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Original scientific papers

Preliminary communication

Gibbins, R.N. (1978): *Erwinia herbicola*: a review and perspective. Proc. IVth Inter. Conf. Pl. Path. Bacteria: 403-431, Angers, France (INRA).

Goodman, R.N. (1965): In vitro and in vivo interactions between of mixed bacterial cultures isolated from apple buds. Phytopath. Vol. 55: 217-221.

Goodman, R.N. (1967): Protection of apple stem tissue against *Erwinia amylovora* infection by avirulent strains and three others bacterial species. Phytopath., Vol. 57, No 1.

Goodman, R.N. (1975): Phytobacteriology. Proceedings of the First Workshop on Phytobacteriology (Third Edition). University of Missouri, Columbia, Mo.: 1-73.

Klement, Z., Rudolph, K., Sands, D.C. (1990): Methods in Phytobacteriology. Academiai Kiádo, Budapest, Hungary.

Lelliott, R.A., Stead, D.E. (1987): Methods for the Diagnosis of Bacterial Diseases of Plants. Blackwell Scientific Publications. Oxford London Edinburg.

Mitrev, S. (1993): Proučavanje bakterije *Erwinia amylovora* (Burrill 1882) Winslow et al. 1920 kao parazita voćaka u Makedoniji. Magistarska teza. Poljoprivredni fakultet, Institut za zaštitu bilja, Novi Sad.

Schaad, N.W. (1988): Laboratory Guide for Identification of Plant Pathogenic Bacteria. American Phytopath. Society, St. Paul, Minnesota.

Šutić, D., Panić, M. (1969): Metode proučavanja fitopatogenih bakterija. Zavod za zaštitu bilja Poljoprivrednog fakulteta i Sekretarijat za poljoprivredu, šumarstvo i vodoprivredu SR Srbije, Beograd.

Van der Zwet, T., Keil, H.L. (1979): Fire Blight. A Bacterial Disease of Rosaceous Plants. U.S. Government Printing Office, Washington, D.C. 1-200.

(Primljeno 20.10.1994.)

CHARACTERISTICS OF SOME ATYPICAL STRAINS OF THE BACTERIA OBTAINED IN THE COURCE OF *ERWINIA AMYLOVORA* ISOLATIONS

by

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Summary

In this paper the strains as representative separate groups of bacterial colonies, which follow isolations of bacterium *Erwinia amylovora* (Burrill) Winslow et al, were investigated. The purpose of the present study was to test the atypical strains pathogenicity and to verify properties by morphological, biochemical and physiological tests (tables 1-4).

Our investigation showed that atypical strains differed among themselves and in relation to *E. amylovora*, the causal agent of fire blight disease.

From five isolates examined, two strains (Kš-514 and Du-573) showed properties of *Pseudomonas syringae* pv. *syringae* Van Hall bacterium and one isolate (Kš-513) had the same characteristics as *Erwinia herbicola* (Lähnis) Dye (table 4).

The other two strains (Du-501 and Kš-523) probably belong to the population of saprophytic bacteria which exist in fruit tree orchards.

INTRASPECIFIC VARIABILITY OF VASATES EUPHORBIAE PET. (ACARI: ERIOPHYOIDEA) ON DIFFERENT SUBSPECIES OF THE HOST PLANT

by

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Summary

In the paper around 40 meristic and morphometric characters of individuals, phaenatically uniform samples of 2 populations of the species *Vasates euphorbiae* Pet., which live and feed on subspecies Euphorbia seguierana seguierana Necker (Novi Beograd, Deliblatska peščara) and another 2 populations from *Euphorbia seguierana niciciana* Borbax ex Novak (Jelašnička klisura, Goč) were analysed.

For obtaing the data on interpopulation variability of the species, all measuring characters were given by extreem values, mean, standard eror of mean, coefficient of variability and standard error of coefficient of variability. Analysis of variance was used in order to prove eventual significant differences between the characters which varied the least among 4 investigated populations.

The analysed characters manifest different variability inside the population and in all 4 populations 12 to 15 characters express high coefficient of variability. Analysing the variance for 10 chosen characters of "*low*" coefficient of variability, it was proved that there were considerable differences between the populations only in one character, the width of dorsal shield.

Stojanović, D. i Kostić, B. (1956): Prilog poznavanju parazitne flore na jednom delu teritorije uže Srbije. Zaštita bilja, No 35: 87-103.

