

## **Biochemical composition and mineral profile of dairy curd obtained by a plant extract of *Calotropis procera* in comparison with chymosin**

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## Introduction

Cheese is used to preserve the essential constituents of milk (protein, fat, vitamin and minerals).<sup>[1]</sup>

In West Africa, a traditional cheese named "wagashi" is manufactured using an extract of *Calotropis procera* leaves, a small latex tree



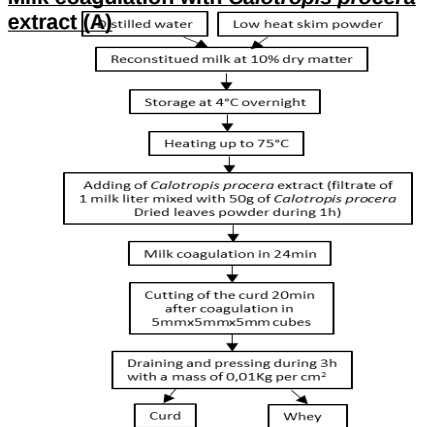
## Objectives

The aim of this work was to investigate the biochemical composition and mineral profile of curds manufactured using an extract of dried leaves of *Calotropis procera* as coagulant.

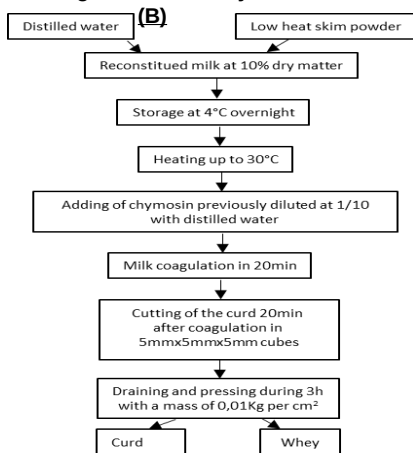
The results obtained have been compared to those of control curds coagulated using

## Materials and methods

### Milk coagulation with *Calotropis procera* extract (A)



### Milk coagulation with chymosin (B)

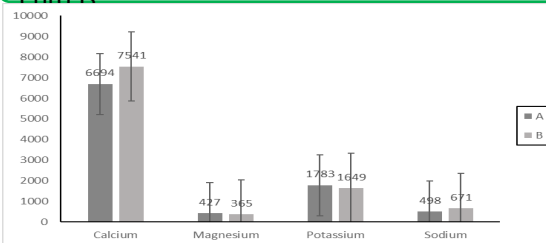


## Results and discussion

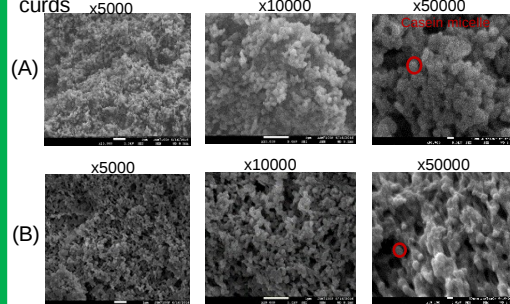
**Table 1:** Biochemical composition of processed milks, *Calotropis procera* (A) and rennet (B) curds

	A ( <i>Calotropis procera</i> )					
	pH (at 20°C)	Dry matter (g.Kg <sup>-1</sup> )	Ash (g.Kg <sup>-1</sup> )	Total nitrogen (g.Kg <sup>-1</sup> )	NCN (g.Kg <sup>-1</sup> )	NPN (g.Kg <sup>-1</sup> )
Milk	6.76±0.02	100.60±2.62	8.10±0.10	32.07±1.28	16.76±0.59	2.39±0.09
Curd	6.52±0.06	310.91±16.14	31.10±0.30	231.91±2.59	9.82±1.19	3.10±0.49
	B (Chymosin)					
Milk	6.73±0.04	100.97±0.20	8.15±0.20	33.50±0.89	17.32±1.02	2.16±0.06
Curd	6.69±0.04	305.75±9.31	25.52±1.25	207.84±16.81	7.84±1.70	1.83±0.28

The processed milks have similar composition. The contents in dry matter, ash and protein were more important in curd A than curd B.



**Figure 2:** Mineral contents of *Calotropis procera* (A) and rennet (B) curds



The protein network appeared well organized in the curd B compared to A.

Casein micelles were observed at high magnification in both curds.

**Figure 3:** Microstructure of *Calotropis procera* (A) and rennet (B) curds observed on scanning electron microscopy

## Conclusion

The curds manufactured with *Calotropis procera* extract exhibited a good content in protein and minerals. This conclusion leads to encourage traditional dairy products consumption for a good protein and mineral supplementation in populations whose diet is poor in these elements.

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