Influence of Crosslinking Agent Concentration on The Microencapsulation Parameters of Collagen Hydrolysate-Walled Microcapsules

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***Abstract*—Despite being a lot of discussion, a large amount of chrome tanned leather is still being tanned in the world. After tanning with chrome, chrome solid leather wastes occurred. These chrome wastes arise during mechanical processes such as trimming, shaving, buffing and splitting. These solid wastes containing trivalent chromium and may be oxidized to hexavalent chromium by the appropriate conditions in the landfill areas. Increasing environmental awareness and regulations have been making great pressure on the leather industry. Nowadays, solid leather wastes tanned with chromium are assessed by hydrolysis with the enzyme in high alkaline media and can subsequently be used for several applications. However, there is still no definitive solution to these chromed solid leather wastes. In this study, microcapsules of collagen hydrolysate cross-linked with glutaraldehyde containing Lavender essential oil were prepared by coacervation method. The influence of crosslinking agent concentration on the oil load (%), oil content (%) and encapsulation efficiency (%) of lavender oil microcapsules were investigated. As the crosslinking agent concentration increased, the oil load (%) decreased but oil content (%) and encapsulation efficiency (%) of microcapsules increased. The best result obtained by using 5 g of collagen hydrolysate, 7 ml of glutaraldehyde and 7 ml of lavender oil.**

***Keywords*—Chrome, Collagen hydrolysate, lavender oil, leather, microencapsulation**

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