

PREPARATION OF GALLIC ACID FROM TURKISH GALLS BY A BIOCHEMICAL METHOD

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At the present time, efforts to obtain organic acids by the biochemical method are being greatly intensified. We have developed a method for obtaining gallic acid by enzymatic hydrolysis [1]. As the producing agent elaborating the enzyme tannase [2-4] we took Aspergillus niger strain EU-119.

The process takes place in the following way: 1 kg of comminuted Turkish galls is treated with five times the amount of water at 80°C for 2-2.5 h. The resulting mixture is cooled to 40°C, transferred into stainless steel cells to form a layer 8-10 cm thick, and seeded with spores of the fungus Aspergillus niger, strain EU-119. The mass is allowed to ferment at 35-38°C for 7-10 days, after which it is treated with 28% hydrochloric acid, boiled for 1-2 h, and filtered. The filtrate is evaporated to a specific gravity of 1.15-1.18 and left at 6-8°C for crystallization. The precipitate of gallic acid that deposits is filtered off, washed with cooled water, and recrystallized from a sixfold amount of hot water with the addition of activated carbon.

The yield of finished product is 30-35% of the amount of tannin in the raw material, which is 10-15% greater than by the current method of alkaline and acid hydrolysis [5].

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