

FUNCTIONAL PROPERTIES OF CORN STARCH EXTRACTED FROM FOUR VARIETIES OF MAIZE (ZEA MAYS)

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This study entails extraction and evaluation of starch from four varieties of *Zea mays*. From the results of the study, yellow maize and popcorn had higher water holding capacity than regular white maize and quality protein maize.

Starch is a polysaccharide that consists of several glucose units linked together by glycosidic bonds. What is more, all green plants use starch as an energy store, including corn (*Zea mays*). In this context, the purpose of this study was to extract and evaluate the properties of starch produced by four different maize varieties. The varieties include white maize (Wm), yellow maize (Ym), quality protein maize (Qpm) and popcorn (Pc). The process of extracting corn starch from maize involves multiple steps such as cleaning, conditioning, dehulling, etc. The functional properties and gelatinization properties of the produced starches were then analysed using standard methods. The result of the study showed that the bulk density of the starch was between 0.714-0.750, with the highest starch extracted from popcorn. The starches from popcorn and yellow maize had the highest capacity to absorb water, and the least capacity to absorb oil, respectively. Quality protein maize and regular white maize absorb more oil than other starches. In addition, the starch extracted from the four samples foamed and became unstable after more than 30 minutes. Yellow maize and popcorn starches could be integrated into the food system where higher water absorption is required, while starch from quality protein maize could be added to complementary foods where low water absorption capacity will be required.

1. Brown W. H and Pooh T. Introduction to Organic Chemistry. Third Edition. Published by John Wiley and Sons. (2005).
2. Babajide J.M, Idowu M.A. and Lasekan O.O. Nigerian food Journal 21, 23-26 (2003).