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Differential effects on the cyanogenic glycoside content of fermenting cassava root pulp by β -glucosidase and microbial activities

[Emmanuel N. Maduagwu. Author links open the author workspace.](#)

Department of Biochemistry, University of Ibadan, Ibadan Nigeria

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Abstract

The degradation of cyanogenic glycosides was studied in spontaneously fermenting cassava root pulp and in fresh pulp samples pretreated to prevent either endogenous β -glucosidase activity, fermentation, or both. The rate of disappearance of the glycosides, as measured by hydrocyanic acid (HCN) production in situ, in membrane-sterilised media or in samples containing 1% sodium iodoacetate, was comparable with the untreated control in which 85% of the substrate was broken down within 72 h. Pretreatment of the fresh pulp with the β -glucosidase inhibitor 1,5-gluconolactone (1%) markedly reduced the rate of disappearance of the cyanogens while inclusion of glucose in this test medium at the 3% level appeared to induce some hydrolysis. Loss of bound (glycosidic) cyanide in sterilised medium containing the glucosidase inhibitor was negligible. The results suggest that the contribution of the fermentation process in cyanide detoxification of pulped cassava roots is minimal.

- **Keywords**

- *Manihot esculenta* Crantz;
- linamarin;
- lotaustralin

- **Abbreviations**

- HCN, hydrocyanic acid

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Toxicology Letters, 1982, pp. 245-248

International Journal of Food Microbiology, 2013, pp. 31-35

[Particle size distribution of hydrocyanic acid in gari, a cassava-based product](#)

Toxicology Letters, 1980, pp. 171-174

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