POS -42

Economics of Production of Freshly Hatched and Transported Broiler Chicks to Six Weeks after Delayed Feed and Water Startment Periods

P.C. Ukwu, I.P. Ogbuewu, M.C. Uchegbu and I.C. Okoli
Department of Animal Science and Technology, Federal University of Technology Owerri, Nigeria
Corresponding author: P.C. Ukwu, E-mail: chikodiliukwu@gmail.com

Abstracts
One hundred and twenty (120) broiler chicks were used in a field experiment to determine the economics of production of freshly hatched and transported broiler chicks to six weeks after delayed feed and water startment periods. Sixty (60) of chicks were sourced from local hatchery in Owerri on the morning of their hatch (Group 1), while another 60 chicks also were sourced from Ibadan, about 600 Km from Owerri (Group 2). Each group was divided into 4 sub-groups of 15 chicks each and replicated thrice, with 5 chicks per replicate, in a Complete Randomized Design (CRD). Feed and water were given to the control A_1 (Group 1) on the day of hatch, while the control A_2 (Group 2) were fed 36 hours post hatch on arrival. Other sub groups B, C and D of the two groups were started on feed and water at 48, 72 and 96 hours post-hatch respectively. The total cost of production for the freshly hatched chicks was N30907.00, while that of transported was N32584.00.Thirty four birds were harvested from the freshly hatched group, while 31 birds were harvested from the transported group. Transportation stress and early feed and water denial to the broiler chicks result in huge economic losses from poor productivity and high mortality, especially when coupled with prolonged starvation.

Keywords: Broiler day old chicks, feed conversion ratio, transported chicks

Introduction

Obviously, poultry production in Nigeria has proved to be a prime source of animal protein and enterprise for employment and income generation (Sonaiya, 1999; Oyesola and Olujide, 2000). Unfortunately certain production factors militate against the realization these economic goals of poultry farmers. For example, day old chicks may be transported in vehicles poorly conditioned for the purpose for more than 600 km from hatcheries located in southwest Nigeria to the rearing farms in Imo state in southeast Nigeria, usually without feed and water for up to 2 days in exceptional cases. This journey has been known to take its toll on the livability of the chicks thus inflicting heavy losses in form of poor viability and high mortalities of the DOC with the attendant economic losses to the poultry farmer (Okoli *et al.,* 2005; El-Hussein *et al.,* 2008).There is therefore the need to determine the actual economic implications of the combinations of factors such as transport stress and delayed feed and water startment to the farmer.

This paper discusses the economics of production of freshly hatched and transported broiler chicks to six weeks after delayed feed and water startment periods.

Materials and Methods

The study was conducted using 120 day old broiler chicks of the Marshal strain. The chicks were randomly divided into two broad groups of 60 chicks each. Group II was sourced from a hatchery located in Ibadan, Oyo state, western Nigeria, while Group I was sourced locally from a hatchery located in Owerri. Each group was subdivided into 4 sub-groups of 15 chicks each and replicated thrice, with 5 chicks per replicate, in a Completely Randomized Design (CRD). The experimental design was represented in table 1.

The birds were fed a commercial broiler starter ration (Vital Feed®, Grand Cereal and Oil Mills Limited, Jos) containing 21% crude proteins, 8.5% fats, 1.2% calcium, 0.45% available phosphorus and 2800 kcal/kg metabolizable energy as claimed on the product label. Water and feed were offered *ad libitum*, and the routine management procedures of the Federal University of Technology Owerri Teaching and Research Farm were adopted. The experiment lasted for six weeks (42 days). Readings were taken on the Feed intake, weight gain, feed conversion ratio, mortality and viability.

The economics of production were determined using essential data such as total cost of birds, cost per chick, total management cost, mortality cost, cost of feeding per chick, total cost per chick and total cost of production.

Table 1: Experimental designs

Groups	Periods of feed and water Startment			
	A(control)	B	C	D
Group I Chicks from Owerri	Started on day of hatch	Started 48 hours post hatch	Started 72 hours post hatch	Started 96 hours post hatch
Group II Transported Chicks from Ibadan.	Started on arrival (36 hours post hatch)	Started 48 hours post hatch	Started 72 hours post hatchhatch	Started 96 hours post

Results and Discussion

Tables 2 and 3 showed respectively the cost of raising the freshly hatched and transported birds up to six weeks of life. The cost of chicks were uniform (N2700.00) across the groups of freshly hatched chicks. The transported groups each attracted extra cost of N126.00 per group as transportation cost from western Nigeria to the Eastern City of Owerri. The cost per group therefore became (N2826.00). Management cost was N2000.00 across the whole groups. The total mortality cost was N6050.00 for the freshly hatched group, while that of the transported groups was N7110.00.

Table 2: Economics of production of freshly hatched broiler birds to 6 weeks after delayed feed and water startment periods (48 – 96 hours)

Parameter	Control (A)	$B_1C_1D_1$	Total (N)			
TotalCost of birds		N2700.00	N2700.00	N2700.00	N2700.00	N10800
Cost per chick		N180.00	N180.00	N180.00	N180.00	N10800
TotalManagementCost		N2000.00	N2000.00	N2000.00	N2000.00	N8000
Mortality cost		N0.00	N400.00	N2720.00	N2930.00	N6050
Cost of feeding perChick		N530.03	N471.46	N435.10	N259.83	--------
Total cost per chick		N843.36	N805.30	N1115.10	N1106.49	--------
Total cost ofproduction		N12650.40	N10468.90	N4460.40	N3319.47	N30907

Table 3: Economics of production of transported broiler birds to 6 weeks after delayed feed and water startment periods (48 – 96 hours)

Parameter	Control (A_2)	B_2 C_2 D_2	Total (N)			
Cost of chicks		N2826.00	N2826.00	N2826.00	N2826.00	11304
Cost per chick		N188.40	N188.40	N188.40	N188.40	11304
Management cost		N2000.00	N2000.00	N2000.00	N2000.00	8000
Cost of mortality		N400.00	N960.00	N2000.00	N3750.00	7110
Cost of feed/chick		N558.00	N498.06	N455.06	N0.22	-------
Total production cost/Chick		N900.24	N868.27	N929.17	----------	-------
Total cost ofproduction		N11703.12	N9550.97	N6504.19	N4826.22	32584

The total cost of production for the freshly hatched chicks was N30907.00, while that of transported was N32584.00. Thirty four birds were harvested from the freshly hatched group, while 31 birds were harvested from the transported group. These results agree with earlier report of El-Hussein *et al*. (2008.) that delayed access to feed for 1-2 days impairs post hatch growth, overall growth and ultimate meat yield and may result in mortality of the chicks. Appropriate feed and water treatment on the other hand, results in the GIT weight increasing more rapidly in relation to the body weight and other organs and tissues(Noy and Sklan, 1998),thereby helping the bird to attain more efficient feed utilization early in life.

Conclusion

Transportation stress and early feed and water denial to the broiler chicks result in huge economic losses from poor productivity and high mortality, especially when coupled with prolonged starvation.

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