EFFECT OF COWPEA SEED DRYING TEMPERATURE AND WET MILLING ON THE RHEOLOGICAL PROPERTIES OF MOIN-MOIN PASTE AND GEL

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ABSTRACT

The effects of cowpea seed drying temperature and wet-milling on the viscosity of moin-moin paste and texture (rheology) of moin-moin gel were studied. The large brown eye Kano white cowpea seeds were soaked in water at 25°C for 5 min, drained and dried at temperatures between 30 and 120°C, decorticated and dry milled into flour. Decorticated cowpea seeds dried at 30°C were soaked in cold water at 25°C for 1.5hr and wet milled into paste. The cowpea flours and paste were reconstituted with water and prepared into moin-moin with and without addition of salt, pepper, tomato paste, onions, vegetable oil and beef flavour. Determination of the moin-moin paste viscosity prior to steaming showed that all the pastes exhibited pseudoplastic flow behaviour. The moin-moin from the wet milled paste had higher viscosity than the samples from flours due to higher swelling of the starch, protein and cell wall materials. The moin-moin pastes containing additional ingredients had higher viscosity than the plain samples due to the additional solid matter. Drying at temperatures between 80 and 120°C increased the viscosity of the plain moin-moin paste but decreased those of samples with added ingredients. Texture studies showed that drying temperature, wet milling and addition of ingredients decreased the hardness of the moin-moin gel at 50% double compression and relaxation.

Key words: Cowpea, moin-moin, viscosity, and texture