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Assessment of the Effect of Cellulose-based Source on the Functional Properties of the Microcrystalline Cellulose II Allomorph

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***SUMMARY*. Microcrystalline cellulose (MCCII) as obtained from cotton has been recently introduced as a new excipient for direct compression due to its multifunctional properties. In this study, MCCII was obtained from agricultural by-products, such as corn cob, bagasse, rice husk, and cotton and the powder and tableting properties were evaluated and compared to microcrystalline cellulose I (MCCI). MCCII as obtained from bagasse and rice husk were the least porous, compressible and compactable and the most densified materials, having the best flow. Conversely, MCCI was bulky, more porous and had the largest compressibility, but a poor flow. This product also showed the best tableting properties. All MCCII products showed a higher swelling volume, lower crystallinity, less plasticity, larger elastic recovery and strain rate sensitivity, rapid disintegration and faster release of spironolactone than MCCI. The feedstock supply can be used as a source of MCCII for the manufacturing of compacts, especially by direct compression.**

KEY WORDS: Agricultural by-products, Direct compression, Microcrystalline cellulose II, Tablets, Residues.

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