



MICROSATELLITE ANALYSIS OF SUBSTITUTION LINES WINTER BREAD WHEAT MIRONOVSKAYA 808 (BEZOSTAYA 1 5A) AND BEZOSTAYA 1 (MIRONOVSKAYA 808 5A)

Chebotar G.1, Pankova K.2

1 I.I. Mechnikov Odessa National University, Odessa, Ukraine

2 Institute of Crop Research, Prague, Czech Republic

Nine substitution lines of winter bread wheat (*Triticum aestivum* L.) were investigated to test the inter-varietal chromosome substitutions. The method of chromosomal manipulations based on aneuploid status of monosomic mediator has been used by K. Pankova for creation the lines: Mironovskaya 808 (Bezostaya 1 5A) and Bezostaya 1 (Mironovskaya 808 5A). The complicated scheme of backcrosses changed with self pollinations of plants to reach a double haploid condition of the 5A chromosome has been applied. All generations were cytologically checked. The chromosome number of this material was ($2n = 42$). But the substitutions could be incorrect due to some meiotic irregularities or personal mistakes.

Microsatellites (= Single Sequence Repetition, SSR Markers) are highly polymorphic, codominant markers, that are distributed throughout all chromosomes of wheat genome with high density. They are ideal tools for establishing the authenticity of cytogenetically developed substitution lines.

Four lines of variety Mironovskaya 808 with substituted 5A chromosome of Bezostaya 1 and five lines of variety Bezostaya 1 with substituted 5A chromosome of Mironovskaya 808 were analyzed by using microsatellite markers for 5A chromosome: *Xgwm304*, *Xgwm415*, *Xgwm156*, *Xgwm126*, *Xgwm186*, *Xgwm291*, *Xgwm293* and *Xgwm261* (2DS). We detected that the substituted chromosome was not carried up in two lines of variety Mironovskaya 808 5A chromosome of Bezostaya 1, and also in one line that was based on the variety Bezostaya 1 the recipient genotype was not confirmed as Bezostaya 1.

The studied winter wheat lines with substituted 5A chromosome will be used for the analyses of influence of the frost resistance genes on winter hardiness of bread wheat.

МНКРОСАТЕЛЛИТНЫЙ АНАЛИЗ ЗАМЕЩЕННЫХ ЛИНИЙ ОЗИМОЙ МЯГКОЙ ПШЕНИЦЫ МИРОНОВСКАЯ 808 (БЕЗОСТАЯ 1 5А) И БЕЗОСТАЯ 1 (МИРОНОВСКАЯ 808 5А)

Чеботарь Г.А., Панкова К.

Исследовали четыре линии пшеницы сорта Мироновская 808 с замещенной 5А хромосомой от сорта Безостая 1 и пять линий сорта Безостая 1 с замещенной 5А хромосомой от сорта Мироновская 808. Микросателлитным анализом локусов, расположенных на 5А хромосоме - *Xgwm304*, *Xgwm415*, *Xgwm156*, *Xgwm126*, *Xgwm186*, *Xgwm291*, *Xgwm293* и *Xgwm261* (2DS) - было показано, что при создании замещенных линий в двух случаях у линий сорта Мироновская 808 5А хромосома из сорта Безостая 1 не была перенесена, у одной из линий, полученной на основе сорта Безостая 1, реципиентный генотип не соответствовал сорту Безостая 1. Линии с замещенной 5А хромосомой будут использованы для изучения влияния генов, локализованных в этой хромосоме, на морозостойкость и зимостойкость озимой мягкой пшеницы.