

COMPARATIVE STUDY OF THE LOCAL VEGETABLE ACTIVATED CARBON WITH COMMERCIAL ONES FOR ADSORPTION OF METHYLENE BLUE

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Abstract. Activated carbons have great applicability in the conditioning of wines: discoloration, removal of foreign taste and smell, correction of organoleptic parameters, etc. The purpose of this work was to compare the structural and sorption characteristics of local vegetal activated carbon obtained from apricot stones (AC-C, Republic of Moldova) with that of commercial activated carbons (Granucol[®] BI/GE/FA, Germany). The physico-chemical characteristics of studied activated carbons have been evaluated by standard methods (nitrogen sorption isotherms, IR spectroscopy, pH value of activated carbons suspension etc.) and the adsorption capacity by using methylene blue dye as a reference substance. Experimental data were analysed by theoretical models: Langmuir and Equilibrium isotherm models, and pseudo-first-order, and pseudo-second-order kinetic models. The adsorption capacity of the local activated carbon (AC-C, 690 mg/g) is higher by 30% than that of activated carbons from Granucol[®] series (approx. 535 mg/g).

Keywords: activated carbon, adsorption, isotherm model, kinetic model, methylene blue.

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