

## EFFECT OF DRYING ON THE CYANIDE CONTENT AND ITS TOXICITY IN SEEDS OF *HEVEA BRASILIENSIS*

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Oven drying of shelled whole seeds of *Hevea brasiliensis* at 60 – 180°C over 30 to 180 min resulted in reduction (8.5 to 43.63%) in cyanide content. Drying of clipped seeds was more effective. Rats fed with feed formulation containing such processed rubber seed kernels did not show any toxicity symptoms although there was increase in cyanide and thiocyanate in the blood serum and urine.

Key words: Animal feed, Cyanide toxicity, *Hevea brasiliensis*, Rubber seed.

### INTRODUCTION

The high demand for cereals as food for increasing human population have reduced its availability as feed for livestock. The search for alternate protein sources in animal feeds have led to the use of unconventional feeds (Iyaye and Iewu, 1994). These unconventional feeds include cassava peels, sorghum spent grains, wheat offal and rubber seed meal.

Rubber seeds have been used for feeding livestock including monogastric animal species (Ong and Yeong, 1977; Rajaguru and Ravindran, 1979; Nwokolo, 1987; Iy et al., 2001). One of the main constraints of rubber seed meal is its cyanogenic glycosides and cyanide content. Despite this constraint some processors of livestock feed in Nigeria are incorporating rubber seed and other cyanogenic plant materials in various animal feeds (Okafor and Nwabuko, 2003). Although cases of casualty due to livestock

with cyanogenic plant materials have occasionally been reported, the quantity of cyanogens in most of the feed materials is not determined. High levels of cyanogens in livestock feeds used in Nigeria that could cause toxicity have been reported (Okafor and Nwabuko, 2003).

The present paper evaluates the reduction cyanide during oven drying of rubber seeds at different temperatures, a processing method used for removal of cyanide from feed materials. The toxicity implication of the residual cyanide from the seeds after processing has been evaluated in rats.

### MATERIALS AND METHODS

The seeds of rubber (*Hevea brasiliensis*) used in this experiment were collected from the Rubber Plantation of Michael Okpara University of Agriculture, Umudike, Nigeria.

Fresh seeds were used as the seeds