

MASRUSplants: an online database of DNA markers associated with rust resistance genes of wheat

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Wheat is a valuable agricultural crop adapted for cultivation in various ecological and climatic conditions. During its life cycle, wheat is subject to various stresses that reduce yield and grain quality. One of these biotic stresses is rust fungi are the causal agents of plant diseases.

The identification of wheat resistance genes is the most accurate and fastest procedure when use of modern selection technologies, mainly Marker Assisted Selection (MAS).

For cataloging information on MAS we developed the MASRUSplants database (<https://masrusplants.ru>). The main goal of database is to increase the use of the genetic potential of wheat resistance to fungal diseases and to make the MAS technique widely available.

The developed database MASRUSplants provides a large list of protocols for more than 20 molecular markers of resistance genes in wheat. All molecular markers were verified on an expanded array of Russian germplasm. The database contains information on molecular markers for genes *Sr* (stem rust), *Lr* (stripe rust), *Yr* (leaf rust).

The study is supported by the Kurchatov Genomic Center of the Institute of Cytology and Genetics, SB RAS (075-15-2019-1662).

The main publications of authors on the subject of the abstract:

Kelbin V. N., et al. Diversity of stem rust resistance in modern Siberian bread wheat (*Triticum aestivum*) germplasm // *Plant Breeding* (2022) 141(2): 194-203 doi.org/10.1111/pbr.12999

Сколотнева Е. С., Кельбин В. Н., и др. Ген *Sr38*: значение для селекции мягкой пшеницы в условиях Западной Сибири // *Вавиловский журнал генетики и селекции* (2021) 25(7): 740–745 doi.org/10.18699/VJ21.084

Take-home message:

The developed database MASRUSplants provides a large list of protocols for more than 20 molecular markers of resistance genes (*Sr*, *Lr*, *Yr*) verified on an expanded array of Russian germplasm.