



The smart brooder is equipped with 3-5 sensors placed inside the brooding space to monitor temperature, humidity, and air quality for chicks. Photo Credit: Zablon Oyugi

Smart brooders transforming chick rearing business

By Zablon Oyugi

THE business of brooding and selling chicks is picking up rapidly among the small and medium scale poultry farmers in Kenya.

Unlike hatcheries, brooding does not need permits and expensive facilities to run.

However, the poultry farmers still face some challenges, including maintaining the optimal conditions of temperature and humidity within the brooding unit for the chicks to feed and grow.

Most farmers use charcoal stoves which can be cheaply available and affordable as compared to electricity and solar power.

One has to physically monitor the brooding unit even if it means waking up in the middle of the night to replenish the heat something that can be risky for the fragile hatchlings thus increasing their mortality rate and lowering the venture's profitability.

But with the current technological advancements, a farmer can actually monitor the brooding unit from anywhere and at any time and make the required changes to ensure chicks' survival and growth.

With a smart brooder, which acts like a patented digital mother hen, farmer can not only improve the efficiency of the brooding unit

but also the profitability of the business.

Smart brooders are equipped with sensors placed inside the brooding space to monitor temperature, humidity, and air quality for chicks.

According to George Chege, the CEO and ICT expert at Arinifu, a technology company based in Nairobi which specialises in making smart brooders and other digital applications for poultry management, the new technology can relay a real-time information to the farmer through short message service (SMS) hence ensuring farmers of peace of mind all time and income.

"You can imagine the sleepless

nights and the bother a farmer can endure to ensure the brooder temperatures are at optimum levels by using charcoal stoves or jikos. This can be guesswork as it is hard to regulate the temperature effectively leading to high death rates,” said Mr Chege.

With the smart brooder, he says, a farmer is able to monitor temperature and humidity real time and receive SMS updates. It also has automatic temperature control based on the age of chicks, black-out system notification and vaccination programme reminder. How the smart brooder works

The smart brooder is equipped with 3-5 sensors placed inside the brooding space to monitor temperature, humidity, and air quality for chicks.

“The sensors are a number of wires around the brooding space, some white and some black, all attached to a small black box which is a small computer that processes and sends the necessary information to the farmer,” said Mr Chege.

The black cables are temperature sensors which read the temperature

and automatically control a red infrared bulb keeping the temperature at 31-35°C, the best levels for the chicks, while white cable is a humidity sensor.

The data collected by the sensors is processed through an algorithm and machine learning, automatically turning equipment on and off the system based on the chicks’ age and breed to ensure optimal conditions for their growth and bird comfort.

“Currently, it can control infrared lamps, solar PTC heaters, LPG/Biogas heaters and fans to meet heating needs. The device communicates with the farmer via SMS, providing updates and alerts when necessary,” said Mr Chege.

All this is made possible thanks to an intelligent computer software incorporating algorithms and machine learning which makes use of the data received from the sensors to turn heaters on or off based on the temperature conditions ensuring chicks receive the exact amount of heat required.

“Farmers can save on heating costs and reduce the death of chicks and

gain more than 98% survival within the brooder in addition to chicks a more uniform growth rate so that not many are very big while the rest are small,” said the ICT expert.

He adds that temperature is also directly related to the amount of feed chicken consumes. “When it is cold, they tend to eat more as they try to generate internal heat making the feeding costlier compared to when it is hot thus a farmer can save 25kg of feeds translating to Ksh1,500 of savings per season.” Another feature of the device is vaccination reminders which help a farmer keep track of all vaccination needs.

Mr Chege says the mortality rate while using the smart brooder is only 1-3 percent during brooding. “This is one of the main benefits of the smart brooder, because a farmer can lose up to 44 percent of their chicks while using traditional methods,” he says.

It comes in different designs depending on the number of chicks that a brooding space can accommodate. There are brooders for 100, 200 and 300 chicks with different prices.



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