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CABBAGE CLUBROOT (*PLASMIDIOPHORA BRASSICAE*) IN
SEMBERIA AND POSSIBILITIES OF ITS CONTROL BY
FUNGICIDES

by

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S u m m a r y

Clubroot (*P. brassicae*) became the main limiting faktor of cabbage production in Semberia, one of the important producing region of this plant in Yugoslavia. This disease was probably introduced and spread by infected seedlings in all localities of cabbage producing area in the region. The damage increased very much in a relatively short time because of growing cabbage as a monoculture (cabbage being second crop after barley, wheat, ect), on acid soils and on irrigated plots.

Because of great losses caused by this disease and lack of effective control measures, the cabbage production was replaced from one to the other part of the region. A severe infestation by the disease has been observed after five years of cabbage growing in many fields of the new producing localities. All cabbage varieties grown in the region are susceptible to the disease.

The efficacy of some fungicides (tab. 1) has been tested against cabbage Clubroot on heavy infested fields by the parasite. Water solutions of fungicides were applied by three different methods: dipping of seedling root, drenching of transplanted plants, and, combination of two previous methods.

There was no decrease of the disease attack by dipping seedling root in water solutions of the tested fungicides (tab. 2). In the comparison with untreated plots a significant decrease of the Clubroot infestation has been found in the treatments with envoit and benlate by using two other methods of application.

**BACTERIAL PATHOGENS, THE CAUSAL AGENTS OF CAULIFLOWER
AND LETTUCE HEADS ROT IN YUGOSLAVIA**

by

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S u m m a r y

Bacterial spot and rot of cauliflower and lettuce heads become more and more a frequent and economically important phenomenon in Yugoslavia. Its increased spreading affects remarkably the duration, freshness and general outlook of the diseased cauliflower and lettuce heads.

A large number of bacterial isolates of different characteristics were isolated from the diseased tissue showing rot and spot symptoms, whose pathogenic, cultural and biochemically physiological characteristics were examined (Schaad, 1980, 1988; Fahy and Persley, 1983; Bradbury, 1986; Lelliot and Stead, 1987; Arsenijević, 1988).

On the basis of this results obtained, it can be seen that the following pathogens exist on cauliflower heads: *Pseudomonas cichorii* (Swingle) Stapp, *P. marginalis* pv. *marginalis* (Brown) Stevens and *P. viridiflava* (Bruckholder) Dowson (tab. 1). The same bacteria (*P. cichorii*, *P. m.* pv. *marginalis* and *P. viridiflava*) were isolated from the diseased lettuce, as well as *Erwinia carotovora* subsp. *carotovora* (Jones) Bergey et al., which during the present work, has not been identified among isolates originating from cauliflower heads (tab. 1 and 2).

Except of *E. c.* ssp. *carotovora* and *P. viridiflava*, other two identified (*P. cichorii* and *P. m.* pv. *marginalis*) represent the first records of pathogens in Yugoslavia.

THE REACTION OF SOYBEAN VARIETIES AND LINES TO *DIAPORTHE PHASEOLORUM* VAR. *CAULIVORA*

by

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S u m m a r y

Three application methods of inoculation used in analysis of the reaction of 63 soybean varieties and lines driving from all parts of the world, to *Diaporthe phaseolorum* var. *caulivora*. The significant differences in susceptibility were observed. An conditions of natural infection in the field, where the experiments have been conducted for three years as well as with inoculation with ascospores in vegetation house, the reaction of varieties and lines depend on length of vegetation. The earliest genotypes were less susceptible and they reacted with milder symptoms to the attack of parasite. Late varieties showed higher susceptibility, which became manifested in very severe symptoms and the high total number of infected plants. However, some late varieties had the high level of field resistance. The more resistant were Feng Show-10 (maturation group 00), SRF-100 (I), Mandarin (Ottawa) (I), Reiner (II) and Harosoy 63 (II).

The inoculation by »toothpick« method of seedlings showed that early soybean varieties do not have genetic resistance, but that they escape the attack of parasite in the field. Only he varieties Tracy and Tracy-M were resistant to such drastic way of infection.

The positive correlation ($r=0,468$) was determined among the susceptibility of analyzed soybean genotypes in conditions of natural infection in the field and inoculation with ascospores in vegetation house. No correlation among the susceptibility of genotypes in field conditions and inoculation of seedling by toothpick method was determined.

