

LYSINE DETERMINATION USING A L-LYSINE- α -OXIDASE BASED BIOSENSOR

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The use of biosensors as a tool for rapid detection of biomolecules has increased in recent times due to the ease of use and low operating costs. The results of the optimization method for the analysis of lysine in meat samples using a biosensor based on lysine- α -oxidase (LOx), in its soluble form, are presented here. The sensor detects the oxygen consumption during the enzyme reaction, the response rate is presented as a function of reaction time, once the respective slope is obtained. Michaelis constant was calculated and the linear range and response time were determined. The optimal pH was 6.6 and the optimal temperature was 37^o C. Finally, ham samples with a curing time of 10 months were analyzed by the sensor and compared to the reversed phase HPLC as a reference method. The determined lysine content ranged from 9.13 to 1124 mg/100g ham. The coefficient of variation obtained for the lysine content was around 1% when comparing both methods.

Keywords: Biosensors, lysine, lysine oxidase, soluble enzyme, oxygen consumption

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