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Comparison of five DNA extraction methods for molecular analysis of Jerusalem artichoke (*Helianthus tuberosus*)

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ABSTRACT. DNA extraction is an essential step for molecular analysis of an organism, but it is difficult to acquire a sufficient amount of pure DNA from plant tissue with high levels of phenolic compounds, carbohydrates, proteins, and secondary metabolites. Jerusalem artichoke (*Helianthus tuberosus*) has high levels of such substances. We compared five commonly used methods of extracting genomic DNA in tests made with leaves and seed of four Jerusalem artichoke genotypes: 1) modified method of Tai and Tanksley, 2) method of Doyle and Doyle, 3) method of Porebski, 4) modified method of Štorchová, and 5) Plant DNA Kit of Omega Bio-tek. The quality and quantity of extracted DNAs were assessed by photometric assay, electrophoresis on 1% agarose gel and a PCR-based technique. The modified method of Tai and Tanksley was found to be superior for both young leaves and seed. The quality of the extracted DNA was confirmed by sequence-related am-

plified polymorphism. This information will be useful for molecular analyses of Jerusalem artichoke and other related *Helianthus* species.

Key words: DNA extraction; Phenolic compound; Jerusalem artichoke

