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INVESTIGATION OF RESISTANCE OF SOME VARIETIES
AND LINES OF PEA TO ASCOCHYTA PISI Lib.

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S u m m a r y

Resistance of 25 pea varieties and lines to *Ascochyta pisi* has been studied.

From the obtained results can be concluded as follows:

Under conditions of artificial inoculation five varieties showed a resistance — one dutch variety (Frimas, index 21,15) and four domestic selections: Kosmaj (10,77), Palanački D-67 (17,78), L-18 (24,54), Palanački G-65 (32,41). Four varieties were highly susceptible — index more than 66 (Mali provansalac, Kelvedon, Action and Katinka. The most number (16) were susceptible.

Results obtained under conditions of artificial inoculation were confirmed in the practice 1978, when the conditions for appearance and spreading of *A. pisi* were very convenient.

THE EFFECTIVENESS OF SOME Sr GENES TO SOME PHYSIOLOGICAL
RACES AND BIOTYPES OF PUCCINIA GRAMINIS PERS. F. SP.
TRITICI ERIKSS. ET HENN.

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Summary

In this paper a study was made on the effectiveness eighteen Sr genes (Sr 5, Sr 9d, Sr 9b, Sr 9e, Sr 9a, Sr 7b, Sr 6, Sr 8, Sr 11, Sr Tt, Sr 10, Sr 13, Sr 1, Sr 14, Sr 16, Tha 3B, Hope 1D i Hope 2B), to races 1, 11 and 34 of *Puccinia graminis tritici* and to their biotypes (1-CKK, 1-CF, 1-RKR, 1-MKF, 1-CKC, 1-RKF, 11-RKT, 11-RRT, 11-RHT, 11-RKS, 11-RTT, 34-RKT, 34-RHT, 34-RRT, 34-RTT, 34-RKF and 34-RKR).

The effectiveness of Sr genes to isolated races and biotypes of *Puccinia graminis tritici* was variable. The most genes (nine) were effective to race 1, while only four to race 11. Eight genes (Sr 5, Sr 9b, Sr 9d, Sr 9e, Sr 11, Sr Tt, Sr 1 and Hope 2B) are found to be effective against biotypes of race 1 (CKF, MKF, CKC and RKF). To biotype RTT of races 11 and 34 only one gene (Sr 9e) was effective. To biotypes of races 11 and 34 only a few genes were effective.

The study showed that the most effective genes being Sr 9e and Sr 11.

Investigations have been done in the greenhouse in optimal conditions.

INFLUENCE OF SOME AGROTECHNICAL MEASURES ON THE INTENSITY OF THE LEAF SPOT OF BEET (*C. BETICOLA*)

by

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S u m m a r y

In the course of several years' investigations of productivity of the sugar beet in dependence on a greater number of agrotechnical factors, the degree of the attack of the leaf spot was regularly recorded. There was analyzed the influence of individual investigated agrotechnical factors and their mutual effect on the degree of the attack of the disease. This analysis allows to draw following conclusions.

In the system of the soil utilization the intensity of leaf spot of sugar beet is proportionate to the frequency of the sowing in the rotation of crops. It is the greatest in monoculture and the least in five-course rotation.

The previous crop in two-course rotations exert an influence on the degree of the disease in proportion to the utilization of nutrients from the soil.

Fertilization of the sugar beet, even under the conditions of a very intensive infection (monoculture) reduced the degree of leaf spot in proportion to the intensity of mineral nutrition.

The amount of nitrogen, used for fertilizing purposes, is of a great consequence for fertilizing. A positive correlation between the intensity of nitrogen fertilizing and the resistance to the parasite has been established. Such a correlation is manifested with most of the investigated sorts.

In a larger vegetation area the sugar beet was attacked by the disease in a lower degree. There has been found also the positive interaction between the amount of nitrogen, used in fertilizing, and the vegetation area.

Under field conditions the effect of the juvenile resistance was certified in two of three years with all the three investigated sorts in the experiments with the terms of sowing.

