

## A wear testing rig for rapid comparative evaluation of maintenance materials for some oilseed screw press components

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### Abstract

The frequent wear of worms and cage linings and the arbitrary refurbishment of these components using any of the locally available welding electrodes has limited the general performance of oilseed screw presses in Nigeria. A low cost rig, which consists of a sample-bearing piston unit, a cylinder unit and a pressure-sensing unit, was designed and developed for carrying out rapid, inexpensive comparative evaluations of the wear performance of locally available electrode fill materials, for use in the maintenance of worn-out screw press components. In addition to demonstrating the potential value of the rig for comparative wear evaluations, preliminary tests on cast iron electrode fill samples, with a palm kernel fruit oilseed meal, showed that for the same operating pressure of 13.7 MPa, increasing the test operating speed from 40 to 85 rpm led to a 12-fold increase in the wear rate of the samples.

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