

INSTITUT ZA ZAŠTITU BILJA I ŽIVOTNU SREDINU –BEOGRAD  
INSTITUTE FOR PLANT PROTECTION AND ENVIRONMENT-BELGRADE

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## CONTENTS

### Review paper

- S. Stamenković*  
Wheat resistance to the Senn pests .....213-227

### Scientific papers

- Mira Starović, S. Kuzmanović, S. Stojanović*  
Reliability of identification of viruses in potato tubers .....229-239
- Vera Stojšin, F. Balaž, F. Bagi, Ivana Keljački*  
Pathogenicity of *Fusarium* spp. isolates from sugar beet root. ....241-249

### Preliminary paper

- V. Gavrilović*  
New bacterial disease of onion in Serbia. ....251-259

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## WHEAT RESISTANCE TO THE SENN PESTS

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### Summary

The nature and factors of wheat resistance to the Senn pests (*Eurygaster integriceps* Put., *E. austriaca* Schrk., *E. maura* L.) has been a subject of investigation worldwide. In Yugoslavia, it has been studied in recent decades. Most extensive studies have been conducted in countries of the former USSR (Russia, Ukraine, Moldavia), where the Senn pests represent a permanent and significant problem in wheat production.

As reported by numerous authors, wheat resistance is expressed through pests reaction to different varieties and through reaction of the varieties to the injuries caused by the pests. Interactions between the pests and wheat as the host plant, i.e., the effect of the pests on wheat and the effect of wheat on the pests, plays the key role in determining resistance factors. This is important from genetic and breeding points, because resistance factors may be incorporated in a model of wheat variety along with a series of qualitative and quantitative characteristics, thus directly and consciously influencing the development of resistant varieties.

The character of interactions arising between the pests and wheat host depends on a large measure on the morphological and physiological structure of the entire wheat plant and the parts of the plant on which the pests feed. It also depends on the biochemical properties, i.e., the structure of biopolymers (complexes of proteins, carbohydrates and lipids), in grain endosperm.

The morphological and physiological structure of wheat plants, which differs among varieties as well as among the different stages of organogenesis within a single variety, is an important factor of resistance to the Senn pests. Different structures affect differently the fertility of females, survival rate of larvae and the lifespan of adult insects.

By changing the structure of biopolymers in grain endosperm, it is possible to aggravate the feeding conditions for the pests. Such varieties, being less suitable hosts, suffer less damage at all stages of organogenesis, thus preserving the technological quality of wheat grain and final products made from it.

*Key words:* wheat, resistance, Senn pests, morphological and physiological structure, structure of grain endosperm biopolymers.

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## RELIABILITY OF IDENTIFICATION OF VIRUSES IN POTATO TUBERS

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### Summary

Time of infection of potato tubers with PVY and PLRV (primary or secondary) and the part on tubers from which samples were taken for analysis have an influence on incontestable detection of viruses by DAS ELISA method. In the tubers of primary infected plants the presence of PVY and PLRV was detected in 35% and 75%, respectively. All tubers (100%) of the secondary infected plants indicated positive reaction on PVY and PLRV. The samples for detection of PVY and PLRV in tubers of primary infected plants have to be taken from rose end and heel end, respectively, when all tubers tested showed positive reaction.

*Key words:* potato tubers, potato Y virus (PVY), potato leaf roll virus (PLRV), DAS ELISA.

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**PATHOGENICITY OF *Fusarium* spp. ISOLATES  
FROM SUGAR BEET ROOT**

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**S u m m a r y**

Pathogenicity of 15 *Fusarium* isolates from sugar beet root was investigated by artificial inoculations in sterilized and non-sterilized soil in controlled environment. The effect of fungi on emergence percentage, plant height and root necrosis intensity was determined. In non-sterilized soil inoculation with two *F. oxysporum* isolates and in sterilized soil inoculations with one *F. graminearum* isolates significantly reduced the number of emerged plants. In aspect of plant height there were no significant differences. All the investigated isolates of *F. oxysporum*, *F. graminearum*, *F. solani* and *F. equiseti* species showed high level of pathogenicity on sugar beet root rot.

*Key words:* sugar beet root, *Fusarium*, pathogenicity, root rotting.

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**NEW BACTERIAL DISEASE OF ONION IN SERBIA**

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**S u m m a r y**

Soft rot symptoms of onion bulbs were observed during 1997. on Belgrade and Novi Sad green market. A gram negative, rod shaped, nonfluorescent bacterium was isolated on King's medium B. Pathogenicity of strains was confirmed by artificial inoculation of onion bulb slices cv. Red Baron. Rotting of inoculated onion slices appeared 24 h after inoculation, while total decomposition occurred after 3 days.

Strains caused HR of tobacco leaves (cv. Samsun), but not rotting of potato slices.

They utilized glucose oxidatively (O/F test) and were positive for oxidase, catalase, lecithinase and lipase production (Tween 80) and gelatine liquefaction .

Strains grew at 41°C and in the presence of 3 % NaCl but not in the presence of 5 % NaCl. The strains neither hydrolyzed starch and aesculine nor produced indol and levan.

They utilized: glucose, fructose, ribose, mannitol, sorbitol, inositol, citrate, D-tartrate and nicotinic acid but not sucrose, raffinose, maltose and erythritol .

Characteristics of the investigated strains indicated that bacterium *Burkholderia gladioli* pv. *alliicola* caused onion bulb soft rot in Serbia.

**Key words:** onion bulbs, bacterial, *Burkholderia gladioli* pv. *alliicola*, pathogenicity, biochemical-physiological properties.

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