

Design, construction and testing of an optical device for the determination of egg fertility.

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Abstract

This study reports the design, construction and testing of an optical device to determine the fertility of poultry egg at early age. The device consists of optical components such as condenser lens, objective lens, eyepiece lens and a source of light, all encased in a wooden frame. It has a total length of about 1m and produces an inverted image with a magnification of 5.02. The internal structure of the egg could be viewed with the naked eye through the eye piece. The device was tested using ten (10) incubated eggs for 7 days. Result showed that the device could detect fertile eggs within the first three days of incubation. This device therefore has an advantage over the conventional candler which could detect fertile eggs between the fifth and seventh day and is recommended for egg candling in the poultry industry.

Keywords

Candling, Fertility, Optics, Device, Poultry.