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CHARACTERISTICS OF THE CHEMICAL PHYSICAL PROPERTIES OF CASSAVA FLOUR MODIFICATION (MOCAF) WITH THE USE OF BLONDO OR VIRGIN COCONUT OIL (VCO) DREGS



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Introduction

1. Mocaf (Modified Cassava Flour) is a flour from yam that has been modified using Lactic Acid Bacteria. This flour has properties that are close to wheat flour and it is expected to replace wheat flour, especially for those who cannot consume gluten (gluten free)
2. Currently mocaf has not been as public as expected because the processing is still simple and can be done by the community industry. The effort that needs to be done is socialization to the community about the benefits of using mocaf.
3. The bacteria will be used difficult to find in the market so it becomes an obstacle by the community in obtaining it. Therefore, alternative use of other ingredients that can be used as bacteria in the manufacture of mocaf need to be found, the material is blondo or virgin coconut oil (VCO) dregs.



Introduction

4. Blondo VCO is a dreg produced in the manufacture of VCO. Mostly in community this dregs is only used as a livestock meal, even though it still contains a fairly high nutritional value. According to Harni (2008) the rendering of fermented VCO is 25,4%. The dominant lactic acid bacteria are found in blondo, namely from the genus *Lactobacillus* sp and *Streptococcus* sp (Murtius, 2008).



Material and Methods

The materials needed for the manufacture of mocaf, yam with maturity of 9 to 12 months, old coconut, BIMO starter and the materials for analysis

This research has been carried out 3 stages,

Stage 1 is the manufacture of blondo which begins with the manufacture of VCO in fermentation. The fermentation process is carried out for 3 days to get Lactobacillus (Mandei, 2015).

Stage 2 the mocaf manufacturing uses BIMO starter as standard and comparison uses blondo from VCO with various concentrations.

Stage 3 observations of the resulting mocaf include: flour pH, WHC (Water Holding Capacity), swelling, and flour whitish degree.



Result

1. pH mocaf

Average pH of mocaf

Treatments	Average pH level of mocaf
A (Without the addition of blondo)	6,43 ^a
B (5% blondo addition)	5,71 ^b
C (10% blondo addition)	5,64 ^b
D (15% blondo addition)	5,48 ^c
E (20% blondo addition)	5,44 ^c



2. WHC mocaf

Average WHC of mocaf

Treatments	Average WHC mocaf (%)
E (20% blondo addition)	231,3 ^a
D (15% blondo addition)	226,5 ^a
C (10% blondo addition)	226,3 ^a
B (5% blondo addition)	223,7 ^a
A (Without the addition of blondo)	207,7 ^a



3. Swelling mocaf

Average mocaf swelling

Treatments	Swelling Average (%)
E (20% blondo addition)	1650,33 ^a
D (15% blondo addition)	1412,33 ^a
C (10% blondo addition)	1329,33 ^a
B (5% blondo addition)	1289,33 ^a
A (Without the addition of blondo)	551 ^a



4. Degrees Whitish Mocaf

Average degree of flour whitish

Treatments	Average degree of flour whitish
E (20% blondo addition)	91,68 ^a
D (15% blondo addition)	91,64 ^a
C (10% blondo addition)	91,19 ^a
B (5% blondo addition)	91,08 ^a
A (Without the addition of blondo)	90,77 ^a



Conclusions

- a. The use of blondo as a mocaf starter can further whiten the color of the flour produced, due to the inhibition of browning in the presence of acidic blondo.
- b. Flour pH ranges from 6.43-5.44, WHC mocaf 207.7-231.3%, mocaf swelling 551-1650.33% and mocaf whitish 90.77-91.68.

