

## **Annotation**

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### ***The characteristics of winter soft wheat samples concerning winter hardiness***

*Plant resistance to low negative temperatures is one of the main factors determining the level of realization of potential productivity of winter wheat in most agro-climatic zones of its cultivation. That is why the creation of winter-hardy varieties of this crop, meeting the needs of modern agricultural production, is an important problem of the domestic selection. One of the successful ways of solving this problem is the creation and implementation of the genetic theory of obtaining varieties resistant to low temperatures.*

*Diallel crossing is widely used for more detailed information on the characteristics of the genetic control of frost hardiness of winter wheat hybrids. As a result of their use, as well as a topcross method, the combining ability of many varieties on frost hardiness is determined. It is found that varieties of high level of resistance to low negative temperatures have better general combining ability.*

*In-depth genetic studies on the nature of frost resistance show that the resistance of soft wheat is controlled by a complex genetic system. Currently, 13 chromosomes that determine the frost hardiness efficiency are identified: 1A, 5A, 7A, 1B, 2B, 3B, 4B, 5B, 6B, 1D, 2D, 4D, 5D. This control of different varieties is carried out by chromosomes of the same type, as well as their different number.*

*Studying electrophoretic patterns of reserve proteins, there was a connection of different varieties of winter soft wheat with alleles of gliadin coding loci. Reserve proteins of the most frost-resistant varieties always have blocks of gliadin components Gld 1A1 or Gld 1A2, Gld 1D5, Gld 6A3, Gld 6D2.*

*The study determined frost - and winter hardiness of the initial selection material of the collection of samples and the best ones of them were characterized.*

*It was found that Patras, Etana and No. 4075 collection materials can be donors of genes of winter - and frost resistance for the selection of new varieties and crop hybrids.*

**Key words:** *frost resistance, winter hardiness, initial material, donor of genes, wheat, selection.*