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RESEARCH PAPER

Evaluation of MKV's developed deep litter type poultry house

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ABSTRACT

A low cost poultry form has been designed and developed at Marathwada Krishi Vidyapeeth, Parbhani. Their evaluation has been done on actual field condition. From three year survey work it was observed that developed deep litter poultry house for 100 birds found in good condition, durable, profitable and suitable for all type climate. It is suitable for landless, marginal and small land holding farmer as a supplementary income.

KEY WORDS : Low cost poultry house, Landless, Marginal farmers, Small land holding farmers

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INTRODUCTION

A good poultry house protects the birds from weather, predators, injury and theft. Comfort, protection and convenience are three major and essential requirements for construction of good poultry house. Low cost poultry house seem to be built in almost every possible shape and size. A poultry house is not complete without the accessory equipments. On commercial basis production of hens and eggs done on a large size, deep litter poultry structure which are not suitable for small and marginal farmers which requires more cost of construction and more management. To minimize the cost of construction of poultry houses there is need to change the material of construction which is available easy locally. Considering these points Marathwada Agricultural University, Parbhani developed one low cost poultry house.

Many scientists have worked to improve the performance and economics of poultry house throughout the world. Ahuja and Sen (2007) reported that rapid economic growth and urbanization in developing countries has resulted in fast expansion of industrial large scale, vertically integrated, poultry productions units opportunities have also expanded for low cost poultry enterprises due to improved market access infrastructure that might still favour free range birds and eggs. As a result, there has been increased market orientation even among low cost poultry enterprises. These changes have brought large and small production system created both challenges and opportunities. Branckaert (2006) reported that nature of low cost poultry production across nations brings together some evidence on viability of low cost poultry production in wake of expanding large scale production with substantial economics of scale, well organized and integrated supply chains and ability to respond to various types of risks. Rushton *et al.* (2005) provided some figures on approximate proportion of total poultry population made up by birds kept under low cost family production system. Riise *et al.* (2005) estimated monthly income level from poultry among household to be around 200-250 taka in Bangladesh. They further note that this average nominal figure has been constant during almost a decade, indicating that real income from poultry has fallen over time. They observe that with relatively. Smaller holder poultry farming is mainly attractive to people with low opportunities costs *i.e.* those who have limited opportunities for alternative income streams. Robert (1995) argues that starvation associated with dwindling biomass availability in villages is an important factor contributing to poor growth and survival in low cost poultry. Similar arguments and results have been

put forward by Sarkar and Bell (2006). Other reasons for low production include management system.

EXPERIMENTAL PROCEDURE

Study area :

The study area falls under semi arid tropic climatic condition. The area is bounded by longitude 76°47'E and latitude 11°36'N. The average rainfall is 892mm per annum. The mean daily maximum temperature at Parbhani ranging from 44°C during month of May and lowest 11°C during December.

Housing is a capital investment in poultry farming; hence economy must be kept in mind while providing housing. Housing must protect birds from climatic factors such as sun rays, rain and from predators like dogs, cats, rodents etc. An east-west directed house is the best choice for orientation in India for saving birds from adverse effect of weather like wind and sun rays. Other points such as exposure, soil drainage and floor space requirement should be taken into consideration while constructing a poultry house.

Construction details of M.K.V. low cost poultry house :

A low cost deep litter poultry house structure for 100 birds was constructed at Department of Animal Husbandry and Dairy Science, M.A.U., Parbhani having size 3.15×3.65×2.50 m (Fig. A and B). Quantity of construction material and dimensions are given in the Table.A. A total of 81 units of poultry houses were designed, developed and distributed in Karmad cluster of Aurangabad district for evaluating its performance under actual field condition. This cluster includes seven villages named as Karmad, Tongaon, Bhambarda, Dudhad, Satana, Jadgaon and Hiwra. Regular survey was conducted at the distributed places for a period

