

INNOVATION OF AN AUTOMATIC CHICKEN FEATHER PLUCKING MACHINE USING A LOW-POWER ELECTRIC MOTOR TO MINIMIZE OPERATIONAL COSTS

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ABSTRACT

The chicken feather plucking machine is a tool used to accelerate the feather removal process from poultry, particularly chickens, in an efficient and hygienic manner. In practice, the machines commonly used tend to have high electricity consumption, which leads to increased operational costs especially for small scale businesses such as local poultry sellers. This research aims to design and develop an automatic chicken feather plucking machine that is energy efficient by utilizing a single-phase AC electric motor with lower power consumption. The development process employed an experimental method through stages of needs identification, mechanical and electrical design, and performance testing. The results show that the machine operates effectively with significantly reduced power consumption compared to conventional machines. It can also pluck chicken feathers in a relatively short time with a high level of cleanliness. Therefore, this automatic feather plucking machine is expected to be a practical solution to support micro-enterprises in the poultry processing sector.

Keywords: chicken feather plucking machine, energy efficient, single phase AC motor, automation, electrical efficiency.