

Book of Abstracts

**Sustainable Systems
of Cereal Crop Protection
against Fungal Diseases
as the Way of Reduction
of Toxin Occurrence
in Food Webs**

Acronym: Healthy Cereals

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Agricultural Research Institute Kroměříž, Ltd.

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I. Oral Presentations

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Contribution of non-specific leaf rust resistance in Yugoslav wheat production and breeding

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The term of the non-specific resistance is based on interactions between different aviable virulences of pathogen and host genotype without significant differences in expression. The genotypes which show the low infection efficiency and longer latent period were crossed (in the Institute of field and vegetable crops) with aim to reach the higher level of the resistance at last complete. It is known that in Yugoslavia only genes Lr 9, 19 and 24 single provide the stable hypersensitive resistance to many isolates in greenhouse and to population in field for many years. They were never widespread in production. Complementary effect of the genes for the resistance is also welknown and used in these region. The further studies were dane with aim to distinguish the pleiotropic from one way effects of the genes for different resistances (hypersensitive-specific and partial-nonspecific).

The result are varieties with satisfactory level of the resistance to *Puccinia recondita tritici* (sometimes some of them ocupied 20% of in the Yugoslavia by wheat covered area), for eight or more years, without cases of predictable and proved overcoming in particular region. Varieties Renesansa, Pobeda, Lasta and according to investigated character similar new (NS 2-4860, NS 2-3325/1, NS 109/96, Sonata) and older (lbarka) genotypes possess the relative (in comparison with before or nowadays widespread varieties Novosadska Rana 2 or Evropa 90) higher level of the partial resistance in the seedling (greenhouse) and adult stage in the field, without influence of pseudoresistance increasing factors (bad growing conditions, short green leaf area period etc). The resistance was tested on crops that reached yields near 10t/ha in microtrials. By the genealogies it is expectable that they possess known genes for the resistance effective to some virulence of the pathogen before or out of the region. Mostly, they are not originated from relative species (only wheat/rye translocation is common). These or similar genes sometimes appear as the components in effective interactive combinations (according to inheritance studies of the F2 progenies from single cross hybrids between completely and incompletely resistant genotypes).

It is obvious that variety Lasta prolonged the life in production with decreasing the occupied area mostly correlated with long term arrangement by fitness. The further tendency is that old varieties always are grown in worse conditions connected with lower intensity of the disease cause attack. The data collected on the fields of Novi Sad Institute where the after complex crosses (Stepnjacka 30, NS 736, Bezostaia 1, Sava, Aurora, Mironovskaia Jubileinaia, NS 14-81 and Dunav) chosen genotype Lasta was grown near optimally, shows low relative variation in disease severity for all mentioned period. That could be durable non-specific resistance.