

## Synthesis of Beetosan's Hydrogels with Yellow Tea

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**Abstract :** The aim of the study was to select the best conditions for the synthesis of Beetosan's hydrogels with yellow tea. The study determined recipe hydrogel matrix by selecting the appropriate ratio of substrates and to investigate the effect of yellow tea, on the structure and properties of the hydrogel materials. The scope of the research included both to obtain of raw materials required for the synthesis of hydrogel materials, as well as an assessment of their properties. In the first stage of research Beetosan (chitosan derived from bees), and extract the yellow tea China Kekecha was obtained. The second stage was synthesis hydrogels modified by yellow tea. The synthesis of polymeric matrix was preparation under UV radiation. Obtained hydrogel materials were investigated extensively using incubation investigations, absorption capacity, and spectroscopic (FT-IR) and X-ray diffraction (XRD) methods. Moreover, there was also performed the surface wettability test and a photomicrograph of the structure using scanning electron microscope. Analysis of the obtained results confirms that presence of yellow tea does not significantly affect the behavior of the hydrogels in the incubation fluids. The results show that hydrogel materials exhibit compatibility with the incubatory solutions and they also retain the stability in the tested liquids. Hydrogels obtained in this method might be applied in the cosmetics industry and in the field of medicine. This is possible due to the many interesting properties of tea and biocompatibility and non-toxicity hydrogel materials. The authors would like to thank the The National Centre for Research and Development (Grant no: LIDER/033/697/L-5/13/NCBR/2014) for providing financial support to this project.

**Keywords :** Beetosan, hygrogels, materials, yellow tea

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