

Abstract

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Title of Thesis: The influence of rice extract as a new lubricant on the compressibility of microcrystalline cellulose

In this thesis the rice extract was studied as a new lubricant. Primarily its influence on microcrystalline cellulose compressibility was studied. Its effects were compared to sodium stearyl fumarate and colloidal silicon dioxide. The used lubricants were mixed with the filler in the concentrations ranging from 0.1 to 1%. The mass flow rate was evaluated in the filler itself and its mixtures. Subsequently, the tablets were made using the compression forces ranging from 2.5 to 7.5kN. The compaction process was evaluated using the force-displacement method. Furthermore, the tablet hardness, friability and disintegration time was tested.

The results showed that the rice extract can be used as lubricant for the used model filler. Unlike other evaluated glidants, it must be used at concentrations up to 0,25%. The use of higher concentrations does not improve the flow properties of tableting mixtures. In addition, material elasticity and tablet friability increases and tablet hardness decreases. On the other hand, the rice extract had much lower influence on some evaluated parameters. Even the use of 1% of rice extract did not affect some of force-displacement parameters.