

DEVELOPMENT AND VALIDATION OF TITRIMETRIC PROCEDURE OF QUANTITATIVE DETERMINATION OF SUM OF ORGANIC ACIDS IN RASPBERRY LEAVES

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Introduction. Organic acids are a large group of biologically active compounds that perform important functions in plants organism. Moreover, all plants, regardless of the species and family, contain organic acids to a small or large extent as organic acids belong to intermediate metabolites arising from the oxidation of proteins and amino acids, fats and carbohydrates.

Aim. To validate the titrimetric procedure with potentiometric detection of end-point of titration of quantitative determination of free organic acids in the raspberry leaves.

Materials and methods. Leaves of raspberry were collected in the Kharkiv region during the period of full ripening. A pH-meter Hanna 2550 with potentiometric electrode HI 1131P were used for alkalimetric titration of free organic acids. Titration was carried out by microburette with a grade of accuracy A.

Results and discussion. The suggested titrimetric procedure was validated according to the International Conference on Harmonization (ICH) guidelines. The linearity was in the concentration range of 40-200% ($r^2 = 0.9991$). The percentage of recovery was found to be in the range of 98.77- 102.48%. The repeatability and intermediate precision were 1.58% and 1.74%, respectively. The procedure is accurate and reliable, having relative standard deviation of less than 2%.

Conclusions. The alkalimetry method of quantitative determination of free organic acids in the raspberry leaves has been developed and validated according to following parameters: specificity, linearity, accuracy, repeatability, intermediate precision, robustness. It has been confirmed to be simple, reliable, accurate and cost-effective.