Title Theoretical bases of optimization of the modes of postharvest treatment of alkaloid-synthesizing medicinal plants

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Abstract

The method of disks in combination with thin-layer chromatography and spectrophotometry was used for a comparative evaluation of the efficiency of different methods of fixing and fermentation of medicinal plants (leaves). Medicinal plant species capable of synthesizing alkaloids of various structural types (isoquinoline derivatives including benzophenanthridines, bisbenzylisoquinoline, quaternary protoberberines, and aporphines, as well as steroid and diterpene alkaloids) were used. The methods of fixing and fermentation were shown to exert a substantial effect on both the qualitative and quantitative composition of alkaloids. This difference in the alkaloid composition was found to represent the superposition of three independent and, to a large extent, opposite processes: catabolism of alkaloids, interaction of alkaloids with each other, and resynthesis from primary precursors. The use of different methods of fixing and fermentation provides activation or inhibition of these processes, thereby making it possible to carry out target-oriented correction of the alkaloid composition of the medicinal plants studied.