Stojanović, S., Gavran, Mira i Kuzmanović, S. (1992): Mikopopulacija na korovima i mogućnost njene primene u biološkoj borbi. Zbornik rezimea sa IX jugoslovenskog simpozijuma o zaštiti bilja, (30), str. 37.

Stojanović, S., Stojanović, D., Manojlović, B. i Gavran Mira (1993): Gljive iz roda *Puccinia* na korovima u Srbiji. Zaštita bilja, vol. 44 (2) No 204: 103-111.

Šutić, M. i Kljajić, R. (1954): Prilog poznavanju parazitne flore Deliblatske peščare. Zaštita bilja, No 24: 104-108.

Templeton, G.E. (1982): Status of weed control with plant pathogens, Pp 29-44 in: Chardattan, R. and Walker, H.L., eds., Biological control of Weeds with Plant Pathogens. John Wiley and Sons. New York, Chichester, Brisbane, Toronto, Singapore, 293 pp.

Templeton, G.E. (1985): Specific weed control with mycocherbicides. British Crop Protection Conference-Weedds. 601-608.

Templeton, G.E. and Smith, R. Jr. (1977): Managing weeds with pathogens. Pp. 167-175. in Horsfall, J.G. and Cowling, E.B., (eds.) Plant Disease: An Advanced Treatise. Vol. 1, Academic Press, INC, New York, San Francisco, London.

(Primljeno 4.04.1994.)

FUNGI FROM THE GENUS *UROMYCES* ON WEED PLANTS IN SERBIA

by

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Summary

On 10 weed species 6 pathogens from the genus *Uromyces* were registered: *U. heimerliamis* on *Vicia cracca*, *Euphorbia cyparissias* and *E. virigata*, *U. lathyri-latifolii* on *Lathyrus latifolius*, *U. pisi-sativi* on *Lathyrus tuberosus*, *Uromyces polygoni* on *Polygonum aviculare*, *U. rumicis* on *Rumex obtusifolius* and *Uromyces scutellatus* on *E. seguieriana*, *E. salicifolia*, *E. amigdaloides*, *E. cyparissias* and *E. virgata*. High pathogenicity to host plants was manifested by *Uromyces scutellatus*, *U. pisi-sativi* and *U. lathyr-latifolii*. They cause withering and drying of leaves, reduce vitality of diseased plants and prevent their spreading. This time the species *U. heimeriamis* and *Uromyces lathyri-latifolii* have been described for the first time in our country.

Among all described pathogens from the genus *Uromyces*, the highest destructivity was manifested by *U. scutelatus* and only on the species of *Euphorbia*.

Gibbs, J.N. (1974): Biology of Dutch Elm Disease *Ceratocystis ulmi*. - Forest Record, 94: 9 pp.

Hayes, A.J., Parinar, D.R. (1987): Some observations on the breeding and biology of *Scolytus scolytus (Coleoptera: Scolytidae)*, a vector of Dutch elm disease in Scotland. - Agroboricultural Journal, 11 (4): 333-344.

Karaman, Z. (1971): Fauna na Makedonija, I. Podkornici - *Scolytoidea (Coleoptera)*. - Prirod. muzej, Skopje: 68.

Kennedy, H.B. (1970): *Dendrosoter protuberans (Hymenoptera: Braconidae)* on introduced larval parasite of *Scolytus multistriatus*. - Ann. Entom. Soc. Am. 63 (2): 351-357.

Maksimović, M. (1979): Influence of the density of bark beetles and their parasites on diebeck of elm in some woods of Yugoslavia. - Zeit. f. ang. Entom., 88 (3): 283-295.

Maksimović, M. and Motal, Z. (1981): Investigation of the numbers of maternal and larval galleries made by elm bark beetles (*Col., Scolytidae*) in trap logs. - Z. ang. Ent. 91: 262 - 272.

Manojlović, B. (1986a): Prilog proučavanja razvića malog brestovog potkornjaka *Scolytus multistriatus* Marsh. (*Coleoptera: Scolytidae*). - Zaštita bilja, 37 (3): 251-270.

Manojlović, B. (1986b): Prilog proučavanju napada potkornjaka bresta sa posebnim osvrtom na značaj malog brestovog potkornjaka *Scolytus multistriatus* Marsh. (*Coleoptera: Scolytidae*). - Zaštita bilja, 37 (4): 297-310.