A CONTRIBUTION TO THE STUDY OF MYCOFLORA OF PARASITIC PHANEROGAMS FROM THE GENERA CUSCUTA AND OROBANCHE

by

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Summary

On the diseased parasitic phanerogams from the genera *Cuscuta* and *Orobancha* which we collected gathered during our visits to the territories of Serbia, Vojvodina and Macedonia, we established the occurrence of 8 species of fungi, as follow: *Sclerotinia sclerotiorum* (Lib.) de Bary and *Fusarium oxysporum* Schlecht emend. Syd. et Hans. var. *orthoceras* (App, et Wr.) Bilai on *Orobancha cumana* Mutel., *Tubercinia orobanches* (Mérat) Fr. on *O. ramosa* L., *Fusarium semitectum* Berk. et Rav., *F. sporotrichiella* Bilai var. *poae* (Pk.) Bilai, *Alternaria* spp. *Stemphylium botryosum* Wallr. and *Ascochyta imperfecta* Peck. on *Cuscuta trifolii* Bab., *F. nivale* (Fr.) Ces. and *Alternaria* spp. on *C. approximata* Bab., *Sclerotinia* spp. *Alternaria* spp. and *F. sporotrichiella* Bilai var. *poae* (Pk.) Bilai on *C. lupuliformis* Crock., *F. oxysporum* Schlecht emend. Syd. et Hans. var. *orthoceras* (App. et Wr.) Bilai and *Alternaria* spp. on *C. europeae* L.

The most widespread species is *F. semitectum*, considerably less frequently occurring is *Alternaria* spp., whereas the remaining species appear but sporadically.

The isolates of *F. nivale*, *F. sporotrichiella* var. *poae*, *F. semitectum*, *F. oxysporum* var. *orthoceras* and *Alternaria* spp., when artificially inoculated under checked conditions, were pathogenic for *C. trifolii* and some of them also for *C. campestris* (*F. oxysporum* var. *orthoceras*, *F. sporotrichiella* var. *poae*), but they caused the withering and later also the drying of alfalfa. Only the isolate of *Alternaria* spp. did not cause any pathological changes on alfalfa.

Consequently, *Alternaria* spp. could be used for the control of *C. trifolii*, the more so as in other countries has been already acquired some experiens in its practical application (Rudakov, O., 1960).

However, other species, too, particularly *F. semitectum* and *F. oxysporum* var. *orthoceras* could be used for the control of *C. trifolii* (*F. oxysporum* var. *orthoceras* also for *C. campestris*) on the weeds, as at the same time would be destroyed both dodder and its host plants.

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NATURAL ENEMIES OF *BRACHYCAUDUS HELICHRYSI* KALT.
(*HOM. APHIDIDAE*) THE SUNFLOWER PEST IN VOJVODINA

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S u m m a r y

Natural enemies can play an important role in the regulation and reduction of the population of aphids. The effectiveness of natural enemies varies and depends on complex conditions under which their activities take place. The most important factor is the climatic conditions. Predators appeared to be more effective than the parasites but they did not become active till about a month after aphid colonisation on the plants. The activity of predators begins in June, but at that time the economic damage takes place. Some of predators (adults of *Coccinellid*) can not penetrate into the colonies of *B. helichrysi*, because the aphids are protected in the curling leaves, or under the leaves of button. Meanwhile, during June and partly in July the most effective predators are the larvae of *Coccinellid*, *Chrysopid* and *Syrphid*, especially at the border of fields. The most frequent species of *Coccinellid* on sunflower are *C. septempunctata*, *H. tredecimpunctata*, *P. quatuordecimpunctata*, *A. variegata* and *Scymnus* sp.

During July and August the adults, nymphs and larvae of the Anthocorid play a great role in reducing the population of aphids. At the beginning of infestation it was also found that one species of *Acarina*, red in colour parasited the aphid. Sometimes at the end of vegetation, the colonisation of aphid was attacked by small parasite wasp from the order *Hymenoptera*.

A CONTRIBUTION TO THE KNOWLEDGE OF DISTRIBUTION OF
NAEMACYCLUS NIVEUS (PERS. EX FR.) FUCK. EX SACC ON
PINENEEDLES IN CROATIA

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S u m m a r y

From 1977 to 1980 *Naemacyclus niveus* had been found on needles of *Pinus pinaster* and *P. halepensis* in Dalmatia and *P. nigra* in country. On these pines the fungus is common and spread both alone and associated with other fungi, often with *Lophodirmium pinastri*. Fruit bodies are numerous on *P. pinaster* and *P. nigra*, and rather rare on *P. halepensis* needles. The fungus was found in plantation on young and older trees. The pathogenicity of this fungus has not been investigated but *N. niveus* is associated with needlecast as a weak parasite.

nost i dinamičnost ekosistema zemljišta (supstrata) i promjene koje nastaju nakon aplikacije pesticida uslovljavaju neurjednačenost rezultata između pojedinih godina istraživanja. Ovo podrazumjeva da se korišćenje pesticida u praksi mora stalno pratiti i unapređivati, kako bi se utvrdile korelacije između promjenljivosti spoljnih faktora, kvaliteta pesticida i načina njegovog dejstva.

