VARIETAL SUSCEPTIBILITY OF FLAX TO PHYTOTOXIC METABOLITES OF *FUSARIUM OXYSPORUM* F.SP. *LINI* AND *FUSARIUM PALLIDIROSEUM* IN RELATIONSHIP TO RESISTANCE

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Filtrates of phytotoxic metabolites of *F. pallidiroseum* (produces diacetoxyscirpenol) and *F. oxysporum* f. sp. *lini* (produces fusaric acid) were obtained from the stationary liquid cultures that contained 2 % of sucrose and different concentrations of KNO₃ (0 %; 0,2 %; 0,5 %; 0,7 %; 1,0 %). The filter papers soaked by 5 ml of the diluted autoclaved filtrates were plated out to Petri-dishes. We sowed 50 seeds of flax (*Linum usitatissimum*) per Petri-dish in 4 repetitions. The collection of 30 varieties of flax with different degrees of resistance to *F. oxysporum* f. sp. *lini* were chosen on the basis of the field trials.

The aims of our work were:

1. to find out influence of phytotoxic metabolites of *F. pallidiroseum* a *F. oxysporum* f. sp. *lini* to germination and growth dynamics of roots in in vitro tests
2. to find out the effect of nutrient soil composition on phytotoxic metabolites production
3. to find out the effect of dilution of metabolites on germination inhibition and growth dynamics of roots
4. to find out varietal differences in sensitivity to phytotoxic metabolites of *F. oxysporum* f. sp. *lini*

RESULTS

Phytotoxic metabolites of *F. pallidiroseum* a *F. oxysporum* f. sp. *lini* showed different effect on germination inhibition and growth dynamics. Metabolites of *F. pallidiroseum* caused higher initial inhibition than metabolites of *F. oxysporum* f. sp. *lini*. This inhibition stopped after 72 hours. Root tips withered away, but taproots were not inhibited. Metabolites of *F. oxysporum* caused withering of root tips and root rot. Composition of nutrient cultivating soil influenced a phytotoxic metabolites production. Neither of fungi produced phytotoxic metabolites on nutrient soil without KNO₃. *F. pallidiroseum* produced more of phytotoxic metabolites on nutrient soil with higher content of KNO₃ in nutrient soil (maximum production was at 0,7 % KNO₃ concentration). Production of phytotoxic metabolites of *F. oxysporum* was not affected by different concentrations of KNO₃ in nutrient soil. The effect of the dilution water was higher in *F. pallidiroseum*. The phytotoxic and inhibiting effects decreased with dilution. Decrease of the phytotoxic and inhibiting effects in *F. oxysporum* was gradual.

There were found differences among varietal sensitivity of flax to phytotoxic metabolites. Correlation between degree of resistance of flax varieties to *F. oxysporum* f. sp. *lini* and sensitivity to phytotoxic metabolites was not proved. There were resistant varieties (Elise, Linota, Hermes, Viking, Laura) and sensitive ones (Hera, K 5327, Barbara) among varieties with high resistance to phytotoxic metabolites. Analogously there were resistant varieties (Emerson, Atalante, Mc Duff, Nike, Texa, Culbert, Marine, Bison) and also sensitive ones (Ocean, Regina, Slavnyj 82) among sensitive varieties.