A WIDE DISTRIBUTION OF A NEW VRN-B1c ALLELE OF WHEAT TRITICUM AESTIVUM L. IN RUSSIA, UKRAINE AND ADJACENT REGIONS: A LINK WITH THE HEADING TIME AND ADAPTIVE POTENTIAL

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The adaptation of common wheat (*T. aestivum* L.) to diverse environmental conditions is greatly under the control of genes involved in determination of vernalization response (*Vrn-1* genes). It was found that the variation in common wheat heading time is affected not only by combination of *Vrn-1* homoeoalleles but also by multiple alleles at a separate *Vrn-1* locus. Previously, we described the *Vrn-B1c* allele from *T.aestivum* cv. 'Saratovskaya 29' and found significant differences in the structure of the first (1st) intron of this allele when compared to another highly abundant *Vrn-B1a* allele, specifically, the deletion of 0.8 kb coupled with the duplication of 0.4 kb. We suggested that the changes in the intron 1 of *Vrn-B1c* allele caused earlier ear emergence in the near-isogenic line and cultivars, carrying this allele. In this study we investigate the distribution of the *Vrn-B1c* allele in a wide set of spring wheat cultivars from Russia, Ukraine and adjacent regions. The analysis revealed that 40% of Russian and 53% of Ukranian spring wheat cultivars contain the *Vrn-B1c* allele. The high distribution of the *Vrn-B1c* allele can be explained by a frequent using of 'Saratovskaya 29' in the breeding process inside the studied area. From the other hand, the predominance of the *Vrn-B1c* allele among cultivars cultivated in West Siberia and Kazakhstan may be due to the selective advantage of this allele for the region where there is a high risk of early fall frosts.