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EFFECT OF BASAMIDE AND SOME OTHER FUNGICIDES IN CONTROLLING DUMPING-OFF OF SCOTE PINE AND STRUCE

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Summary

Our previous experiments with Basamide showed that it has great value as the herbicide in weed control in seed beds. However, infection of some fungi causing dumping off and root rot could appear later. To achieve satisfactory control of young seedlings it is necessary to use both Basamide (before sowing) and other fungicides (after sowing).

In this work we present the results of combine applications of Basamide and some other fungicides in preventing the disease.

The results vary from year to year depend upon the influence of a number of the environmental factors on the fungicides and on the parasites themselves.

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SUSCEPTIBILITY OF SUGAR BEETS TO ATRAZINE

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Summary

The level of the susceptibility of sugar beet to atrazine in three types of soil: black hydromorphic soil, chernozem and brown forest soil, has been followed in this paper. The experiments were performed under controlled conditions.

Changes in the weight of fresh biomass of the shoot (leaf and root), changes in the chlorophyll content and changes in the intensity of transpiration were followed as the indicators of the phytotoxicity of atrazine to sugar beets.

The results of the investigations have shown that the phytotoxic effect of different concentrations of atrazine on sugar beet, followed by the above mentioned indicators, was most strongly expressed in plants grown on brown forest soil, less so on chernozem and it was the least expressed on black hydromorphic soil.

This is in accordance with the established fact that triazine herbicides are most strongly adsorbed in particles of organic fractions of the soil adsorptive complex, and thus the phytotoxic effect of atrazine applied on the soil with the greatest content of organic matter was the least expressed, and this effect was the strongest in the soil with the smallest content of organic matter.

Z a k l j u č a k

Na osnovu proučavanja efekata herbicida hlórprofama na procese hidrolize proteina u toku klijanja semena graška, transport slobodnih aminokiselina i biosintezu proteina u organima u porastu može se zaključiti sledeće:

— herbicid hlórprofam je inhibiran hidrolitičke procese, kao i procese vezane za konišćenje rezervnih azotnih jedinjenja kotiledona,

— uočene promene, u toku klijanja i daljeg porasta organa ponika, ukazuju na vrlo intenzivan katabolizam proteina i aminokiselina. Ukupan obim sinteze proteina u ostalim organima ponika je značajno smanjen u odnosu na kontrolu, a katabolizam još jače izražen. Intenzivan katabolizam proteina i aminokiselina praćen je nagomilavanjem glutaminske kiseline.

— da intenzitet i količina sintetizovanog proteina stoje u uskoj vezi sa količinom i nivoom slobodnih aminokiselina, odnosno može se reći da postoji skladan i harmoničan odnos između priliva aminokiselina i sinteze proteina.

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PHYSIOLOGICAL BASIS OF THE EFFECT HERBICIDE CHLOROPROFAM

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S u m m a r y

Within these investigations the effect was studied of the herbicide chlorprofam on the protein hydrolysis during the germination of peas seed, transport of free aminoacid and biosynthesis of proteins in growing organs.

The peas seed was germinated in the dark in Petri dishes between filter paper by constant humidity of the medium, at 22°C. The herbicide chlorprofam was used in two concentrations — 50 and 100 μM . These

examinations were carried out in the time intervals of 0, 4, 8, 12 and 16 days from the moment of putting the seeds for germination. Soluble proteins, after the extraction and dialysis were taken for the examinations which are the objective of this work. Aminoacids were determined by automatic ionoexchange chromatography in an automatic amino acid analyser (Beckman, model 120 C).

The herbicide chlorprofam inhibited the hydrolytic processes, as well as the processes related to the use of the storage nitrogen compounds of cotyledons. The changes observed during the germination and further growing of the sprout organs, showed very intensive catabolism of proteins and amino acids. Total protein synthesis in other organs of the sprout is considerably reduced in relation to the control, and the catabolism is not yet expressed. Intensive protein catabolism and that of amino acids was followed by accumulation of glutamic acid.