on different varieties), that can promote a population's survival and can be a sign of species viability.

The information about the eriophyoidous mites on plants is different in many taxonomic and faunistic papers. There are some singular studies that consider the real influence of these mites and the changes that occur in plants when they interact. As noted by L.A. Ivanova *et al.* (2022), the gall mite infestation resulted in chlorosis, destruction of photosynthetic apparatus in gall-infected leaf parts, leaf deformation, and a decrease in leaf area. Such a factor as a variety can affect the population of four-legged mites. There is fragmentary information in the available literature about the damage to the varieties of cultivated plants by eriophyoidous mites. V. Moskalets *et al.* (2022) observed that the damage inflicted by *Aceria huppopara* Nal. on early-ripening sea-buckthorn varieties was lower than the damage observed in medium- and late-ripening varieties.

L.M. Bondareva & P.Ya. Chumak (2021) point to the variability of infestation and damage by *Eriophyes pyri* Nal. to the plants of pear varieties. Heavily damaged are mostly the varieties of the winter-ripening period. As noted by J. Moreira *et al.* (2020), *Aculus schlechtendali* Nal. is found on all examined apple varieties in Brazil, with a greater number on the Fudzhy and Yeva varieties and a smaller phytophagous population on the Gala variety.

Mite reactions to different plant species can be different depending on the differences in the nutritional value of the leaves and surface morphology, the availability of toxic components and accumulation of secondary metabolites, the availability of necessary enzymes in mites and their digestive capability, etc. (Boom *et al*., 2003). The degree of mite infestation can depend on the degree of lamina pubescence. However, having conducted the comparison of lamina pubescence and intensity of infection by mites, the authors did not detect any coherence. It cannot be excluded that *A. platynotus* will infest other varieties of *Cornus mas* in the botanical gardens, considering the fact that a variety resistance to any specialised phytophagous is always relative, eventually, even a relatively resistant variety becomes a favourite one for a pest.

A. platynotus lives on the underside of a leaf and does not form galls or felt. This mite overwinters in a form of deitogeynous female inside the buds of cornel plants, and then all spring forms of mites move to the leaves and begin feeding and laying eggs. According to observations in the conditions of the northern Forest-Steppe zone of Ukraine, the activity of the mite begins in May and continues untill the middle of September. In general, the four-legged mites reproduce quickly. The peak of *A. platynotus* number in the research region is at the end of July.

The potential for eriophyoidous mites spreading by moving is limited, and the ways of spreading are wind or phoresis. The dispersion of phoresis occurs when these mites stick to other organisms to be transferred to a new host. Spreading by the wind is more risky for these organisms because due to the high host specificity of these mites, there is little chance of reaching the appropriate host. On the contrary, having a pollinator of the host plant, the chances for reaching the appropriate host increase as in the case of *Aceria litchii* Keifer (Acari: Eriophyidae), which is associated with bees that pollinate lychee trees (Jiang *et al.*, 2021) and *Aceria pallida* Keifer (Acari: Eriophyidae), which is associated with *psyllidae Bactericera gobica* Loginova (Hemiptera: Triozidae) (Liu *et al.*, 2019).

The biological colonisation of agricultural plants by four-legged mites can have negative consequences, including reduced yields. Hence, gathering and analysing data regarding the biological and ecological characteristics, including their dispersal abilities, serves as a valuable predictive model for pests, specifically, *A. platynotus*. As noted by L. Kuczyński *et al.* (2020), the examination of the settlement process is especially difficult when considering microscopic organisms, such as four-legged mites, which spread passively.

In order to detect a particular pest in a time, it is extremely important to identify the signs, characteristic of the damage caused by this pest. A. Nalepa (1898) indicates the reaction of a plant on mite nutrition in the form of slightly folded or twisted, mostly bleached leaves. In the available literature, there is no detailed description of the character and possible extent of damage which *A. platynotus* phytophagous can cause to a fodder plant. According to the authors' observations, the leaves of all tested varieties of cornel do not get twisted. There is a slight deformation of the lamina on both sides of leaf veins by the basis of side leaf veins. There is no leaf bleaching (Fig. 3).

