



Adoption of Innovative Egg Laying Cabin for profitable Layer Farming in West Jaintia Hills District of Meghalaya

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Abstract

Cannibalism is a major problem faced by the poultry farmers particularly the layer farmers causing huge loss. To address this problem, a trial on construction of the egg laying cabin has been purposively conducted in all the 3 blocks i.e., Amlarem, Laskein and Thadlaskein of West Jaintia Hills district with a total of 50 farmers. This is the first farmer's innovative technology in poultry farming to be taken up as a trial on a large scale in the district. After adopting this technology, it was found that there is an increase of up to 48.48% of egg production at Thadlaskein Block, 46.66% at Laskein Block and 48.14% at Amlarem Block. Mortality of birds were also reduced to 1 number at Thadlaskein Block, 6 numbers at Laskein Block and 10 numbers at Amlarem Block which was otherwise 15, 18 and 21 numbers in all the three blocks respectively. There was also an increase in income in comparison to farmers' practice with a benefit cost ratio of 2.16, 2.05 and 1.94 at Thadlaskein Block, Laskein Block and Amlarem Block respectively.

Keywords: Cannibalism, Egg Laying Cabin, vent pecking, innovative

Introduction

Layer farming with BV-380 variety of layer birds is growing at a much faster rate in West Jaintia Hills District due to the increasing demand of eggs. During the past few years, it has been observed that there has been a huge demand of

eggs by the local consumers. However, the poultry farmers could not meet the demand of eggs due to some constraints faced by them while rearing layer birds thereby hindering the growth of this enterprise. Profitable commercial layer farming in the north-eastern region depends on careful resource allocation, availability of skilled farm workers, and suitable positioning of locally

produced farm egg in the market from that of eggs coming from outside the .One of the major constraints faced by the farmers rearing layer poultry birds is the high mortality rate due to cannibalism in the form of vent pecking which eventually leads to egg breakage and also soiled eggs thereby incurring huge loss to the poultry farmers. Cannibalism may be divided into vent pecking and cannibalism affecting other parts of the body, the former is independent of feather pecking and the latter, though usually preceded by feather pecking (Jean Allen & G.C. Perry, 2007). Many measures have been taken up like calcium supplementation, debeaking, using red bulbs etc but this could not provide a permanent solution to the problem. For a long-term solution to this problem, KVK Jaintia Hills, Meghalaya has conducted a trial on adoption of the innovative egg laying cabin at the farmer's field.

Methodology

The study was conducted at 3 blocks i.e., Amlarem, Laskein and Thadlaskein of West Jaintia Hills District of Meghalaya from the year 2020 up to 2023. Initially for 2 years it was taken up as an On Farm Testing (OFT) which was later taken up as Fron Line Demonstration (FLD) for another 2 years for large scale adoption. In each block, 15 numbers of farmers were selected who rears layer birds (BV-380 variety) with a total number of 50 birds and the same has been compared with the farmer's practice. Under farmer's practice, the birds would normally lay eggs on the floor or on some baskets which were locally made. Whereas under the technology, the poultry shed has been attached with a cabin of 1 foot in length and height of 8 inches attached to the wall of the poultry shed and 4 inches to the opposite side of the wall. An opening of size 190mm x 90 mm x 90 mm is made at the wall of the poultry shed at 3 feet between each opening. These openings are mainly an entry and exit gate for the poultry birds. These openings are usually closed using a wooden structure up to the age of 4 months of the birds. The wall of the cabin can be constructed using bricks or cemented blocks and the shutter or the door of the cabin can be constructed using wooden planks below covered

with tin sheets. It is very important to extent the overhang of the roof by 2 feet and it is better to construct the cabin on the side of the poultry shed rather than the front or backside. The data recorded were taken as per the average of all the units in the respective blocks.

Results and Discussion

From the study, it was found that at Thadlaskein Block after the intervention of the technology, there was 48.48 % increase in egg production i.e. 14112 numbers as compared to the farmer's practice of only 9504 numbers. There were no cases of egg breakage. There were 37 numbers of soiled eggs, and 1 case of mortality of birds as compared to farmer's practice of 467 breakage, 1240 soiled eggs and mortality of 15 birds. At Laskein Block, there was an increase of 46.66% in egg production i.e. 12672 numbers as compared to farmer's practice of 8640 numbers. There were reports of 2 breakages of eggs, 39 numbers of soiled eggs and 6 cases of mortality due to cannibalism. Amlarem Block, saw a 48.14% increase in egg production i.e. 11520 numbers of eggs after adoption of the technology as compared to farmer's practice of only 7776 eggs. Numbers of egg breakage were 540 eggs and 1265 soiled eggs. Mortality was reduced to 10 numbers as compared to a whopping 21 numbers in farmer's practice.