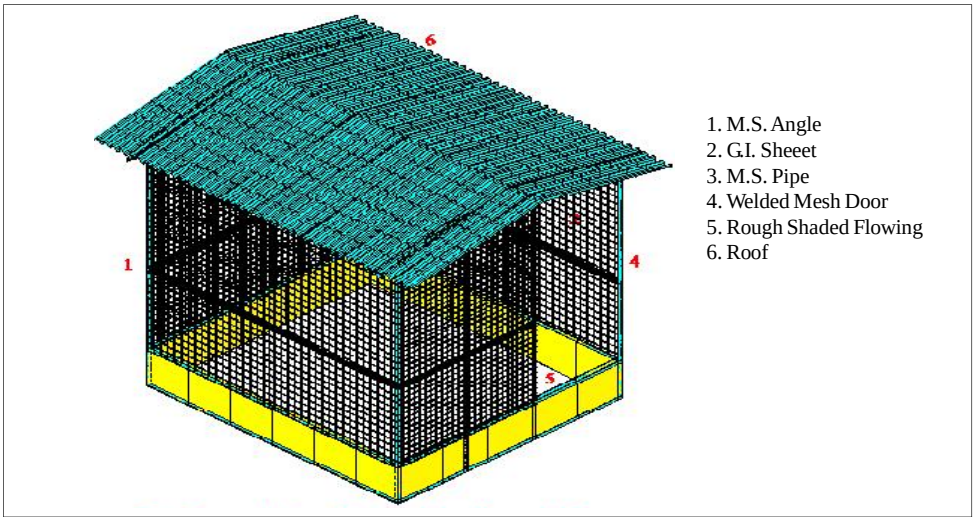

Fig. A : 3D view of poultry farm

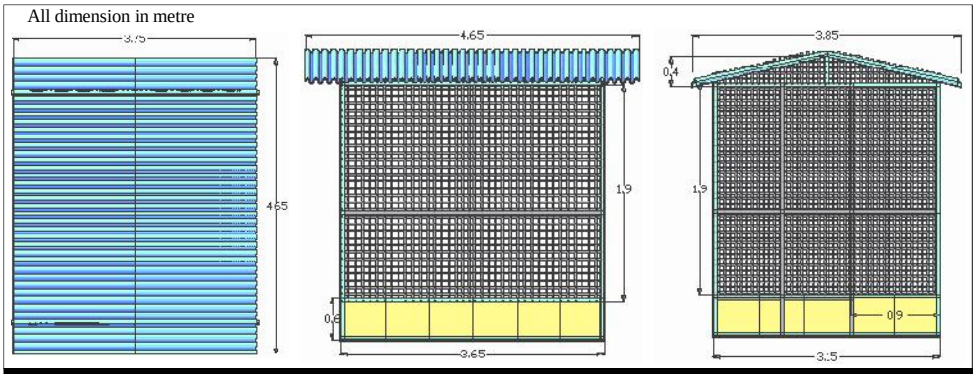

Fig. B : Schematic view of poultry farm

Table A : List of material required

Sr. No.	Item	No	L	B	D	Quantity (LxBxD)
1.	Excavation in soft soil	9	0.45	0.45	0.45	0.820125
		1	17.3	0.45	0.45	3.50325
						4.3233
2.	PCC 1:3:6 in foundation	9	0.45	0.45	0.45	0.820125
3.	Murum filling in plinth for flooring	1	3.65	3.05	0.3	3.33975
	50% for unevenness 3.33975 x 0.15 =					1.669875
	Add surrounding	1	15	0.3	0.2	0.9
						5.909625
4	Providing rough Shahabad for	13.65+	3.65 3.65+	3.05 3.05=	--13.4	11.1325
	flooring perimeter for side	1	13.4	0.6		8.04
						19.1725
5.	G.I. Sheet for top	1	4.6	4.5	--	20.7
	Ridges	1	4.6	0.75	--	3.45
						24.15
6.	Welder mesh	1	13.4	1.9	--	25.46
	Triangular	1	2	3.05	0.5	1.525
						2.985
7.	Structural steel					
	Pipe vertical corr	4	2.95=	11.8m	3.15=	37.17 kg
	Pipe verticals	4	2.35=	9.4m	3.15=	293.61 kg
	Cen	4	4.65=	18.6m	3.15=	58.59 kg
	Purlin	2	6.75=	13.5m	3.15=	42.525 kg
	Trusses	2	13.4=	26.8	5.07=	135.876 kg
	Angle 35x35x6		12.4=	12.4m	5.07=	62.868 kg
	Angle for mesh fitting width			6.0 m	1.8=	10.8 kg
	Angle for door frame 30x30x4					12.6 kg
	Angle for door shutter 2V and 3H					
	Angle for bracing	2	1.4=	2.8m	1.8=	5.04kg
	Cleat angles 35x35x6	8	0.1=	0.8m	5.07=	4.056kg
						399.135
						0.399135
8.	Hinges, handles, aldrops, tower bolt	--	--	--	--	L.S. job work

of three years (2010-11, 2011-12 and 2012-13). Questioners were done with the beneficiaries and respective data were collected. List of material required for construction is presented in Table A.

EXPERIMENTAL FINDINGS AND ANALYSIS

The direction of poultry house was kept east- west side which protect birds from adverse effects. Location of poultry house was nearer to house. Almost all poultry houses faced south or east direction for getting maximum sun light in the morning time so the birds gets energetic. The location of poultry house was on sloping land. Foundation and other metalic structure of poultry house was found in better condition even after passing of three year. Floor of the poultry house was found comfartable for a birds. It doesn't affect on growth and feed efficiency.

