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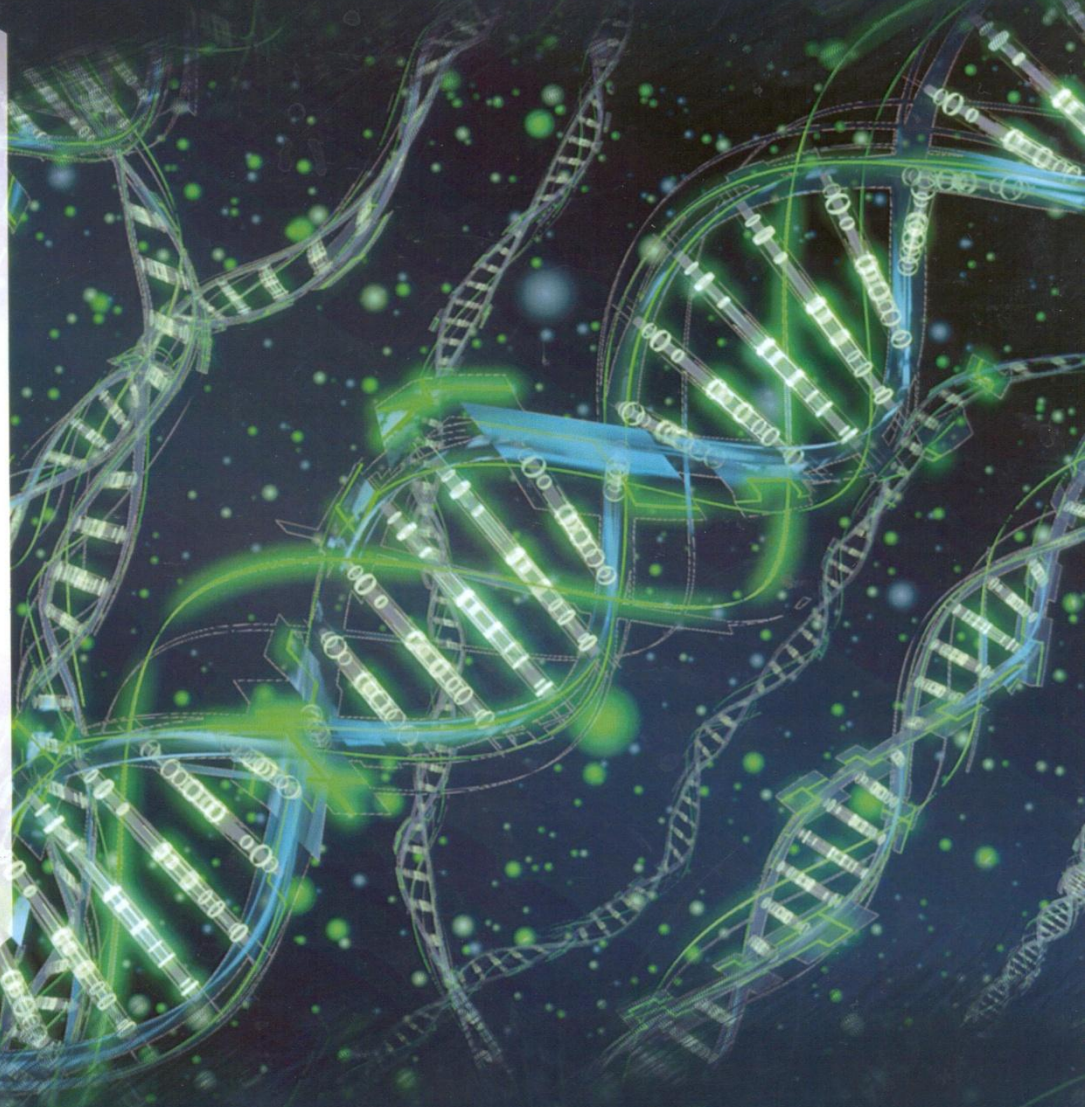

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Introduction of *Brachypodium distachyon* as genetic source of stability to leaf rust in spring wheat

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Creating of resistant to pathogens varieties is a complex area in breeding, especially in wheat, since the physiological races of pathogens are evolving rapidly. The purpose of research is a comparative determination of a number of stress and antioxidant enzymes activities in soft wheat and *Brachypodium distachyon* (Bd21) before and after infection by *P. recondita* pathogen. The materials of research are two varieties of soft wheat of local breeding and Bd21 as model object. The reason for the selection of wheat varieties is the degree of sensitivity or resistance to rust. In the two-leaf stage of growth, the plants were inoculated by urediniospores, the control-untreated plants. Inoculum Kazakh population spores of the *P. recondita* fungus. The methods of biochemistry, immunology and statistics were used. The activity of antioxidant enzymes was evaluated by the intensity of staining of formazan bands using the digital images of the gels obtained by the scanner Epson Perfection V750 PRO. It was found that the activity of nitrogen metabolism enzymes of MDH-GOAT and GDH enzyme complex in wheat before treatment by the pathogen exceeds its processing activity in Bd21 in 3 and 2 times, respectively. Infection increases the activity of FC of MDH-GOAT in Bd21 by 4.7%, in Kazakhstan 19 varieties of wheat by 6.4% in Kazakhstan early ripe variety decrease of 10% was observed. It was found that the infection of the plant resulted in a slight increase in activity xanthine dehydrogenase by 10 and 5% of control in wheat. In Bd21, xanthine dehydrogenase activity decreased by 36%. Aldehyde oxidase activity in the leaves of wheat varieties after pathogen infection increased from 41 to 49%, Bd21 activity increased by 42% relatively to control.

Biography

Omirbekova Nargul was graduated from Al-Farabi Kazakh National University and Lomonosov Moscow State University and has completed her Doctoral studies from Farabi Kazakh National University. She is currently a Professor at the Department of Molecular Biology and Genetics, School of Biology and Biotechnology of the KazNU named after Al-Farabi (Republic of Kazakhstan). Her research interests include chemical mutagenesis, genetics and biochemistry of wheat. She has published more than 30 papers in reputed journals.

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Notes: