

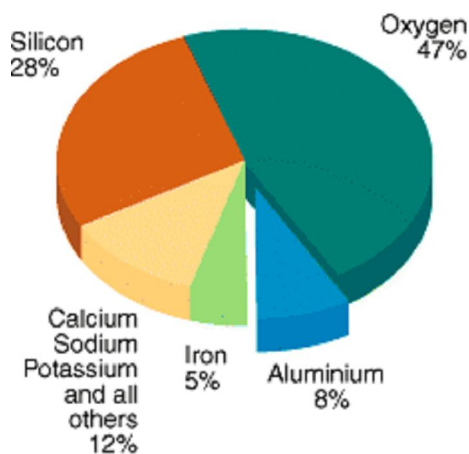
EVALUATION OF SEEDLINGS TOLERANCE TO TOXIC CONTRENTATIO OF ALUMINIUM IONS IN BREEDING MATERIAL OF TRITICALE

Оценивается генетическая изменчивость селекционных материалов на устойчивость к ионам алюминия, который будучи одним из основных компонентов почв, является важным фактором ограничения роста растений в почвах кислотностью ниже 5,0 рН и может ограничивать рост при уровнях кислотности до 5,5 рН.

The paper estimates the genetic variability for Al ion tolerance among breeding material as Al being a major soil constituent is an important growth-limiting factor for plants in many acid soils below pH 5,0 and can limit growth at pH levels as high as 5,5.

Introduction

Aluminium (Al) is the world's most common metallic element and constitutes about 8 % of the Earth's crust.



Within cereals is discrepancy of reaction on toxicity of observed. This study was conducted to estimate of *Triticale*.

Materials and methods

The effect of Aluminium ions at concentrations of 0 (control), 10, 20, 60 ppm mg dm⁻³, in acid environment (pH 4,2), on the seed germination and seedling roots growth was analyzed for 19 hybrid strains obtained by crossing *Triticum durum* (LGR 1359/18, «Helidur», «Orjaune»), *Triticum aestivum* («Banti», «Helia») and *Triticale* («Wanad», «Kargo»,

«Migo») and *Secale cereale* («Abago», «Bajtos»). The samples of seeds were germinated on filter paper, in Petri dishes moistened with water solution with Al ions. Percentage of germinated seeds and length of roots and leaf. Index of tolerance was calculated by means of modified Wilkin's test.

Results

On base of carried research ascertain that Al ions did not influence the seed germination. The root length of seedlings was limited radically with increase of Al ion concentration. The highest tolerance of aluminium ions showed:

- (*Triticale* Wanad x *Triticum durum* Helidur) x *Triticale* Wanad,
- (*Triticale* Kargo x *Triticum durum* Orjaune) x *Triticale* Wanad,
- (*Triticale* Kargo x *Triticum durum* Helidur) x *Triticale* Wanad,
- (*Triticum aestivum* Banti x *Secale cereale* Bajtos) x *Triticale* Migo,
- (*Triticum aestivum* Banti x *Secale cereale* Bajtos) x *Triticale* Wanad,
- (*Triticale* Migo x *Triticum aestivum* Helia) x *Triticale* Wanad,
- (*Triticale* Wanad x *Triticum aestivum* Helia) x *Triticale* Wanad,
- (*Triticale* Wanad x *Secale cereale* Abago) x Gabo.

The most susceptible to this metal were spring wheat «Jasna» and *Triticale* «Kargo», at

Al concentration of 10 ppm the reduction of the root length was 60 % and 40 % in relation to the control.

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