IN VITRO ASSESSMENT OF TOMATO ROOTSTOCK – SCION COMPATIBILITY

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INTRODUCTION. The selection of vigorous rootstocks with high compatibility with cultivated scions is an important objective in tomato breeding.

AIM of the study is to assess the compatibility between experimental rootstocks and cultivated tomato varieties using *in vitro* micrografting techniques.

MATERIALS & METHODS

➤**Rootstocks:** *BK-88 & BK-96* (interspecific hybrids *S. lycopersicum* × *S. habrochaites*)

➤**Scions:** Ukrainian tomato varieties *Smakolyk*, *Rozheve sertse*, *Yantarny bogatyr*, *Udavchyk*

➤**Control 1** – ungrafted scion plants, **Control 2** – self-grafted scion plants

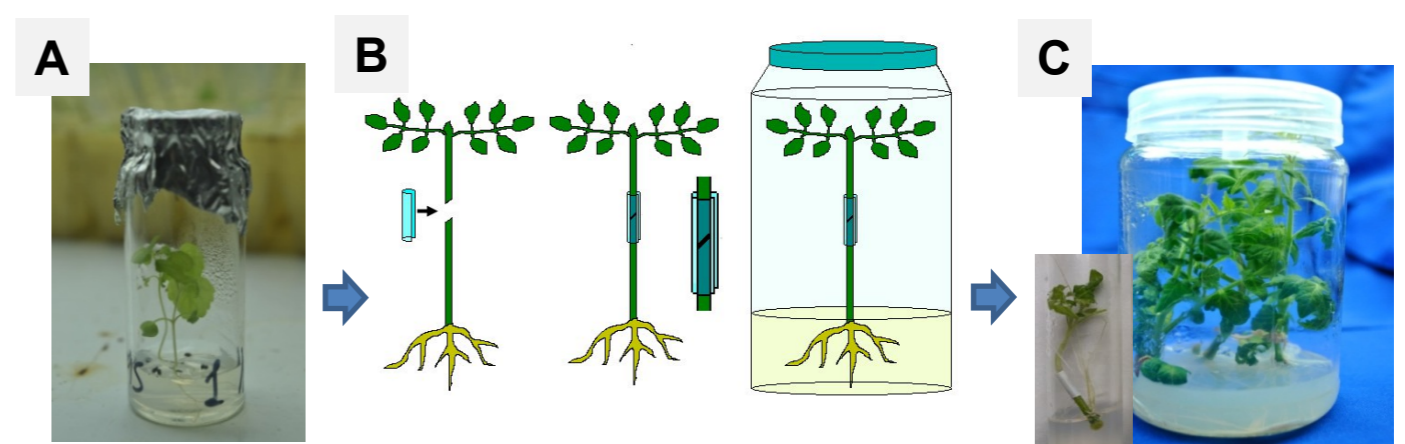➤**Nutritional medium** - hormone-free agar-solidified Murashige and Skoog medium

Fig. 1. *In vitro* micrografting and grafted plants cultivation scheme: A – seeds germination, B – micrografting *in vitro* (14-day-old seedlings), C – grafted plants cultivation (3 weeks)

RESULTS

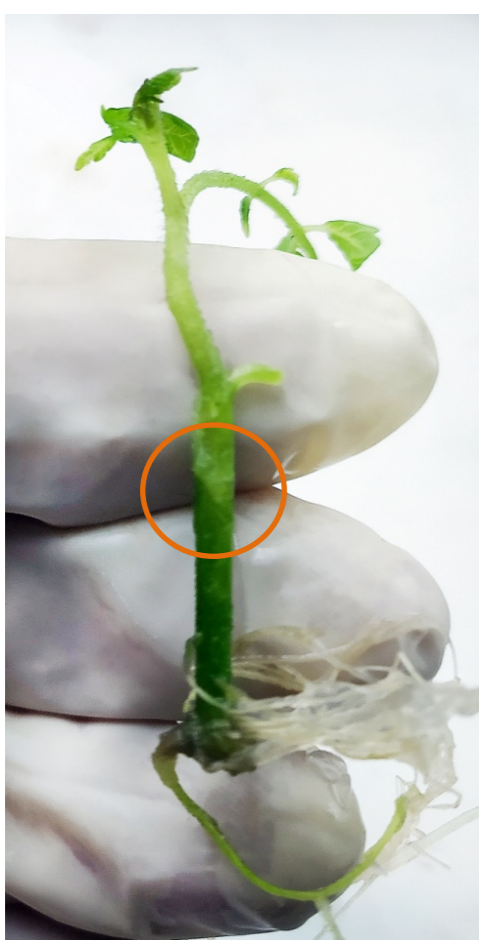Fig. 2. Graft union formation occurred within 10–14 days

