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A PILOT PLANT FOR THE DETOXIFICATION OF AFLATOXINS IN COCONUT OIL

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Among the methods described in the literature for the detoxification of aflatoxins in agricultural commodities, chemical refining is the only method practised commercially today, for oils. The possibility of detoxifying aflatoxins by exposing to sunlight under laboratory conditions was first shown in 1977.

A pilot plant was designed for solar detoxification of oil. This consists of eight aluminium trays placed in an overlapping cascade arrangement supported on a wooden frame. The apparatus is set at a fixed inclination. A residence time of 9 minutes and an oil film thickness of 1.0 ± 0.2 mm was maintained at a throughout of 5 litres of oil per hour.

In this plant, exposure of coconut oil on a bright sunny day for 6 minutes was sufficient to detoxify 0.1 mg/kg aflatoxins to levels below 0.02 mg/kg. Industrial exploitation of the apparatus is suggested.

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Reference

1. Samarajeewa, U., Arseculeratne, S. N., *and* Bandunatha, C. H. S. R. (1977). Degradation of aflatoxins in coconut oil and copra meal (poonac), *J. Nat. Sci. Counc. Sri Lanka*, **5**, 12.