Abstract

Quality and ecologically well adapted assortment of varieties is the basis for successful production of any agricultural crop. It has been a long tradition of potato breeding at the Agricultural Institute of Slovenia. A new potato breeding programme started in 1993, when first crossings for new to potato Y virus extreme resistant varieties were made. Mass selection against potato virus Y was performed after artificial inoculation at the seedling stage, which was followed by selection for important qualitative and quantitative traits in next 10 field generations. Resistances against potato viruses Y and potato leafroll virus, against potato wart \( \text{Synchytrium endobioticum} \) (Schilberszky) Percival - pathotype D1, two species of potato cyst nematodes \( \text{Globodera rostochiensis} \) - pathotypes Ro1-Ro5 and \( \text{Globodera pallida} \) - pathotypes Pa2, Pa3] and resistance to late blight on leaves form \( \text{Solanum demissum} \) have been successfully introduced in the programme. Six new varieties Pšata, Bistra, KIS Sora, KIS Mirna, KIS Kokra and KIS Sotla had been bred since. Pšata is early maincrop variety with high yield and numerous medium sized creamy fleshed tubers and excellent consumption quality. Bistra is late high yielding variety with numerous white flesh tubers for boiling and baking, suitable for organic production. KIS Sora is excellent multipurpose salad type high yielding variety with numerous white flesh tubers for boiling and baking, suitable for organic production. KIS Sora is excellent multipurpose salad type high yielding late variety with medium sized creamy flesh tubers suitable for cold storages. KIS Mirna is early maincrop white flesh variety suitable for light sandy soils. KIS Kokra is early maincrop variety with light yellow flesh, resistant to late blight on leaves, suitable for organic production. KIS Sotla is excellent maincrop variety for deep fertile soils.

Key words: breeding, potato varieties, cold storage, resistance, PVY, nematodes, potato wart, late blight on leaves