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(Primljeno 16.01.1997.)

ERIPHYOID MITES (*ACARI: ERIOPHYOIDEA*) AGENTS OF BIOLOGICAL CONTROL OF WEEDS - BASIS FOR APPLICATION AND SO FAR EXPERIENCES

by

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Summary

Eriophyoid mites are considered to be primary candidates, among phytophagous mites, for biological control of weeds. Interest for investigation of some species of this mites especially in the last decade is based first of all on their monofagousity, but also on the capacity to influence host growth and reproduction.

Interest for the application in programs of classic biological control, together with other suitable agenses is especially high.

In this paper bases for the application, i.e. attributes of eriophyoid mites which make them suitable agents and so far results of application and investigations on potential agents as well as list of eriophyoid mites as potential agents are presented. In addition, some species of eriophyoid mites which diregarding their harmful effect on weed species are problematic as agents of biological control because they can damage economically important species are mentioned.

Among 35 species listed as potential or already applied eriophyoid mites, 20 have also been registered in Yugoslavia, and 4 species: *Aceria dissecti* Pet., *Vasates euphorbiae* Pet., *Aceria jovanovici* Pet. and *Epitrimerus lythry* Pet. have been described from Yugoslavia and they can be considered candidates in the programs of classic control of economically important weeds in North America, *Geranium dissectum* L., *Euphorbia* spp. and *Lythrum salicaria* L.

The populations of *Aceria malherbae* Nuzz. from Greece and Italy and *Aculus hyperici* (Liro) from France, are already applied in the world against *Convolvulus arvensis* L., and *Hypericum perforatum* L., *respectively*. Due to the fact that these two species have been registered also in our country, there are elements, having in mind specifity of biotypes, that our population can also be applied if there is interest for this.

BACTERIAL SOFT ROT OF CABBAGE HEAD

by

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Summary

During August and September 1995, a soft rot of significant percentage of cabbage heads was noticed in a field near Novi Sad. From the diseased cabbage heads tissue a great number of bacterial strains were isolated. Ten of them (Ku-110,..., Ku-127) were studied in detail. The investigated strains expressed the following common characteristics.

- High level of pathogenicity expressed as soft rot of inoculates slices of potato, carrot, parsley, parsnip, watermelon, and melon, fruits of cucumber, pepper, and tomato, fragments of cabbage leaves and onion bulbs and wilting and stem rot on sunflower. Our strains do not cause soft rot of red beet slices and fragments of sansevieria leaves, corn young plants, nor the hypersensitive reaction of tobacco leaves (Table 1).
- Bacterial cells of all investigated strains are Gram negative, asporogenous, and rodshaped.
- On nutrient medium cabbage strains formed convex, shiny, round and white-cream colonies; on Logan's differential medium the colonies formed were pink in the centre and light-red toward margines; grow at 37°C and also in presence of 5% NaCl; on the King's medium B do not produce green flourescent pigment.
- Investigated strains do not produce oxidase, lecithinase, phosphatase and indole but create catalase and reducing substances from sucrose; starch not utilisate but O/F test and acid production from lactose and maltose were positive. The strains varied in sensivity to erythromycin (Table 2).

According to the results obtained it could be concluded that all strains investigated belong to the bacterium *Erwinia carotovora* ssp. *carotovora* (Jones 1901) Bergey et al. 1923.

WINTER WHEAT WEED COMMUNITY IN THE KOSMAJ REGION

by

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Summary

On the basiss of the investigations on floristic composition and morphology of the weed association in the winter wheat of the Kosmaj region the folloving conclusion are made:

In winter wheat crop of the Kosmaj region weed association: *Consolido-Polygonetum aviculare* is present K o j i ć et all. 1973. which belongs to alliance *Caucalion lappulae* Tx. 1950, order *Centyauretalia cyany* Tx., L o h m. et P r s g. 1950. and class *Stellarietea mediae* Tx. L o h m. et P r s g. 1950.

