Doubled haploid technology as accelerate of the breeding programs

Petrash N.V., Piskarev V.V., Sovetov V.V.

Siberian Research Institute of Plant Production and Breeding – Branch of the Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

E-mail: pnv11@bionet.nsc.ru

The production of doubled haploids (DH) from hybrids allows breeders to significantly speed up the breeding process. In addition, DH-lines can be used as constant sources of target genes. The effect of genotype is the main limiting factor of androgenesis *in vitro.* Therefore, one of the propos approaches is to use AC only with responsive genotypes. The study of the breeding material will make it possible to identify genotypes that are responsive in AC. In our study, varieties and hybrids F_1 and F_2 were studied to androgenesis response. Sources of a high degree of responsiveness and a poor response have been identified. More than 100 DH-lines from 17 combinations have been created. The use of doubled haploid technology made it possible to quickly create lines with resistance to powdery mildew, lines with short-stemming. The best lines are included in the further selection process. Three-year study of 7 DH lines (*L* Velut×Tulun 15) in the field conditions allowed us to identify promising lines, which exceeds the parental forms in terms of yield.

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

Петраш Н.В. и др. Изучение эффективности культуры пыльников in vitro сортов и гибридов мягкой пшеницы (Triticum aestivum L.) // Зерновое хозяйство России (2022) 14, № 6: 17-22

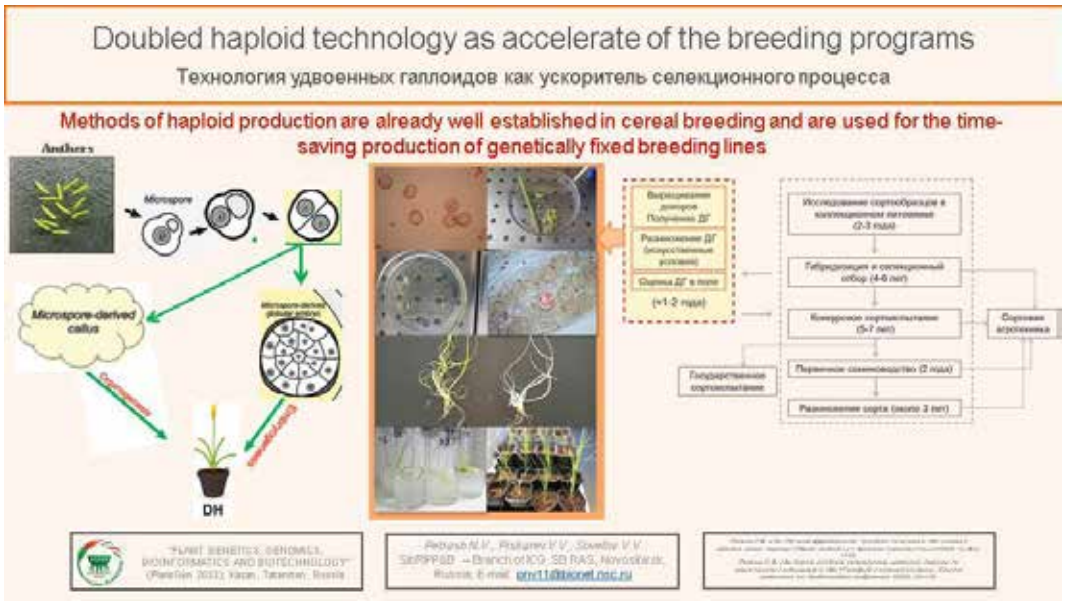
Петраш Н. В. и др. Оценка исходного селекционного материала пшеницы по отзывчивости к андрогенезу in vitro // Генофонд и селекция растений : Сборник материалов 6-й Международной конференции (2022): 126-130.

Take-home message:

DH-technique is a promising direction in the modern breeding process

More than 100 DH-lines from 17 combinations have been created

Sources of a high degree of responsiveness and a poor response have been identified



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