Original Research Article

~~Impact of s~~Skill development ~~training~~ programs ~~on promotion of~~Concerning backyard poultry farming in arid regions of Rajasthan

Abstract

~~A study was~~We conducted ~~to~~ an assessment of the impact of skill development training programmes on the promotion of backyard poultry farming practices in the arid regions of Rajasthan. The information was collected from 120 respondents with the help of a well-structured interview schedule cum questionnaire. A majority (99%) of the respondents adopted timely treatment of sick birds and 98%~~of percent~~ farmers adopted,feed formulation at the household level,culling, and selection, use of antibiotics, rearing of quality birds, and consulting veterinary doctors. 97%~~of percent~~ respondents use feed supplements,and 97%~~percent~~ ofrespondents provide~~d~~ feed according to age. The data also showed that a similar adoption index was obtained for segregation of diseased birds, record keeping, and de-beaking (92%), while for feed supplement use was 88%~~ percent~~, it is clear that maximum gain was obtained in ~~case of~~ consulting veterinary doctors (85%) followed by segregation of diseased birds (84%),feed formulation at household level and rearing of quality birds(82%), record keeping (81%), Feed supplement uses (79%), Post-mortem of dead bird byveterinary doctors (77%), while minimum gain of 53%~~percent~~ was obtained for culling. The training imparted to the farmers increased their knowledge and they got acquainted ~~to~~ withnew technologies of poultry farming.

Keywords: de-beaking,Poultry,Respondent, segregation,training,~~de-beaking,segregation~~

Introduction

Agriculture plays a vital role in the Indian economy. Over 70%~~per cent~~ of the rural households depend on agriculture. Agriculture is an important sector of the Indian economy as it contributes about 19.9% to the total GDP and provides employment to around 58% of the population. Livestock provides livelihood to two-thirds of rural ~~community~~communities. It also ~~provides employment to~~employs about 8.8% of the population in India. India has vast livestock resources. ~~Livestock~~ The livestock sector contributes 4.11% of GDP and 25.6% of total Agriculture GDP.Indian economy is based on agriculture andalliedsector,besidesprovidingfoodandnutritionalsecurityagricultureandalliedsectoralsocreatesemploymenttotheruralpeopleinthe shortest possibletime. LivestockandPoultryprovideamajorcontribution to the Indian Economy (Nath*etal.*,2012).PoultryproductioninIndiaemerges as a poultry industry from a backyardpoultryproductionsystem.Now~~ a day~~adays,~~t~~availabilityofpoultryproductsin~~the~~ruralareas is very low or unavailable due to theirhigherprices. Training is very essential for capacity building and for strengtheningthebusinesseconomicallybydeveloping a scientificattitudetoincrease

their knowledge status and awareness ofthe present situation of the sectorthroughout the country and worldwide. It also creates interest ~~of~~ intraineesin~~the~~poultryrearingiftrainingisbasedontheiractualneeds(Bhattarai, 2008).The Meticulousnessoffarmers and their education status are also accountable for the adoption oftechnologicalinterventions(Rosaria,1997).Themainpurposeof training is to bring desired change in the attitude/approach of farmers(Brough, 2004).Knowledgeisessentialforthe properutilizationofgeneticstock,availableresources,economicinformation,andscientificpoultryhusbandrypracticesbythefarmerstodeveloptheirbusinesssuccessfullyandisultimatelylinkedwiththeincreasedsocio-economicstatus(Boice,2005;Eade,2007;Sharma,2010).Training improves a person'sskill, and powerof intelligenceandalso develops the desiredattitude requiredfor hiswork.(Dahama and Bhatnagar 1980).Training is the systematic process of acquisition of newskills,attitudes,andknowledgeinthecontextofimprovingone'sproductivityinanorganization.Thecapacity of the traineesin ~~acquiring~~to acquire knowledge and technologicalskillsdependsonthereceptivityofthem.