VIRULENCE SPECTRUM OF THE *ERYSIPHE GRAMINIS* DC. EX
MÉRAT F. SP. *TRITICI* EM. MARCHAL POPULATION IN
SOUTHEASTERN PART OF YUGOSLAVIA IN 1986 AND 1987

by

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S u m m a r y

Powdery mildew is frequent and economically important wheat disease in our country. Thus, our selection programs include improving of new varieties which would have good resistance beside other positive characteristics. But, the greatest difficulties in this task are made by parasite population changes. That is the reason for our studying of *Erysiphe graminis tritici* virulence spectrum in the southeastern part of Yugoslavia in 1986 and 1987. Isogenic wheat lines with genes Pm 1, Pm 2, Pm 3a, Pm 3b, Pm 3c and Pm 4a were used in this investigations.

Results showed wide virulence spectrum of this fungi in our country. Analysis of 375 isolates originating from 76 localities and different wheat varieties estimated 38 different virulence genes combinations. Beside wide variability, the population is virulent because most isolates had three or four virulence genes. But, the greatest part of population is composed from rather few genotypes with virulence formula 2, 3b, 4a/1, 3a, 3c; 1, 2, 3b, 4a/3a, 3c and 1, 3b, 4a/2, 3a, 8c. Their representance in localities and years investigated didn't change much pointing to parasite stability in time and space.

TESTING METHODS OF ARTIFICIAL INFECTION OF MAIZE EARS
WITH *FUSARIUM GRAMINEARUM* Schw.

by

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Z a g r e b

S u m m a r y

Two-year trails indicated that the method ear inoculation by placing toothpick covered with fungus *Fusarium graminearum* into the silk channel 0.5—1 cm from the ear tip, proved to be the most effective for distinguishing resistant and susceptible genotypes to ear rot. Method of inoculation ear tip between husks using the syringe and ear inoculation by placing toothpick covered with fungus into the middle portion of the ear were too drastic for distinguishing resistant and susceptible genotypes. The method of ear inoculating into the leaf whorl did not appreciably differ from check, therefore as the check itself was not acceptable in breeding maize for resistance to ear rot.

- Moseman, J. G., Beanziger, P. S. and Kilpatrick, R. A. (1980): Relationships of genes conditioning resistance to *Erysiphe graminis* f. sp. *tritici* in wheat. In Proc. of the 3rd International Wheat Conference, Madrid, 507-517.
- Moseman, J. G., Nevo, E., Morshidy, and Zohary, D. (1984): Resistance of *Triticum dicoccoides* to infection with *Erysiphe graminis tritici*. *Euphytica* 33; 41-47.
- Nover, I. and Lehmann, C. O. (1969): Resistenzigenschaften im Gersten und Weizensortiment Gatersleben. 12. Prüfung von Weizen-Neuzugängen auf ihr Verhalten gegen Mehltau (*Erysiphe graminis* Dc. f. sp. *tritici* Marchal).
- Pugsley, A. T. and Carter, M. V. (1953): The resistance of twelve varieties of *Triticum vulgare* to *Erysiphe graminis tritici*. *Aust. J. Biol. Sci.* 6: 335-246.
- Stojanović, S., Kostić, B. i Andrejić, M. (1973): Fiziološke rase *Erysiphe graminis tritici*. *Savremena poljoprivreda*, XXI, br. 7-8; 85-93.
- Stojanović, S. i Andrejić, (1975): Proučavanje otpornosti nekih sorata pšenice prema *Erysiphe graminis* f. sp. *tritici*. *Zbornik radova zavoda za strna žita*, Kragujevac, br. 5.
- Stojanović, S. (1982): Proučavanje populacije prouzrokovala pepelnice pšenice (*Erysiphe graminis* D. C. ex Mirat. f. sp. *tritici* Em. Marchal). *Zbornik radova Instituta za strna žita*, Kragujevac, br. 6.

(Primljeno 14. 11. 1989.)

THE REACTION OF SPRING WHEAT
GENOTYPES AND Pm. LINES TO *ERYSIPHE GRAMINIS TRITICI*
IN HILLY — MOUNTAIN REGIONS OF BOSNIA AND
HERCEGOVINA

by

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S u m m a r y

It was found high susceptibility to *Erysiphe graminis* of all tested wheat varieties and lines in the trials at Nevesinje, Gacko, Duvno and Kupres (Tab. 1, 2 and 3). Pm. isogenic lines were susceptible at localities Nevesinje, Gacko, Duvno and Kupres. From total thirteen Pm. lines only eight have had lower severity in 1981 (Pm.1.CI14114, Pm.1.CI14116, Pm.1.CI14117, Pm. 2.CI14118, Pm.3.CI14119, Pm.3b.CI14121, Pm.4.CI14123 i Pm.5.).