In comparison to all the 3 selected blocks, it was observed that the egg production was highest at Thadlaskein Block as compared to the other 2 blocks. This is due to the reason that the mortality rate of the layer birds is less since most of the farmers in this block are progressive farmers who would take up layer farming in a scientific manner following all the technical know-how of the technology as per the skills provided by KVK Jaintia Hills regarding the adoption of the technology.

From the table below, it was observed that in all the 3 selected blocks in West Jaintia Hills District, the mortality rate was comparatively high as compared to the results before the intervention of the technology. The low rate in egg production was caused due to vent pecking especially during the laying period which usually begins right from

the age of 5 months old when the hen starts laying egg where a similar result was also found by Gilani (2013), the vent turns reddish in color attracting the other birds in the shed to peck till the extent that the feathers and most of the cases the intestines and other offal were seen protruding outside. Besides pecking of vent, the birds were sent breaking the eggs by pecking with their beak and this leads to egg breakage especially in housing system where there are scattered feeding and improper laying spaces as supported by Lambton (2023) in his study on vent pecking and free-range and organic laying hens. Despite various practices like debeaking, proper lighting management, calcium supplement etc., the solution was for a very short period. It was only after the adoption of the egg laying cabin that there could be a final solution to the problem also considering that this was the first farmer's innovation from Meghalaya to be approved as a technology to be taken up for both on farm testing and frontline demonstration by ICAR, New Delhi during the Farmers Innovators Meet held at Gangtok, Sikkim during the year 2018. This

technology also helps in production of clean eggs free from poultry litters because the birds would enter inside the cabin and lay eggs in a clean environment and come out quickly as the space inside was constructed with such a measurement that the birds could not sit for long inside. Whereas, in normal rearing system without proper laying boxes, the birds would defecate on top of the eggs thereby making it dirty allowing easy entry of microorganisms inside through the shell. This would further reduce the cost of the eggs and reduces its shelf life. The other advantage of this technology was that the farmers don not need to enter the shed very often for collection of eggs since the eggs could be easily collected from outside from the cabin. This will also prevent entry of viral and bacterial diseases in the farm through direct contact with the farmer. Another important finding was that the egg laying cabin was constructed mainly involving the behavioral characteristics of poultry birds where it was found out that the poultry birds normally like to lay their eggs on a dark hidden place to hide their eggs from predators.

Table 1. Technical parameter of the technology

Name of the block	Results of parameters assessed		
Thadlaskein	Parameters	Before intervention	After intervention
	Egg production	9504	14112
	Egg Breakage	467	0
	Soiled eggs	1240	37
	Dead due to cannibalism	15 (out of 50 birds)	1
Laskein	Egg production	8640	12672
	Egg Breakage	487	2
	Soiled eggs	1322	39
	Dead due to cannibalism	18 (out of 50 birds)	6
Amlarem	Egg production	7776	11520
	Egg Breakage	540	3
	Soiled eggs	1265	45
	Dead due to cannibalism	21 (out of 50 birds)	10

From Table 2 below, it was found that in Thadlaskein there was an increase of 63.12% of gross income, 44.77% in Laskein Block and 54.36% in Amlarem Block with a benefit cost ratio of 2.16, 2.05 and 1.94 respectively. The result below depicted the highest increase in income from Thadlaskein Block. This is due to

the reason that in this block as mentioned earlier, there were a greater number of farmers who have taken up commercial layer farming as a business model and since the inception of this technology, there were less numbers of egg breakage, less mortality due to cannibalism and increased in egg production in this district.

Table 2. Economical parameter of the technology

Name of the block	Results of parameters assessed		
Thadlaskein	Parameters	Before intervention	After intervention
	Gross Cost (Rs/unit)	78176	80948
	Gross Return (Rs/unit)	107540	175420
	Net Return (Rs/unit)	29364	94472
	B:C Ratio	1.37:1	2.16:1
Laskein	Gross Cost (Rs/unit)	75252	76638
	Gross Return (Rs/unit)	108800	157520
	Net Return (Rs/unit)	33548	80882
	B:C Ratio	1.44:1	2.05:1
Amlarem	Gross Cost (Rs/unit)	72328	73790
	Gross Return (Rs/unit)	98060	143200
	Net Return (Rs/unit)	25732	69410
	B:C Ratio	1.35:1	1.94:1

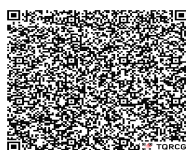
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