The wall made from shahabadi stone and welded mesh also height observed was 2.5 m at side and 2.91 m at center of the shed. Width and length was observed satisfactary for 100 birds in poultry house. Total cost for the year 2010-11, 2011-12 and 2012-13 were evaluated by considering cost of feed, labour charges, vaccination charges and transportation charges. From the Table 1 it is observed that maximum average profit obtained in three year to farmer (*i.e.* Hasan Ba latif Shaha of village

Table 1 : Summary of Income and expenditure

Sr. No.	Nam of farmer	Village	Year 2010-11		Year 2011-12		Year 2012-13		Total		Net profit (3 year)	Expenditure/ year	Profit/ year
			Income	Expenditure	Income	Expenditure	Income	Expenditure	Income	Expenditure			
1.	Hasan Ba latif Shaha	Satana	99180	47600	82365	38400	88502	46650	270047	132650	137397	44217	45799
2.	Bashir shaha Rajak shaha	Satana	68400	35700	79240	38400	59200	31100	206840	105100	98740	35034	32914
3.	Gautam Sitaram Jagdhane	Satana	63525	35700	79200	38400	92021	46650	234746	120750	113996	40250	37998
4.	Munnabai Dadabhai	Satana	67338	35700	76720	38400	87516	46650	231574	120750	110824	40250	36942
5.	Ajit Akbar shaha	Satana	64054	35700	78400	38400	54482	31100	196936	105200	91736	35067	30579
6.	Usha Prabhakar Phofle	Bhambarda	66240	35700	100096	51200	87040	46650	253376	133550	119826	44517	39942
7.	Gangadhar Ram harne	Bhambarda	47705	23800	86940	38400	60078	31100	194723	93300	101423	31100	33808
8.	Bhagvan Sarjirao dahade	Hiwra	66402	35700	84219	38400	91494	46650	242115	120750	121365	40250	40455
9.	Sanjay Janarchan dongre	Hiwra	44175	23800	74528	38400	91200	46650	209903	108850	101053	36284	33685
10.	Dashrath narayan Garje	Jadgaon	66402	35700	54351	25600	88825	46650	209578	107950	101628	35983	33876
11.	Shaikh ayub shaikh hasan	Jadgaon	67469	35700	83003	38400	58558	31100	209030	105200	103830	35067	34610
12.	Subhash gangadhar Belkar	Jadgaon	73238	35700	85750	38400	93500	46650	252488	120750	131738	43913	43913
13.	Pandit laxman natkar	Tongaon	72036	35700	80342	38400	65160	31100	217538	105200	112338	35067	37446
14.	Kaka Shankar shejul	Tongaon	65316	35700	82269	38400	88720	46650	236305	120750	115555	40250	38519
15.	Vishwanath bhatpude	Tongaon	72900	35700	83300	38400	89505	46650	245705	120750	124955	40250	41652
16.	Shaikh abcul shaik fatu	Karmad	61824	35700	49504	25600	56472	31100	167800	92400	75400	30800	25134
17.	Keshav shankar kulkarni	Karmad	71253	35700	81813	38400	94050	46650	247116	120750	126366	40250	42122
18.	Nana Jiaram ahire	Dudhad	72450	35700	85444	38400	94520	46650	252414	120750	131664	40250	43888
19.	Ramesh tatyarao Rajale	Dudhad	67680	35700	76160	38400	83904	46650	227744	120750	106994	40250	35665
20.	Ramesh kasha Shinde	Dudhad	46342	23800	84150	38400	59200	31100	177114	75450	101664	25150	33888

Satana) was found Rs.45799, minimum average profit obtained in three year to farmer (*i.e.* Shaikh abdul shaik fatu of village Karmad) was found Rs.25134, maximum average expenditure spend in three year to farmer (*i.e.* Hasan Ba latif Shaha of village Satana) was found Rs.44217 and minimum average expenditure spends in three year to farmer (*i.e.* Ramesh kasha Shinde of village Dudhad) was found Rs. 25150. Farmers mainly had three outlets for the sale of their products namely: main market, town market and farm. Mostly the producers sold their output in the main markets. But the beneficiaries are marketing their goods in traditional and mixed condition. As a result, beneficiaries could not get expected prices.

Jadhav and Kassar, 1989; Jadhav and Siddiqui, 2007; Soni and Rajput, 1984 and Bhagnagar, 1975 also worked on the related topic and the results were more or less coincides with the results of the present study.

Conclusion :

From survey work it was observed that M.A.U. developed deep litter poultry house for 100 birds found in good condition, durable, profitable and suitable for all type climate. Market value of developed poultry house was found to be Rs. 53417/-. As per DSR value of poultry house in 2010-11 is Rs.66603, 2011-12 is Rs.71721 and 2012-13 is Rs. 78310. Cost of developed poultry house can be repayment in 4-5 turns of poultry. Average expenditure in 2010-2011 ranges from Rs. 32800-47600, in 2011-12 ranges from Rs. 25600-51200 and in 2012-13 ranges from Rs. 31100-46650. Average net profit in 2010-11 ranges from Rs. 20375-51580, in 2011-12 ranges from Rs. 28751-48540 and in 2012-13 ranges from Rs. 23382-47840. Developed poultry house is suitable for landless, marginal and small land holding farmer as a supplementary income.

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