

Using Regression Analysis to Model Wear in Flights in Palm Oil Mill Press Screws

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ABSTRACT

Using Rison Palm Oil Mill, Ubima in Rivers State of Nigeria as a case study, tests were conducted to generate data for modelling. Variable speed pulley systems were constructed to provide different operating speeds for the press. Flights wear rates at different press speeds and throughput capacities were measured. The throughput capacity of the twin-screw press was computed from timed samples of press cake and drained oil. Using computer regression packages, multiple regression models were formulated to determine the best wear model for the system. Multiple regression double-log model gave the best fitting curve for predicting flights wear in the system.

Keywords: Twin-screw press, wear, flights, modelling, speed; throughput capacity