RESISTANCE OF SOME PLUM CULTIVARS TO *POLYSTIGMA RUBRUM* (PERSON) DE CANDOLE, THE CAUSAL AGENT OF RED LEAF SPOT

by

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S u m m a r y

The leaves of several plum cultivars were screened for susceptibility to the parasite *Polystigma rubrum*, which causes damage to leaves and premature defoliation.

The degree of leaf susceptibility in the plum cultivars studied is primarily conditioned by biological characteristics of a cultivar.

The relatively resistant cvs Stanley, California Blue and Rana Rodna can be grown under our conditions without taking control measures against *P. rubrum*.

Control measures against *P. rubrum* in the relatively susceptible cvs Čačanska Rodna and Ruth Gerstatter should be taken only in the years when ecological conditions favour the development of *P. rubrum*.

The susceptible cvs Čačanska Rana, Hall, Delikya, Čačanska Lepotica, Julska Rana, Čačanska Najbolja, Anna Späth, Imperial, Rana Renkloda, Dragačevka, Bühler Frühzwetsche, Velika and Crvena Ranka should be given one treatment each year to control the disease.

Požegača and Wangenheims are highly susceptible cultivars. In the conditions favouring the development of *P. rubrum* two sprays are necessary to protect leaf mass.

- Jordović, M. i Ranković, M. (1972): Promene u plodovima nekih sorata šljiva izazvane virusom šarke. Jug. voćarstvo 21—22 : 797—802.
- Josifović, M. (1952): Problem šarke šljive sa fitopatološkog stanovišta. Zaštita bilja 11 : 63—68.
- Jovićević, B. (1958): Neka zapažanja o šarki šljive u Kosovsko-metohijskoj oblasti. Zaštita bilja 46 : 17—25.
- Perišić, M. (1953): Šarka šljive. Poljoprivreda 5 : 3—8.
- Minoju, H. (1970): Redakcija sortov šljivi na šarku. Zbornik radova Akad. nauka. Tom 2 : 1—14.
- Ranković M. (1980): Proizvodnja voćnog sadnog materijala nezaraženog virusima. VII Kongres voćara SFRJ. Maribor.
- Trifunov, D. (1971): Die Anfälligkeit von Pflaumensorten gegenüber dem Sharkavirus. Tagungsberichte 15 : 51—60.
- Vaclav, V. (1966): Širenje šarke šljive u području centralne Bosne. Radovi Polj. fak. u Sarajevu. God. XV, 17 : 1—15.
- Šutić, D. i Ranković, M. (1981): Resistance of some plum cultivars and individual trees to Šarka virus. Agronomie 4.

(Primljeno 6. 02. 1990.)

EXPERIENCES ON PREVENTION PLUM POX VIRUS SPREAD IN PLUM PLANTATIONS

by

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S u m m a r y

It is done a review of the effects of some preventive measures to Sharka virus spread in new established plum plantations. It is found that the most effective measures are:

- Recognition of plum pox distribution in localities where the plantation will be built.
- Establishment of new plantations in places where plum pox is absent or very mild distributed.
- Survey of all *Prunus spp.* hosts of plum pox virus near the place for establishment new plantation on presence of Sharka virus.
- Use only plum pox virus free nursery trees for plantations.
- Control of new plantations on presence of virus in first three years after planting.
- Establishment of new plantations in affected regions can be done by tolerant cultivars to Sharka virus only.

Using cited measures the spread of Sharka virus in ten plantations in West Serbia was 0,29% only during 22 years (1963—1985). In other cases without preventive measures the virus was spread on 69—75% of trees in the same period.

MAIZE DWARF MOSAIC VIRUS EPIDEMIC IN YUGOSLAVIA

by

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Sremska Mitrovica**S u m m a r y**

Maize dwarf mosaic virus caused epidemy on corn in Yugoslavia in 1989. The virus was identified on the base of symptoms, mechanical and vectors transmission, reaction of maize and sorghum test plants, serological reactions, and electron mycrosopic investigations.

Maize dwarf mosaic virus caused decrease of yield of field corn and severe losses of seed corn crops in 1989 in Yugoslavia. The yiled of field corn crops was decreased for about 20%, but in some cases over 50% comparing to the average yield from previous years. At about 2/3 of the area with seed corn crops the yield was decreased about 70% but at some fields it was decreased over 90% comparing to the yield obtained in previous years. Because of maize dwarf mosaic severity many crops of seen corn were destroyed and plots plowed out.