In the floristic composition of this association 64 weed species are present, which belong to the characteristic combination of species.

The association has terrophytic character with high presence of geophytes and hemycryptophytes.

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CONTRIBUTION TO THE STUDY OF *LEPIDIUM DRABA* L. ENTOMOFAUNA

by

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Summary

Investigations on entomofauna of weed - rudereal plant *Lepidium draba* L. were carried out in 1988, 1989, in two localities in New Belgrade (block 28 and 42).

Insects were collected with sweeping method by a net, in the period from April till June, when the plant was in a full vegetation.

A total of 82 species from 33 families and 9 genera has been registered. The phytophagous species were most frequent (73%), than follows zoophagous (15%), and species with mixed

regime of feeding (12%). The index of the faunistical similarity between two localities and for two investigation years was high, between 70% and 90%.

Number of imagines follow the *Lepidium draba* developing, so the largest number was in the first half of April when the young shoots intensively grow and in the second decade of May in the period of full plant blooming. Among phytophagous insects, poliphagous and oligophagous species which feed on the plant and keep their population, were represented.

Lepidium draba as a transitive host plant has a great role in keeping and increasing numbers of many insects species from where they can go over on cultivated plants.

As potential *Lepidium draba* biocontrol agent, some oligophagous species of *Ceuthorrhynchus genus*, specially *Ceuthorrhynchus aeneicollis* can be considered.

EFFICACY OF OIL AND INSECTICIDES IN POTATO PLANT PROTECTION AGAINST INFECTION BY POTATO VIRUS Y AND LEAF ROLL VIRUS (PVY AND PLRV)

by

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Summary

In the course of two-year investigations research on the effect of seven-day application of 3% emulsion of Whithe oil (80% mineral oil) and 40 day application of 0,1% solution of Metasystox-i (demeton-s-methil) on preventing infection of potato plants by PVY and PLRV was carried out.

The results of the investigation proved that White oil had an effect on preventing infection caused by PVY (average infection of treated plants 24,8% and not treated 46,8%) with the efficacy of 47,0%. The application of Metasystox had no effect on plant protection against the infection caused by PVY.Average infection of plants on treated variant was 47,0%, and on not treated it was 46,8% (efficacy -0,4%). The application of Metasystox had an effect on plant protection against infection caused by PLRV where infection of plants were 2,0%, and on not treated it was 6,5% (efficacy 69,2%).

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Original scientific paper

CONTRIBUTION TO THE STUDY OF VIRAL DISEASES OF CUCUMBER IN YUGOSLAVIA

Watermelon mosaic virus (ex WMV-2) was isolated from viral infected cucumber plants growing in a field in the Vrnjačka Banja region, Serbia, Yugoslavia. Plants were affected by a foliar green mosaic and some malformation and stunting. The identification and characterization of the virus was based on a study involving plant symptomatology, host range, means of transmission, biophysical properties, particle morphology, and serological analysis.

Key words: cucumber, watermelon mosaic virus, vector.

Introduction

Cucumber (*Cucumis sativus* L.), as many other species of the *Cucurbitaceae*, is a natural host of many plant viruses. Among these pathogens the most common are considered to be cucumber mosaic virus (CMV), cucumber leaf spot virus (CLsV), cucumber necrosis virus (CNV), cucumber green mottle mosaic virus (CGMtMV), and a few others (Šutić, 1995., Šutić et al., 1996).

However, most of the viral diseases of cucumber in the former and present Yugoslavia have not been extensively investigated and the prominent symptoms displayed by infected plants are usually attributed to CMV infections. A previous investigation on cucumber crops in Macedonia had established a widespread occurrence of foliar mosaic involving 33 to 100% of the plants. Although CMV was identified as the principal causal agent of the disease, there were indications that other viruses were also present (Pejčinovski, 1996).

A major aim of our research has been identification and characterization of viral diseases affecting cucumbers in Yugoslavia. Here, we are reporting the aetiology of one of those diseases.