

Comparison of spring oats varieties in response to the effects of root rot toxins in an *in vitro* culture

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The effect of the *Fusarium poae* and *Fusarium equiseti* toxic metabolites was studied *in vitro* in oats immature embryos. The Murashige–Skoog medium (MS) and the classical 3-stage cultivation were used: induction, proliferation of calli and plant regeneration. Toxic metabolites obtained on the basis of isolates of the author's collection of regional pathogens on the nutrient medium Chapeka. Filtrates of toxic metabolites of the species *F. poae* and *F. equiseti* were used as selective agents on the proliferation medium of calli in concentrations of 30 %, 40 % and 50 %. The volume of the material was 2578 immature embryos of eight varieties: Tubinsky, Sayan, Kazyr, Selma, Talisman, Zolotoi pochatok, Golets, Tyumen holozerny. Callus induction took place on MS with the addition of 2,4-D – 3 mg/l and IAA – 2 mg/l, proliferation – from 2,4-D – 1.5 mg/l, regeneration – with kinetin – 1 mg/l and IAA – 0.5 mg/l. Inhibition of proliferation of calli by metabolites is highly significant even for lower concentrations of 30–40 % (from 49.4 to 71.0 % for *F. poae* and 37.6–66.1 % for *F. equiseti*). Under these conditions the Tyumen holozerny and Kazyr varieties responded less to stress. Organogenesis and the formation of full-fledged regenerants in the presence of metabolites was above average for these same forms. Some dependence of the varietal reaction on the type of micromycetes was observed. The varieties Selma and Talisman compared with others showed greater resistance to the metabolites of *F. equiseti*, and not of *F. poae*. In general, the metabolites of *F. poae* caused a stronger inhibitory effect on the stages of morphogenesis. Less resistant to the inhibitory effects of two types of micromycetes p. *Fusarium* varieties Golets, Tubinsky and Zolotoi pochatok. In this way, *in vitro*, oat varieties were tested for resistance to toxic metabolites of two types of micromycetes *F. equiseti* and *F. poae*.