Antibacterial properties of hen egg white lysozyme against beer spoilage bacteria and effect of lysozyme on yeast fermentation

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ABSTRACT

Lysozyme has antibacterial activity against Gram-positive bacteria and has no activity against yeast. As such, lysozyme can be used for the specific inhibition of beer spoilage bacteria. After all, the most frequently identified beer spoilage bacteria are Gram-positive lactic acid bacteria, and brewers' yeast is the culture used for brewery fermentations. Hen egg white lysozyme (300 mg/L) is tested for the antibacterial activity against four described lactic acid beer spoilage bacteria in industrial pitching yeast and in industrial beer with refermentation in the bottle. The four studied lactic acid bacteria strains are sensitive to the antibacterial effect of lysozyme. The sensitivity is species dependent and probably influenced by the characteristics of the yeast slurry. The influence of industrial pitching yeast treated with lysozyme on the fermentation performance is also studied. No negative effect is observed on the yeast fermentation performance in any of the tests carried out.

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