Maslov, A.D. (1970): Vrediteli ilmovih porod i meri borbi s nimi. - Izd. Lesnaja promišlenost, Moskva: 1-76.

Merlin, J. (1984): Elm bark beetles and their main parasitoides in Belgium: Emergence and some aspects it their ecological relations. - Medelingen van de Faculteit Landbauwwetenschappen, Rijksuninversitet Gent, 49 (3a): 857-865.

Neumann, F.G., Minko, G. (1985): Studies on the intraduces smaller European bark beetle, *Scolytus multistriatus*, a potential vector of Dutch elm Disease in Victoria. - Australian Forestri, 48 (2): 116-126.

Readio, A.Ph. (1935): The Entomological Phases of the Dutch Elm Disease. - J. Econ. Entomol., 28 (2): 341-343.

Rudinsky, A.J. (1962): Ecology of Scolytidae. - Rev. of Entomol. 7: 327-344.

Sengouca, C., Leisse, N. (1984): Bedeutung der Borkenkafer (*Col.: Scolytidae*) bei der verbreitung des erregers der Holandischen ulmerkranteit im Raum Euskirchen. - Zeit. fur Angew. Entomologie, 98 94): 413-423.

Živojinović, S. (1948): Šumarska entomologija. - Beograd: 195-226.

(Primljeno 12.02.1995.)

THE EFFECT OF ELM BARK THICKNESS ON *SCOLYTUS SCOLYTUS* (F.) *(COLEOPTERA: SCOLYTIDAE)* GROWTH IN LABORATORY CONDITIONS

by

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Summary

Growth conditions of *Scolytus scolytus* (F.) were the most favorable on elm tree, where the bark was 5-8 mm thick, and this was in lower part of middle aged tree. The lenght values of maternal halls and the number of larvae in every maternal gallery of *S. scolytus* at all three levels of bark thickness, were higher in the first than in the second generation. In the first generation, the shortest lenght of maternal halls (23,8+ 11,1 mm on the average) with the lowest number of larval halls per

maternal gallery (23,0+4,7 on the average) were in elm trunks and branches, where bark thickness was less than 4 mm. In the second generation these values were 20,7+9,7 mm and 18,7+3,8.

The longest maternal halls (53,4+13,1 on the average) and the greatest number of larval halls per maternal gallery (39,6+8,9 on the average) were registered in the small trunks of elm under the bark 5-8 mm thick in the first, and considerably lesser in the second generation (43,6+8,8 mm and 33,4+8,5 on the average).

In both generations, the lowest number of maternal galleries was in trunks under the thinest bark (up to 4 mm) (33 or 82,5% in the first and 31 or 77,5% in the second generation, respectively). In trunks with a bark 5-8 mm thick, 39 maternal galleries (or 97,5%) were in each generation.

The growth of *S. scolytus* at a constante temperature of 27-29°C lasted shorter in the first in relation to the second generation and it increased with bark thickness. In the first generation, *S. scolytus* finished its growth for about 31,3 days (under 4 mm); 34,9 days (5-8 mm) and 36,7 days (over 9 mm).

In the second generation, *S. scolytus* grew for about 3 days longer in relation to the first generation (34,9 on the average, where the bark was the thinest; 38,5 days under the bark od 5-8 mm and the longest, 39,1 days on the average, in the trunks with the bark over 9 mm).

One of the characteristics of S. scolitus was obligatory diapause for one part of the population from the first and even more from the second generation by spring the following year and it increased with bark thickness. In the first generation, under the bark thicker than 9 mm, on the average 4,5% of *S. scolytus* population remained in diapause, and in the second generation 13,2%, in the bark 5-8 mm thick and on the average 13,0% in the bark over 9 mm thick.

A greater number of *S. scolytus* imagos per maternal gallery flow out in the first, in relation to the second generation and it decreased with the bark thickness (at the most where the bark was 5-8 mm thick, on the average 38,3 and 37,3 imagos in the part with the thickest bark. In the second generation these values were considerably lower (30,2 imagos in the bark of 5-8 mm and 29,6 imagos in trunks with the bark over 9 mm thick.

THE EFFECT OF SOWING DATE ON APPEARANCE OF SOYBEAN PLANTS SISTEMICALLY INFECTED BY *PERENOSPORA MANSHURICA*

by

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Summary

In two years of field experiments the effect of sowing date on intensity of *Perenospora manshurica* sistemically infected soybean plants was investigated. Three soybean lines were tested.