Because of the possibility of epydemics like in 1989, maize dwarf mosaic, which is present in Yugoslavia as well as in other countries, is a great danger to corn production. Therefore it is necessary to study continuously this disease from different points, especially the possibility of breeding corn for resistance.

trebnih za formiranje viriona. U plazmi inficiranih ćelija a naročito u blizini jedrove membrane sakupljaju se brojne mitohondrije u tom periodu. U jedru se stvara sve više viriona koji se grupišu u snopiće a oko njih se nakuplja proteinska masa u vidu poliedarne inkluzije. Broj poliedarnih inkluzija uvećava se tako da iste potpuno ispunjavaju jedro čija se opna širi, približava se ćelijskoj membrani. Na kraju, jedarna i ćelijska membrana pucaju kada se poliedri oslobađaju i mešaju sa ostacima tkiva. Pucanjem, bolešću izmenjene kože gusenica oslobađaju se poliedri koji kontaminiraju lišće kojim se hrane još zdrave gusenice što dovodi do daljih infekcija i širenja bolesti.

LITERATURA

- Harrap, A. K. (1972): The structure of nuclear polyhedrosis viruses, I, II. *Virology*, V. 50, No. 1.
- Houston, R. D. (1979): Classifying forest susceptibility to gypsy moth defoliation. USDA. Agr. Handbook No. 542.
- Kovačević, Z. (1954): Značaj poliedrije za masovnu pojavu nekih insekata. *Zaštita bilja* 23, 3—20.
- Schmidt, L. (1959): Istraživanja patogenih mikroorganizama na gubaru u 1959. godini. *Zaštita bilja* 56, 45—51.
- Sidor, C. Jodal, I. (1983): Rezultati ispitivanja zdravstvenog stanja gubara (*Porthetria dispar* L.) u bagremovoj šumi »Bagremara« kod Bačke Palanke. *Zaštita bilja* 34, 445—455.
- Vasiljević, Lj. (1958): Udeo poliedrije i ostalih oboljenja kod nastale gradacije gubara 1957. god. u NR Srbiji. *Zaštita bilja* 41—42, 123—137.
- Kostić, Đ. A. (1968): Osnovi normalne histologije. Med. knjiga, Beograd —Zagreb.

(Primljeno 10. 01. 1990.)

THE POLYHEDRAL VIRUS DISEASE OF GYPSY MOTH (*PORTHETRIA DISPAR*) IN ACACIA FOREST „BAGREMARA” (Intensity of the disease and histopathological investigations)

by

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S u m m a r y

The data in this article represent the investigations of the nuclear polyhedral virus disease (NPV) of gypsy moth (*Porthetria dispar* L.) from acacia forest in which the larvae are feeding with acacia leaves which is classified as less suitable food for this insect.

The nuclear polyhedral virus disease (NPV) of the gypsy moth had been found every year during ten years of the investigations. The

first pathological changes were observed in the cells nuclei of the infected tissues. Agglomeration of the chromatin and formation of the dark stained virogenic stroma from which the rod shaped virions are derived. In the cytoplasm near nuclear membrana of the infected cells numerous mitochondria were collected which suggest at greater activity of the cells for producing the elements necessary for composition of the virus. In the nuclear numbers virions appeared which are grouped in the bundles and rounded by a common membrana. Round the virus bundles the protein material is accumulated making the inclusions in the polyhedral shape. The polyhedra are growing in size and numbers and completely fill the nucleus which membrane under pressure become close to the cell membrana. The both membranes undergone pathological changes are breaking and the polyhedra are liberated and mixed with remnants of the tissue. Breaking of the very fragile skin of the diseased caterpillars the polyhedral bodies are flowing out and contaminated leaves on which still the healthy caterpillars are feeding and become infected.

Za uspešno hemijsko suzbijanje potrebno je utvrditi vreme eklozije imaga i njegovu aktivnost, te u periodu dopunske ishrane upotrebiti odgovarajuće hemijsko sredstvo. S obzirom na produženi period eklozije imaga, potrebno je izvršiti dva tretiranja u razmaku 10 dana.

Proizvođačima iz okoline Beograda, predložili smo pre svega mehaničke mere borbe, a zatim i hemijske u vreme aktivnosti imaga (kraj aprila), i nakon 10 dana. Od hemijskih sredstava korišćen je Parathion i dobijeni su zadovoljavajući rezultati.

Zaključak

U 1989. godini, na lokalitetu Mala Ivanča, zabeležene su velike štete na jagodama od jagodinog korebusa, *Coroebus elatus* F.

Jagodin korebus ima jednu generaciju godišnje i prezimljava u stadijumu larve u korenu biljaka.

U proleće, larve prelaze u lutke u lutkinjoj kolevci koja se obično nalazi u nivou ulaznog otvora. Eklozija imaga je veoma razvučena.

