



**FEATURES OF DEVELOPMENT AND ELECTROPHORETICAL SPECTRA OF SOME ENZYMES IN C<sub>j</sub> GENERATION BARLEY PLANTS AFTER TREATMENT OF COLCHICINE**

**Kedick R.I.**

*I.I. Mechnikov Odessa National University, Odessa, Ukraine*

E-mail: rikedr@ukr.net

Polyploidization of organism genomes causes large practical and theoretical interest. In spite of it, many problems, in particular mechanisms of genome stabilization after polyploidization, functioning of separate genes after the increase of their amount in cell, haven't been investigated. The research of gene expression of experimentally received polyploid plant generations can serve as an appropriate model of gene coadaptation process in a polyploid genome.

The purpose of the presented work was the comparison of control plants with the plants C<sub>i</sub>, which were received after treatment with colchicine. Such parameters as general and productive bushy, mass of plants and its components, fertility, linear sizes and mass of seeds were studied as indices of plants development. The electrophoretical spectra of peroxidase (PER), phenol oxidase (FO), superoxide dismutase (SOD), esterase (EST), alcohol dehydrogenase (ADH) and malate dehydrogenase (MDG) were explored. In our terms the treatment with colchicine influenced development substantially the already on early stages: swellings (K-tumors) appeared in knot of corymb and koleoptile (at the 93,3+0,8% treated plants), viability of plants strongly declined (there were 92,5+2,5% poor development or midget two-week seedlings). Treatment with colchicine considerably reduced general and productive bushy of plants and mass of seeds from one bush. There wasn't reliable influence at the formed vegetative part of plants. Decrease in the number and mass of seeds in a re-calculation on one plant or on one ear and amount of fertility ears at the experimental plants have been shown. The weren't observed in control isozymes have been found in some treated with colchicine plants. Frequency of new isoforms in the experimental plants wasn't identical for different enzymes. SOD and MDG were most conservative, the greatest number of experimental plants with new isoforms (22,6%) was exposed at the FO analysis. The coefficients of variation of quantitative parameters in control and experimental groups of plants at the generalized analysis for all explored enzymes have not differentiated for certain. At the same time level of varying indices with initially low variance was higher to the treated plants for sure.

**ОСОБЛИВОСТІ РОЗВИТКУ ТА ЕЛЕКТРОФОРЕТИЧНІ СПЕКТРИ ДЕЯКИХ ФЕРМЕНТІВ РОСЛИН ЯЧМЕНЮ ПОКОЛІННЯ C<sub>i</sub> ПІСЛЯ ОБРОБКИ КОЛХІЦИНОМ**

**Кедік Р.І.**

Проаналізовано рослини ячменю покоління C<sub>i</sub>, які були оброблені колхіцином. Встановлені розходження між контрольними і дослідними рослинами по багатьох загальних ознаках розвитку, однак маса вегетативної частини та 1000 зерен були стабільними. Обробка колхіцином призводила також до змін в електрофоретичних спектрах досліджуваних ферментів.