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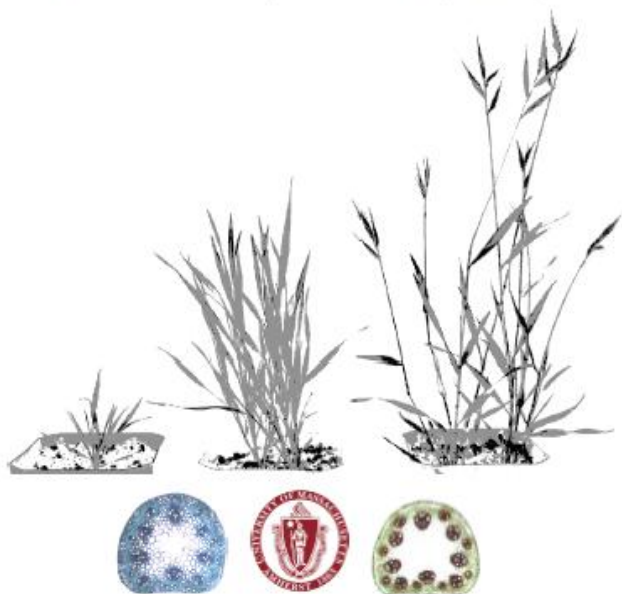
Comparative study of proline and soluble protein in *Brachypodium distachyon* L.

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Abstract

Brachypodium distachyon L. (Bd) as model object is studied in Kazakhstan for the first time with the purpose of its further use in breeding and genetic purposes. Bd has small, in comparison with the major food and fodder cereals, genome size that makes it a convenient object for the molecular and genetic analysis, as well as agricultural genetics, including study of the structure of a cellular wall, seeds development and answers to adverse effects of environmental factors. 14 day old seedlings of Bd and two wheat varieties Kazakhstanskaya-19 and Kazakhstanskaya early ripe (drought-resistant, struck by a brown rust up to 40%) served as research material. Bd (Bd-21 line) seeds were kindly provided by the RIKEN BioResource Center in Japan. The Bailey method was used in order to estimate the content of soluble protein in Bd and wheat leaves (mg/ml) at a wavelength of 330 nm. Optical density was measured on Ultrospec 1100 pro "Amersham BioSciences" spectrophotometer at the wavelength of 522 nm. Calibration curve in the range of 0.01 - 0.2 nm of pure Ajinomoto proline was made for estimation of proline content. Comparative study of the quantitative content of soluble protein in leaves of seedlings of Bd and wheat showed that its content in Bd leaves (0.46±0.03 mg/ml) statistically exceeds its content in soft wheat by 40-42%. According to experimental results content of proline in Bd is almost twice lower, than in studied varieties of soft wheat.



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