The results of the study testify to the fact that there is some influence of *A. platynotus* on the growth and development of cornel leaves but it is characterised by rather low indicators (Table 3). According to the data received after a one-factor analysis, the average area of one leaf of *Cornus mas* "Macrocarpa" decreases from 56.1 dm^2 under a low degree of mite infestation (1 point) to 54.9 dm^2 in a variant with heavy leaf damage (4 points). Thus, no serious damage to the dogwood plant by *A. platynotus* was identified.

Figure 3. A lower side of a leaf of *Cornus mas* is infested with *A. platynotus*
Source: photo by the authors

Table 3. The influence of *Anthocoptes platynotus* on the growth and development of leaves of *Cornus mas* "Macrocarpa"

Degree of damage, point	Leaf parameters (dm^2)	Statistical comparison of the variants			
		Difference between the average	F-Fisher criteria	Relevance	Impact power
3-4	54.9 ± 1.935	1.20	0.178	0.8547	0.09998
0-1	56.1 ± 2.084				

Source: developed by the authors

The nature of the damage, caused by eriophyoidous mites and the assessment of yield losses still require detailed research if appropriate strategies on population control and risk reduction are to be planned. An important measure for plant protection from mites is to observe basic preventive measures. The new plants should be sufficiently isolated from those places where the plantations were colonised by phytophagous mites. Planting material must be checked for the absence of pest infestation. In addition, agrotechnical methods of plant care must be followed. Knowledge about the resistance of agricultural crop varieties to phytophagous mites will allow reducing pesticide burden and costs of conducting the protection measures.

The natural predators of four-legged mites, such as predatory mites or acariphages (*Amblyseius finlandicus* Oudemans, 1915; *Paraseiulus soleiger* Ribaga, 1904), *Phytoseiulus persimilis* (Athias-Henriot, 1957), thrips (*Scolothrips sexmaculatus* Pergande, 1891), (*Chrysoperla carnea* Stephens, 1836), and phytopathogenic fungi (*Beauveria bassiana* (Balsamo-Crivelli), Vuillemin, 1912; *Streptomyces avermectinius* Takahashi and others, 2002), induce epizootic outbreaks, contributing to the destruction of these four-legged mites (Moskalets *et al.*, 2022).

Biological control is not yet sufficiently used for the control of the mite, although entomopathogenic fungi are one of the most promising alternatives, which is demonstrated by the substantial mortality of eriophyoids in the field. Chemical control of eriophyoids leads to failures due to resistance to acaricides, which is surprising when compared to the global problem of fighting against spider mites (Van Leeuwen & Dermauw, 2016). The use of mites-resistant plant varieties leads to a reduction in economic costs in the cultivation of fruit and berry crops and is one of the factors in the development of cultivation technologies to increase yields. Results show differences in mite infestation among *C. mas* cultivars that can be used to develop new mite-resistant *C. mas* plantations.

Cornel has medicinal and decorative properties, and increasing global trade in this plant is likely to facilitate the further introduction of associated arthropods, particularly four-legged mites. The results support this claim. *A. platynotus* was first detected in the northern part of a Forest-Steppe zone of Ukraine. At low numbers, the mite rarely causes substantial damage to *C. mas*, but when its numbers increase, it can lead to serious damage. More intensive examination of cornel in the parks, gardens, and nurseries will undoubtedly lead to further records, providing a better understanding of the distribution of alien arthropod species in Ukraine.