The infection of soybean seeds could reduce the number of emerged plants especially in the years with unfavourable conditions for soybean emergence. The significant differences in number of sistemically infected plants dependent on the sowing date and year were found.

In both experimental years the maximal percentage of diseased plants was in the first sowing period and strongly decreased in the later sowing period. It was provoked by convenient soil temperature, which was nearly optimal for soybean infection, during seedlings emergence in first sowing period.

Symptomps of downy mildew on soybean seeds in high percentage appeared only in the first experimental year.

The intensity of seed infection was dependent on sowing date and decreased from early to late sowing periods. In our opinion, higher intensity of soybean seed infection was caused by weather conditions, especially by quantity and distribution of precipitations, during the vegetation period.

Wilding, N. (1973): The survival of *Entomophthora* spp. in mumified aphids at different temperatures and humidities. Journ. Inv. Path., 21(3): 309-311.

Yendol, W.G. (1968): Factors affecting germination of *Entomophthora* conidia. Journ. Invert. Parhol. 10: 116-121.

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EFFECTS OF TEMPERATURE AND RELATIVE HUMIDITY ON THE GERMINATION OF APHIDOPATHOGENOUS FUNGUS *PANDORA NEOAPHIDIS* CONIDIA

by

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Summary

The Aphidopathogenous fungus *Pandora neoaphidis* (Remaudiere et Hennebert) Humber, is a species with the most important role in the regulation of leaf aphid population (Sivčev 1992). The infections are realized by conidia strongly released from conidiophores, which hit host aphid. The Velocity of *P. neoaphidis* conidia germination is important for maintainance and mass spreading of the fungus, due to the fast lost on humidity.

The conidia used in the experiments were obtained from the cultures of *P. neoaphidis* on the medium of egg yolk and Sabouraud maltose agar, with the addition of yeast extract. After seven days of incubation at 20°C in dark, petri dishes were opened and left for 12 hours in moist chamber at light. After this time abundant sporulation started. The released conidia were collected onto cover glass and immediately transferred into exicators with appropriate relative humidity and termostates with appropriate temperature. Germination of conidia was investigated at 93%, 97% and 100% of relative humidity. Every four hours three cover glass with conidia were taken (repetitions) and at least 250 conidia per repetiton were counted.

On the basis of the obtained results of the experiment it was proved that *P. neoaphidis* conidia germination was conditioned by relative humidity and temperature.

The conidia could germinate only at high relative humidites. At 93% of relative humidity there was no germination. The conidia germinated faster at 100% than at 97% of relative humidity.

The conidia germinated at the temperatures from 4°C to 25°C. The temperature determined the time needed for germination. At 30°C there was no germination.

The results also showed that germination processes were faster at light than in dark, and in dark conditions the germination was the most rapid at 25°C.

Considering that the temperature range was considerably larger in relation to the range of relative humidity at which the germinatin was possible, it can be considered that relative humidity is most often a limiting factor of conidia germination in nature in relation to temperature conditions.

Suslow, T.V, Schroth, M.N, Isaka, M. (1982): Application of a Rapid method for Gram Differentiation of Plant Pathogenic and Saprophytic Bacteria Without Staining. Phytopathology 72: 917-918.

Šutić, D, Panić, M. (1969): Metode proučavanja fitopatogenih bakterija. Zavod za zaštitu bilja. Poljoprivredni fakultet i sekretarijat za poljoprivredu, šumarstvo i vodoprivredu SR Srbije. Beograd.

Tominaga, T, Achmad, N.H, Nishiyama, K, Ezuka, A. (1978): *Xanthomonas manihotis* (Arthaud-Berthet and Bondar) Starr, the cause of cassava bacterial blight in Indonesia. Published by Central Research Institute for Agriculture, Bogor (Indonesia), No 38, 5.

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A NEW METHOD FOR GRAM DIFFERENTIATION OF BACTERIA

by

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Summary

All bacterial strains used, members of the genus *Agrobacterium, Erwinia, Pseudomonas* and *Xanthomonas*, had gramnegative characteristics (Tables 1 and 2).

Their gramnegative nature was proved by means of one new, very simple and useful method (Suslow et al, 1982).

It was also shown that bacteria which belonged to the genera *Bacillus* and *Clavibacter* were grampositive (Table 2).

LITERATURA

Boldt, P.E. (1978): Habitat of *Carduus nutans* L. in Italy and two Phtyphagous Insects. - Biological Control of Weeds Laboratory, ARS, USDA. Report, 98-100.

