

**TITLE:** ANTIBIOFILM ACTIVITY OF THE 4-HYDROXY-2-METHYLAZOBENZENE AZO COMPOUND ON *S. aureus* ISOLATES FROM GOAT AND SHEEP MEAT

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**ABSTRACT:**

Biofilm formation and maturation of *Staphylococcus aureus* are often identified in a wide range of food industries, constituting a potential concern for public health and food safety. Its relation with resistance to antimicrobials and sanitizers justify new studies with substances that are able to inhibit the formation of the bacterial biofilm. Azo compounds are synthetic products employed as food dyes, although its antimicrobial action has been described. Therefore, this work aimed to evaluate the biofilm formation ability by 15 isolates of *S. aureus*, as well as to identify the inhibition of the forming and established biofilm by the 4-Hydroxy-2-methylazobenzene (HMAB). The bacteria were isolated from sheep and goat meat, in the municipalities of Petrolina/PE and Juazeiro/BA. For the quantitative analysis of the phenotypic biofilm formation, the adherence test in microplate with gentian violet was employed, and the optical density (OD) was measured in an Easys® microplate reader at a 620 nm wavelength. After the biofilm quantification, the interference ability of the HMAB on biofilm formation and on the established biofilm was evaluated. In the biofilm formation tests, all 15 (100%) isolates of *S. aureus* presented biofilm formation ability, with eight (61.5%) being classified as strong producers, and seven (38.5%) as weak producers. The HMAB was able to interfere in the biofilm formation ability of eight isolates of strong-producing *S. aureus* and in the established biofilm of four (50%) of these eight microorganisms. The presence of the biofilm in the isolates demonstrates the importance of studies that identify new products able to eliminate the bacterial matrix. In this research, the compound presented antibiofilm action, being a promising preservative or sanitizing agent to be employed in the food industry.

**Keywords:** antimicrobial, meat, preservative

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