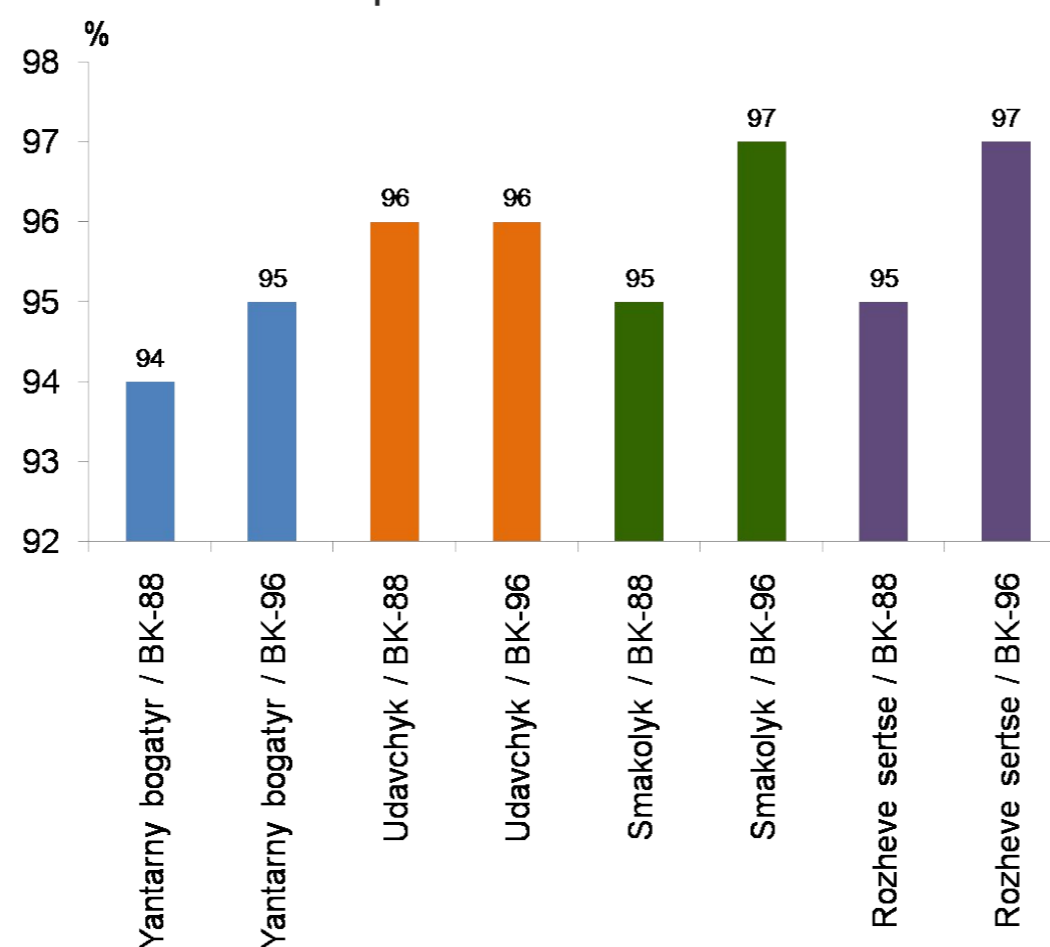Fig. 3. The survival rate of grafted plants comparable to the control 2.

Fig.4. Grafted (right) and ungrafted (left) test-tube plants of the *Udavchyk* variety

➤In all treatments, grafted plants showed slightly lower biometric values than ungrafted controls, but differences were not significant

➤ The combination *Rozheve sertse*/*BK-96* exhibited the highest relative performance (94% of control 1 shoot height, 99% leaf number, and 95% root length).

➤Between the two tested rootstocks, *BK-96* showed slightly higher grafting efficiency, although differences between variants were not statistically significant.

CONCLUSION

The research results indicate a high level of physiological compatibility between the tested interspecific hybrids and cultivated tomato varieties, supporting their potential use as rootstocks in breeding programs.