Boldt, P.E., Compobasso, G. (1978): Phytophagous Insects on *Carduus macrocephalus* in Italy. - Environmental Entom. 7 (6): 904-909.

Campobasso, G. (1990): Biological Control of Weeds, Musk Thistle (*Carduus macrocephalus*) Project. - Lab. - Europe, 1978. Annual Report, USDA, Rome, Europe: 26-37.

Glumac, S. (1958): *Syrphidae (Diptera)* Fruške Gore. - Matica Srpska, 17: 36-78. Novi Sad.

Goeden, R.D. (1974): Comparative Survey of the Phytophagous Insect Faunas of Italian Thistle, *Carduus pycnocephalus*, in Southern California and Southern Europe relative to Biological Weed Control. - Environmental Ent. 3 (3) 464-474.

Manojlović, B. (1990): Prilog poznavanju *Cheilosia corydon* (Harris) (*Diptera: Syrphidae*) na korovskoj biljci *Carduus acanthoides* L. (*Asteraceae* Dum.). - Zaštita bilja, 41 (4) 194: 349-357.

Mellini, E. (1951): Insetti del *Carduus nutans* L. - Bologna Entomol. Bol. 187: 272-292.

Rizza, A., Campobasso, G., Dunn, P., Stazi, M. (1988): *Cheilosia corydon (Diptera: Syrphidae)*, a Candidate for the Biological Control of Musk Thistle in North America. - Annales of the Entomologica Society of America, 81 (2): 225-232.

Taloši, B., Sekulić, R., Kereši, T., Manojlović, B., Igrc, J., Maceljski, M., Žtof, V. (1989): Investigations of entomofauna on *Carduus* genus (*Asteraceae*) plants in Yugoslavia. - Plant protection 40 (4) 190: 393-408.

(Primljeno 9.11.1994.)

DURATION OF *CHEILOSIA CORYDON (HARRIS) (DIPTERA: SYRPHIDAE)* EMBRIONAL DEVELOPMENT IN LABORATORY CONDITIONS

by

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Summary

Cheilosia corydon (*Harris*) is a useful phytophagous insect which grows on the plants of the genus *Carduus*. In climate conditions in the course of *C. corydon* egg growth (23-27°C, 60-75% of relative air humidity and light of 12 hours a day), the embrional growth lasted about 7 days. In the first year of investigation (1988) the larvae hatched after 7,3 days on the average and in 1989 after 6,9 days.

The first larvae hatched on the 6th day and the hatching was prolonged up to the 10th day. The greatest number of hatched larvae was registered on the 7th day (in 1988, 46,7% on the average and in 1989 55,5% in relation to the total number of hatched larvae). After that the intensity of the hatching decreased (on the 8th day on the average 31,4% and 15,3% per year):

C. corydon larvae hatched on the average from 73,9% in 1988, and in 1989 from 75,7% of eggs. The lowest number of hatched larvae was from the first deposited and collected eggs on March 29, 1989 only 63,1% and on March 31, 1989, 65,1%, respectively. In 1988, embrional growth (but not hatched larvae) was registered at 83,2% of the eggs (the highest percent 91,0%, in the beginning of imago flight i.e. at the end of March, and approaching the middle and the end of the eclosion cicle, the number of eggs with proved embrional growth slightly decreased (84,0% and 76,7% respectively). However, the larvae did not hatch from 11,2% eggs on the average where the process of embrional growth started (the highest percent 30,6% in the beginning of imago flight and egg depositing, i.e. on March 29). Considerably lower number of died fertilized eggs of *C. corydon* was in the middle and at the end of imago flight and egg depositing (on April 4, 7,1% and April 10 3,4%).

In the following year, 1989, we registered almost the same number of eggs with the present proces of embrional growth, as well as in 1988 (84,0% on the average) (the highest percent in the course of eclosion, at the end of March, 93,4%, and the lowest at the end of imago flight and egg depositing, 74,5%). However, that year less fertilized eggs died, 9,9% on the average. A considerable number of unhatched larvae form the fertilized eggs was present at those deposited at the end of March i.e. in the beginning of imago flight (30,3%). Approaching the middle and the end of imago flight, the number of died fertilized eggs of this useful phytophagous insect decreased (on April 16, only 0,7%).

