

A Dual Food-to-food Fortification with *Moringa Oleifera* Leaf Powder and *Adansonia Digitata* Fruit Pulp

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Picture 1: Baobab Fruit Pulp (BFP)

INTRODUCTION Worldwide, malnutrition is a public health issue and children are one of the most important victims (Das et al., 2013). A cost-effective and sustainable alternative could be food-to-food fortification using baobab fruit pulp (Picture 1) and Moringa leaf powder (Picture 2). What about using them together?

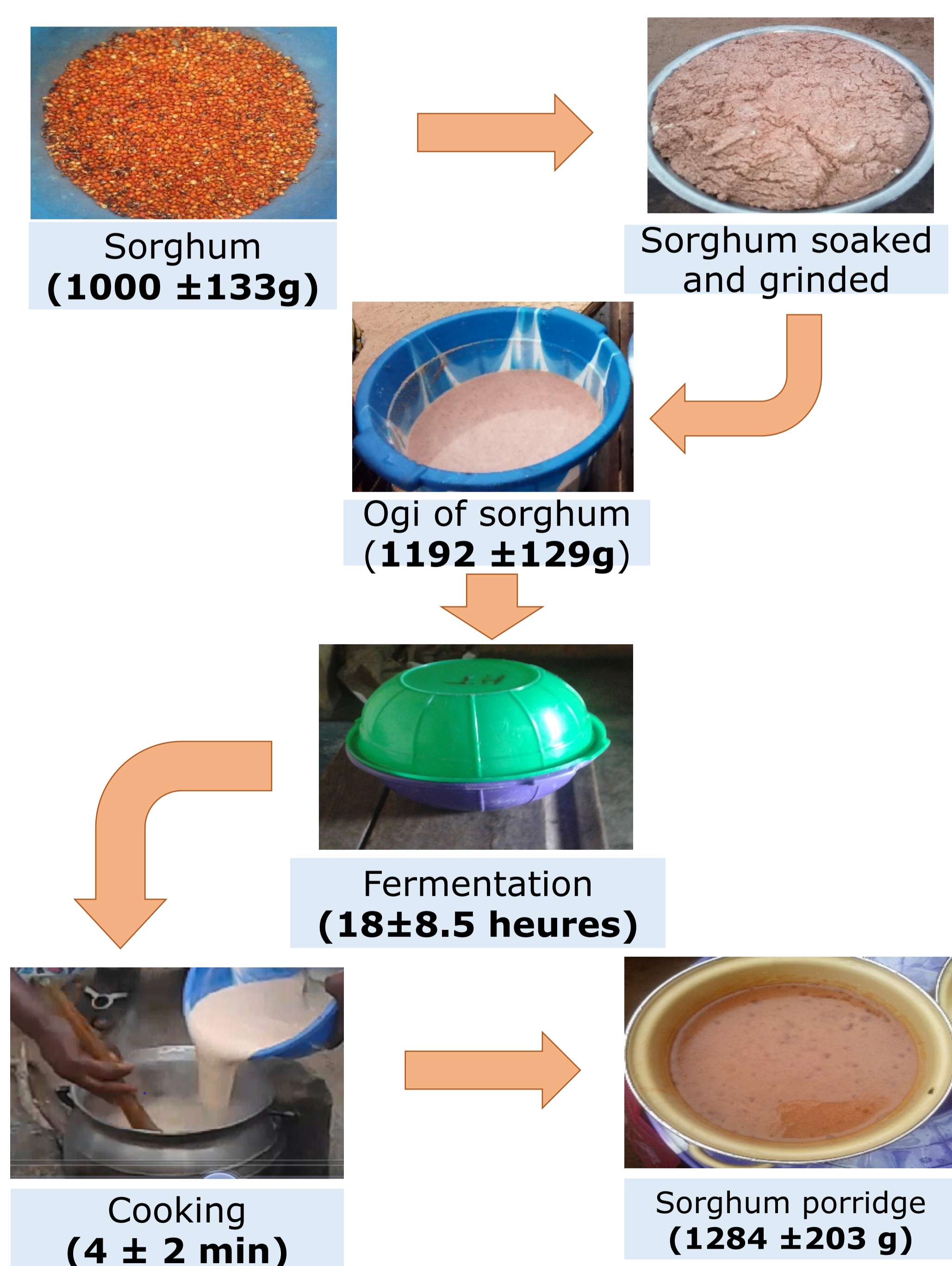


Picture 2: Moringa Leaf Powder (MLP)

OBJECTIVES (i) designing a fermented sorghum porridge dually fortified with MLP and BFP (ii) assessing *In Vitro* Solubility (IVS) of minerals

METHOD Fortification rate was defined by integrating traditional practices and literature data. IVS of the minerals was assessed using Kiers et al. (2000) method.

RESULTS The flow diagram for producing fermented sorghum porridge is presented below.



When ready, 100 g fermented sorghum porridge is mixed with 5 g of BFP and 10 g of MLP.

Characteristics of the fortified and unfortified fermented sorghum porridge

Minerals	Treatment	Unfortified	Fortified	p-value
Ca	Sorghum porridge (mg/100 g dw)	43.6±1.9 ^a	3454.5±86.4 ^b	<0.001
	IVS (%)	24.2±1.0 ^a	4.7±0.2 ^b	0.002
	Soluble Ca (mg/100 g dw)	10.5±0.0 ^a	162.2±4.6 ^b	<0.001
Fe	Sorghum porridge (mg/100 g dw)	7.3±0.2 ^a	88.4±1.2 ^b	<0.001
	IVS (%)	3.8±0.4 ^a	2.0±0.2 ^b	0.03
	Soluble iron (mg/100 g dw)	0.3±0.0 ^a	1.8±0.1 ^b	0.004
Zn	Sorghum porridge (mg/100 g dw)	88.26±3.8 ^a	202.4±3.1 ^b	0.001
	IVS (%)	0.5±0.1 ^a	2.1±0.1 ^b	0.003
	Soluble Zn (mg/100 g dw)	0.4±0.1 ^a	4.2±0.2 ^b	0.002
Cu	Sorghum porridge (mg/100 g dw)	157.6±29.1 ^a	326.8±64.7 ^a	0.078
	IVS (%)	8.4±2.5 ^a	1.6±0.8 ^a	0.068
	Soluble Cu (mg/100 g dw)	13.6±6.4 ^a	5.7±3.8 ^a	0.271

Means (±standard deviation) with the same letter on the same line are not significantly different (p>0.05); ND: Not Determined; dw: dry weight

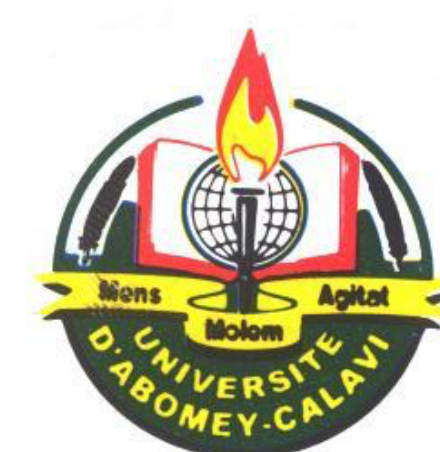
CONCLUSION Fortification of sorghum porridge with moringa leaf powder and baobab fruit pulp increase its content of minerals and soluble minerals especially for iron, calcium and zinc.

REFERENCE Das, J. K., Salam, R. A., Kumar, R. & Bhutta, Z. A. 2013. Micronutrient fortification of food and its impact on woman and child health: a systematic review. systematic review, 2, 2-24.

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