CONCLUSIONS

Thus, the study informs about the first identification of *A. platynotus* Nalepa on the *C. mas* bushes in the botanical gardens of the Northern part of a Forest-Steppe zone of Ukraine. The mites were identified on six varieties of host plants with different infestation densities. At the time of inspection, the highest point (3-4) of cornel plant infestation with phytophagous was registered on "Elehantnyi" and "Kubanskyi" varieties. The number of adults per leaf was 36.3-42.2, and larvae – 12.2-13.7, respectively. The medium mite infestation was observed in the variety Bylda (2-3). On this variety, 31.8 adults per leaf and 1.8 larvae per leaf were recorded. The variety "Svitliachok" showed a damage level of 1-2 points and an adult number of 23.3 per leaf. The lowest point of damage by mites (0-1) was identified on "Mosvir-1" and "Novyi" varieties. A further wide implementation of resistant varieties of dogwood will contribute to reducing the number of pests, in particular *A. platynotus*.

The low number of *A. platynotus* does not have a substantial influence on the growth and development of *C. mas* leaves. It was determined that the average area of one leaf of *Cornus mas* "Macrocarpa" decreased from 56.1 dm^2 with a low degree of mite infestation (1 point) to 54.9 dm^2 in the variant with severe leaf damage (4 points). The diagnostic signs of cornel leaves damaged by the mite are slight deformation of the leaf blade on both sides of the leaf veins at the base of the lateral leaf veins. Yellowing of the leaves is not observed. In the course of the study, the method of monitoring cornel plants when using adhesive tapes for selecting the specimen of this population has been improved. Knowledge of the number, location of the pest,

and the damaged varieties is important for species monitoring and for future measures on pest control. Monitoring will help to understand the pattern of pest spread and contribute to the understanding of how the spread of this pest could have occurred on research areas.

Further research will be directed at researching the risk of the productivity reduction of the *C. mas* bushes infested by *A. platynotus,* determining the economic limits of its harmfulness and developing ecologically safe measures of establishing the phytophagous number.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

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Нова знахідка *Anthocoptes platynotus* Nalepa (Acari: Eriophyoidea) та його чисельність у насадженнях *Cornus mas* L. в північній частині Лісостепової зони України

Анотація. Надродина Eriophyoidea є великою і різноманітною групою кліщів, які паразитують на багаторічних рослинах, що мають важливе економічне значення у сільському та лісовому господарстві. Їх поширення територією України може спричинити значні втрати врожаю, що визначає актуальність моніторингу насаджень на предмет наявності цього виду паразитів. Метою цього дослідження було обстеження насаджень кизилу в ботанічних садах м. Київ і м. Житомир (Україна) на предмет заселення та пошкодження кліщами надродини Eriophyoidea. Під час проведення досліджень використовували польові та лабораторні методи згідно із загальноприйнятими в акаралогії та захисті рослин методиками. В результаті досліджень вперше на рослинах *Cornus mas* L. виявлений чотириногий кліщ *Anthocoptes platynotus* Nalepa, 1898. Це найбільш північніша зона поширення виду в Україні. Отримано нові дані про шкідливість цього виду. Встановлено, що при живленні *A. platynotus* спостерігається незначна деформація листової пластини по обидва боки жилок, знебарвлення листків відсутнє. Визначили рівень заселеності *A. platynotus* на шести сортах рослин subg. Cornus. Встановлено, що вона була різною. Кліщ-фітофаг найбільше пошкоджував сорти: «Елегантний» і «Кубанський». Найменше заселяв сорти «Мосвір-1» і «Новий». Середній ступінь пошкодження мали

сорти «Билда» і «Світлячок». *A. platynotus* мешкає з нижнього боку листка і не утворює гали чи повсть. Пік чисельності фітофага в регіоні досліджень припадає на кінець липня. Відмічено, що за низької чисельності *A. platynotus* не впливає суттєво на ріст і розвиток листків кормової рослини. Практична цінність роботи полягає в тому, що інформація присутності, чисельності та поширення *A. platynotus* допоможе у моніторингу кліща і прийнятті майбутніх управлінських рішень

Ключові слова: чотириногі кліщі; ідентифікація; сорти; поширення; шкідливість; популяція