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OPTIMIZING THE DRY PLANT SAMPLE PREPARATION METHOD FOR EFFICIENT DNA EXTRACTION IN *SYRINGA VULGARIS*

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ABSTRACT

The aim of the study was optimization of the method of DNA extraction from plant tissues. The cultivar 'Margaret Fenicia' of *Syringa vulgaris L.* species was selected as an object for DNA extraction from plant tissues. The choice of the object stems from the fact that young and old leaves and flowers were simultaneously sampled on the plant during the same growing season. Weighing was performed on a CAS CUV620HV scale with 620±0.001 g weighing limit. The greatest amount of DNA can be extracted from dry material of young leaves. Increasing the weight of the sample up to 30 mg allows a significant increase in the amount of extracted DNA. In conclusion, the degree of DNA extraction from dried young leaves when increasing the sample weight to 30 mg from the recommended 10 mg with the same volume of extracting increases by 18.82%, in dried flowers by 58.9% and in dried old leaves by 44.5%. Both vegetative and generative parts of a plant can be used as dry plant material for DNA production. The correlation between sample weight and extractable DNA for old leaves is 0.86, while the correlation between sample weight and target product when the lysis buffer is added before homogenization is -0.71. Thus, it can be confidently stated that the method of adding the lysis buffer before homogenization significantly reduces the yield of extracted DNA. This suggests that research on this aspect of the work was most likely not studied by the developers of the extraction kits.

Key words: DNA; Dry matter; Extraction; Gentics; Plant.