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STORAGE POTENTIAL OF TRITICALE ACCESSIONS - INDICATOR OF THEIR VIABILITY UNDER *EX SITU* CONSERVATION

Corlateanu L.*, Ganea A., Leatamborg S.
Institute of Genetics, Physiology and Plant Protection, Chisinau, Republic of Moldova
*E-mail: lcorlateanu@yahoo.com

The purpose of this research was to study the morphophysiological and biochemical parameters of tritical seeds after accelerated aging (AA) test. The storage potential (SP) of collection accessions in active collections of the gene bank was characterized with the purpose of their *ex situ* conservation, and to reveal genotypic differences of genotypes. According to the plan, triticale seeds genotypes should be grouped by their potential capability to preserve viability of samples exposed to high temperature and humidity.

Objects of studies were collection accessions of triticale seeds from active collection of the plant gene bank. SP of seeds was determined by two tests: test for accelerated aging of seeds by Safina & Filipenko method (2013) and test for electrical conductivity of solutions (EC), both are included in the International Rules for Seed Testing (ISTA). AA-test of seeds was conducted under the increased air temperature (37ºC), humidity of seeds 13%, high relative humidity (98%), aging time was 30 days. During this test various morphophysiological parameters of seeds and seedlings were measured every week **(**dynamic measurement**)** according to the ISTA: germinating power (GP) and germinability (G) of seeds, radicle length (RL), fresh and dry biomass of radicles. EC of solutions with normal and aged seeds was measured by conductometer N5721M. With regard to biochemical parameters, the activity of the peroxidase enzyme (PO) was measured in radicles of seedlings. The experiment was conducted in quadruplicate. Aged seeds were sprouted in Petri dishes in thermostat at 25ºC. Experimental data were processed using the software *Statistica* 7. According to the set of different parameters of triticale seeds after the AA-test of seeds, the following genotypes had the highest SP: *Ingen 3, Ingen 33, Ingen 35, Ingen 40, Ingen 54, Ingen 93* (loss of seed germination after AA-test by 35%*)* and the lowest storage potential was found in *Ingen 2 and Ingen 4* (loss of seed germination by 70%)**.** The smallest drop of other parameters was in genotypes with high SP (raw root biomass-by 100 mg, root length-by 2 mm). Conclusions: 1. Use of AA-test of seeds and determination of their different parameters allowed assessment of SP of triticale collection accessions from the active collection of the gene bank. 2. It was demonstrated that EC of solutions with aged seeds of the most genotypes of triticale is higher than that of solutions with normal seeds. 3. Significant positive correlation of germinability of triticale seeds with germinating power, radicle length, fresh and dry biomass of seedlings was revealed after conduction of test for AA of seeds.

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