- Najviši stepen osetljivosti ispoljili su: sorta Delikates i linija J-35 od salatnih krastavaca i hibridi: Orpheus F_1 i Miror F_1 od krastavaca kornišona.
- Ustanovljene su statistički značajne razlike između intenziteta zaraze u delu ogleda tretiranog fungicidima i netretiranog dela ogleda.
- Fungicidi: metalaksil+mankozeb i bakarni oksihlorid ispoljili su određenu efikasnost u suzbijanju plamenjače.
- Utvrđeno je da prinos ne zavisi od intenziteta zaraze u tretiranom, kao i u netretiranom delu ogleda, što znači da bi ubuduće veću pažnju trebalo posvetiti proučavanju anatomskih i fizioloških odlika same biljke, kao i uticaju abiotskih faktora.
- Genotipovi sa određenim stepenom otpornosti mogu se iskoristiti u daljem procesu selekcije sorata i hibrida krastavaca otpornih prema prouzrokovaču plamenjače - *Pseudoperonospora cubensis*

LITERATURA

Aleksić, Ž, Aleksić, D, Šutić, D. (1989): Bolesti povrća i njihovo suzbijanje, Nolit-Beograd.

Celar, F. (1989): Pojam kumarne plesni (povzročitelj *Pseudoperonospora cubensis* Rostow.) v Sloveniji, Zaštita bilja, Vol. 40 (2), br. 188: 227-231, Beograd

Marinković, N, Obradović, A, Mijatović, M, Stanković, Lj, Milić, B. (1991): Reakcija nekih genotipova krastavaca na infekciju gljivom *Pseudoperonospora cubensis* Rostow. Centar za povrtarstvo, Smederevska Palanka, 1-7

Narendra, D.V, Nezzal, T, Santiago, J.C. (1978): Attaques et nouveaux ennemies signales. Bulletin Phytosanitaire de la FAO 26, 172 Rome

Pivovarov, V.F. (1984): Selekcija ogurca na ustijčivost k boleznjam s ispoljzovaniem raznih ekologičeskih uslovij. Selektsiya i Semenovodstvo, 10, 20-22

Plužnikova, L.E. (1988): Sposob uskorenoi ocenki ustoičivosti ogurca k perenosporozu. Selektsiya i Semenovodstvo 4, 27-28

Pljusnjina, R.A. (1975): Ustoičivie k ložnoj mučnistoj rose sortoobrazci ogurcov. Zaštita rastenii 11, 54-55

Van Vliet, G.J.A, Meysing, W.D. (1973): Inheritance of resistance to *Pseudoperonospora cubensis* Rost. in cucumber (*Cucumis sativus* L.) Euphytica 23 (1974) 251-255, the Netherlands

(Primljeno 10.08.1994.)

RESISTANCE OF DIFFERENT CUCUMBER GENOTYPES TO *PSEUDOPERONOSPORA CUBENSIS*, CAUSER OF DOWNY MILDEW

by

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Summary

In the course of 1992 the reaction of 21 genotypes of cornishons and cucumber (varieties, lines, hybrids) to the infection by the fungus *Pseudoperonospora cubensis* Rostow were investigated. The material from the collection of the Center for Vegetables in Smederevska Palanka was

used for sowing as well as the cucumber hybrids obtained from the holland firms Royal Sluis and Sluis Groot.

The experiments were set on the plots of the Center for Vegetables in Smederevska Palanka. A part of the experiment was treated by fungicides metalaxil+mancozeb + copper oxichloride. Three evaluations of the reaction of the investigated material were carried out, and the yield was estimated five times.

It was proved that there were differences in susceptibility of the investigated genotypes to downy mildew. The most resistant to this disease proved to be: line S44OS and hybride Slicer Astrea F among cucumbers and hybrides Nastasja F and Regal F among cornishones.

Statistically important differences in the disease intensity between the part of the experiment treated by fungicides and untreated part of the experiment were registered, which proved that the fungicides metalaxil+mancozeb and copper oxichlorid manifested certain efficiency in downy mildew control. It was proved that the yield did not depend on the disease intensity in the treated, as well as in the untreated part of the experiment, so that in the future bigger attention should be paid to the effect of abiotic factors, as well as to the investigations on anatomical and physiological characteristics of the plant.

On the basis of these results a conclusion can be made that the genotypes which manifested high degree of resistance to downy mildew, as well as the genotypes of high genetic potential of fertility should be used in further process of selection in order to obtain high yielding genotypes resistant to downy mildew.