

ABSTRACTCHAPTER 1

Initial work on the design of a microprocessor-based control system for the sun-drying of an agricultural crop is presented. Motorised roof sections for the sun-dryer model discussed, instead of the human-operated mobile type in current use was considered. Rainfall and relative humidity charts for a site in Trinidad, a humid, tropical island, were examined for rain occurrence and intensity at relative humidities of eighty percent and under. The software developed for a simple control system was tested using the Motorola 6809 microprocessor and simulated inputs.

Sun-drying of the crop takes place in a sun-dryer which makes use of direct solar radiation and air movement to achieve the drying process.

In the traditional sun-drying process, weather conditions are monitored by humans. If the rain threatens and, before nightfall, when the relative humidity is high, the crop is covered.

In this report, initial work on the design of a microprocessor-based control system for the sun-drying process in a Trinidadian sun-dryer, the "cocoa house," is presented.