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INTRODUCTION FROM THE EDITORS

Two volumes (75 and 76) of Plant Breeding and Seed Science consist of a collection of protocols written by the scientists of the Plant Breeding and Acclimatization Institute – National Research Institute (IHAR-PIB). Twenty five articles provide a description of the methods used in our Institute for potato research and breeding.

The first issue of the manual was published in 2001 in the *Monografie and Rozprawy Naukowe IHAR* journal (Issues 10, 10a,10b) in three languages: Polish, English and Russian. The interest in that publication was such that the edition was quickly exhausted. This fact was an inspiration for us to prepare a new and improved edition for the press. Volumes 75 and 76 comprise new protocols, which were not included in the previously published manual or include protocols published, but significantly modified in comparison to the previous version.

The volume 75 includes the methods for evaluating potato quality traits (blackspot bruising after mechanical damage and enzymatic discoloration of tuber flesh, carotenoids content in potato tubers) and allelopathic potential of potato, as well for isolating proteins from tubers and potato leaves, which have not been previously described in *Monografie and Rozprawy Naukowe IHAR*. There are also sections which focuses on potato pathogens, their identification, characteristics and maintenance of strain collections, as well as on methods for resistance assessment in potato breeding. The described pathogens include: potato viruses and pectinolytic bacteria causing tuber soft rot and blackleg disease.

The volume 76 contains protocols for potato pathogen descriptions and assessment of resistance to potato cyst nematodes (*Globodera* spp.), *Phytophthora infestans* causing late blight, *Fusarium* spp. causing tuber dry rot and *Synchytrium endobioticum* causing the potato wart disease.

This volume also includes a scheme of potato breeding using tetraploid parental lines resistant to pathogens, in which phenotypic selection is supplemented by marker assisted selection (MAS). Maturity type is one of the leading traits in potato breeding, which is difficult to assess, thus a protocol for evaluation of this trait is described.

The last part includes protocols related to the use of in vitro cultures in potato breeding (preservation of potato lines, storage of explants in liquid nitrogen and virus eradication from in vitro plants).

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Communicated by Ewa Zimnoch-Guzowska