

Molecular-genetic polymorphism of glycinin encoding genes in Ukrainian and Serbian soybean varieties

A. Venger*, O. Kolesnyk, N. Volvkova

Plant Breeding and Genetics Institute – National Center of Seed and Cultivar Investigation, Odessa, Ukraine

* venger87@ukr.net

Introduction

Soybean (*Glycine max* L.) is the main source of vegetable protein and amino acids in the diet of humans and animals of the world. It is one of the most common crops in world agriculture, which yields only rice, corn and wheat in terms of sown area. It is grown on an area of about 93.5 million hectares of the world (Wang et al. 2016). In recent years, soybean has become very significant in Ukraine. The most promising proteins for the production of soybean products are globulins, namely, 11S globulin fractions due to the presence of glycinin. The quality of the products depends on the ratio of these fractions and the directions of their usage (Hsiao et al. 2015).

Polymorphism of *Gy1*, *Gy2*, *Gy3*, *Gy4*, *Gy5* genes, which are encoding glycinin is studied on the American soybean varieties (Jegadeesan et al. 2012; Kim et al. 2010). The aim of our conducted research is to detect polymorphism of glycinin encoding genes in Ukrainian and Serbian soybean varieties.

Material and Methods

Polymorphism of *Gy1*, *Gy2*, *Gy3*, *Gy4*, *Gy5* genes was studied by polymerase chain reactions (PCR) on the samples of Ukrainian (Anatoliivka, Antares, Apolon, Berehynia, Chernivets'ka 9, Farvater, Kyivs'ka 98, Mel'pomena, Odes'ka 150A, Ustia, Valyuta, Vasyl'kivs'ka, Yuh 30) and Serbian (Proteyinka) soybean varieties. As reference variety there was used the American variety Harovinton.

Results and Discussion

As results, all studied varieties have *Gy1*, *Gy2*, *Gy3*, *Gy4*, *Gy5* gene alleles that were found to be similar to the soybean variety from the USA. The results of the conducted research are indicating that during the breeding of the studied varieties there were used the same origin samples.

References

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