U periodu dopunske ishrane, imago nagriza lišće ne nanoseći značajne štete. Štete prouzrokuju larve, koje u stablu i korenu prave spiralne hodnike ispunjene crvotočinom i nekrotičnim tkivom.

Napad se manifestuje pojavom žutog i uvelog lišća, kao i sušenjem celih biljaka.

Uništavanje napadnutih biljaka i hemijsko suzbijanje imaga u vreme njegove aktivnosti, doprinose značajnom smanjenju populacija ove štetočine.

LITERATURA

- Bovey, R. (1967): La défense des plantes cultivées, Paris.
- Lekić, M. (1967): Štetna entomofauna zasada jagode i maline na području Srbije. Savremena Poljoprivreda, II : 881—892, Novi Sad.
- Lekić, M., Mihajlović, Lj. (1969): *Coroebus elatus* F. (Buprestidae, Coleoptera), A Strawberry Pest in Serbia. Arhiv za poljoprivredne nauke, vol. 22, № 78, pp 89—96, Beograd.
- Théry, A. (1942): Faune de France (Coléoptères, Buprestides), Paris.

COROEBUS ELATUS F. (COLEOPTERA : BUPRESTIDAE) THE CAUSER OF DECAYING STRAWBERRY PLANTS

by

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S u m m a r y

The strawberry plants damage, caused by *Coroebus elatus* F., is established in 1989, in some localities of Serbia. This species has one generation in the year, and overwintering as a larvae in the lowest

part of the strawberry root. In the spring, the larvae change into pupae in their pupal cradle which is at the level of the initial opening, where larvae bore from the eggs which are laid usually in the axil of older leaves. The emergence period of imagos is very prolonged. In the spring adults are feeding on the strawberry leaves, but such damage is not serious. The larvae, however, are very harmful, attacked plants making spiral galleries through the root. Only one larva of *C. elatus* lives in each root. Such plants have yellow and wither leaves, and later the whole plants died. The control of *C. elatus* is possible by mechanical measure, which consist in removing and destroying infested strawberry plants. Chemical control is also suggested during the period of imagos activity.

ISPRAVKA:

Na str. 439 u 8. redu odozgo u prošlom broju vol. 40 (4), br. 190 u radu Petanović i sar. »Životni ciklus i rezultati suzbijanja leskine grinje *Phytoptus avellanae* (Nal.) (Acarida: Eriophyoidea)«, ispravni tekst treba da glasi:

»Ipak, treba napomenuti da su između dva tretiranja 25. 04. 1988. uočene uginule individue *Ph. avellanae* na površini starih velikih pupoljaka, dok je u unutrašnjosti bilo živih, a da su ženke predatorske grinje *Phytoseius macropilis* bile brojne (2—3 po listu) i polagale jaja u pupoljcima i na lišću što indicira selektivnost ovog pesticida za ovu vrstu predatora«.

THE ROLE OF NATURAL ENEMIES IN REDUCTION OF THE MAMESTRA BRASSICAE L. POPULATION DENSITY IN THE REGION OF BELGRADE*)

Introduction

Mamestra brassicae L., *Lepidoptera: Noctuidae*, is one of the most important pests registered on cabbage, cauliflower and kale plants. It occurs in an increased density every year, specially on irrigated fields. The younger caterpillars L₁₋₃ feed on foliage, while the older ones L₄₋₆ penetrate into the heads of cabbage or cauliflower plants. For these reasons, the thresholds of spraying are low, amounting as many as 2 egg mass on 100 plants. The protection of cabbage involves 2—3 treatments against the spring or summer generation. The chemical insecticides have been applied, but due to the residues and fresh vegetable nutrition, the alternative modes are to be found. In this case, a biocontrol seems to be the most perspective, since it is specific and endangers for people. The results on the practical application of egg parasite *Trichogramma evanescens* Westwood (Krnjajić, et al., 1989); or the application of Baculoviruses (Burgerjon, et al, 1979, Burgerjon, 1980, Bues, et al., 1983) have shown that successful control depends on the relations between cabbage plants, *M. brassicae* and a number of related biotic and abiotic factors. The relation between cabbage, *M. brassicae* and some abiotic factors have been already studied (Injac, Krnjajić, 1989). The goal of this paper has been to investigate the role of parasites, predators and the occurrence of disease in decreasing population density of *M. brassicae*; i. e. to investigate the relations between the cabbage, *M. brassicae* and biotic factors.

*) The contribution has been financed under the project YU—U. S. A. „Epizootiological studies on the virus *Mamestra brassicae* L.”