Farmer rear indigenous or desi poultry birds(Non-descript) with comparative very low eggandmeatproductioninbackyardsystemorfree range system. The farmers are unaware ofthefarmpracticesandvariouschallengesrelated to poultry farming especially when theflocksizeincreases.Formakingpoultryfarming economically viable in ~~the~~ rural areas,basictrainingrelatedto poultryfarmingisof utmost~~important~~importance.Training changes the levelofknowledgeandskillsofthefarmerandprovidesknowledgeregardingt h e identificationof improved backyard poultry birds, diseasesmanagement,climaticstresses,feedingredients,andpoultrywastemanagement.Therefore, ~~the present work has been~~We designed ~~to study~~this study to evaluate the impact of these program~~me~~s organized by the KrishiVigyan Kendra on the adoption of backyard poultry farming.

MaterialsandMethods

KrishiVigyanKendraBikaner isoneoftheoldestKendras~~of~~inRajasthantoprovidetrainingprogram~~me~~sonskilldevelopment in poultry farming. The sample of the study was 120 trainees who acquired training~~on~~ in scientific poultry farming during the period from 2018-19 to 2020-21.Awell-structuredinterviewschedulewaspreparedonsocio-economiccharacteristics,dimensionsofenterprise,andperformance of poultry entrepreneurs. This information was collected byusingastructuralquestionnairefromthe trained farmers by visiting & discussing withthem~~personally~~andthedatawasanalyzedfor assessing the adoption of backyard poultrystructureamongfarmers.Toascertaintheadoptionlevelofmanagementpracticesbythefarmers beforeandafterthetraining,the adoption scale was provided with the list oftechnologiesadoptedby thefarmerstotickon, thereby indicating the level that was in theadoptionscaleand~~toidentify~~identifyingconstraintsmilitatingagainstthe adoptionlevel.Datawasanalyzed with both descriptive and inferentialstatistics.

Statistical analysis??????

ResultsandDiscussion

In this study data presented in Table 1 shows the age, gender, education level,occupation,and land holding.~~Majority~~ A majority (58.33%) of the poultry farmers had an age group between 31-40 years which was followed by ~~the age group~~ 20-30 years ~~(25.0%)~~, while16.67%~~percent~~ of respondents ~~belonged to age group~~were~~of~~ more than 40 years. It is obvious from the data that a

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greater part of the respondents, who were ~~between age group of~~ 31-40 years old, had a maximum adoption percentage of backyard poultry farming. The study indicated that a larger part (82.5%) of the respondents in arid regions in Rajasthan ~~was~~weremales, which indicated that adoption of poultry farming among rural women, is very low (17.5%). Among the respondents, 50.83%~~percent~~ were in middle school followed by ~~(26.67%)~~intermediate, ~~(15.0%)~~primarily educated, ~~(5.0%)~~graduate,and illiterate ~~(2.5%)~~. Similar findings were reported by (Nath et al., 2012).

It is also revealed from Table 1 that the majority (87.5%) of the respondents belonged to the farming community,10.0%~~percent of~~respondents were landless labourers followed by businessmen (2.5%). It was concluded thatthe majority of the backyard poultry farmers were engaged in farming.

Table 1:-Distribution of respondents based on socioeconomic characteristics of thebackyard poultry farmers

Characteristics	Frequency	Percentage
Age (years)		
20-30	30	25
31-40	70	58.33
>40	20	16.67
Gender		
Male	99	82.5
Female	21	17.5
Education level		
Illiterate	3	2.5
Primary	18	15
Middle school	61	50.83
Intermediate	32	26.67
Graduate	6	5.0
Occupation		
Farming	105	87.5
Land less labours	12	10.0
Businessmen	3	2.5
Land Holding		
<2hac	13	10.83
2-3hac	67	55.84
>5hac	40	33.33

Knowledge level or score of poultry farmer:-

Improper implementation of programs, illiteracy, poor marketing system, lack of scientific knowledge, and farm~~s~~ mechanization are the major constraints to uplift the socio-economic of the farmers. Poultry birds are very sensitive to ~~the~~ adverse climatic conditions due to feather ~~body~~ bodiesand lack of sweat glands.~~The s~~Stress over a period ~~of time~~ can deteriorate the production performance and high incidences of stress-related diseases are avoided by providing feed supplements and promoting better housing facilities. Properly ventilated houses, a clean environment, and scientific waste management strategies are the pre~~requisite~~requisites for poultry farming. Poultry house pro~~vides protection from~~tects harmful animals and the area of

the house depends upon the flock size. Before keeping the birds inside the poultry house, fumigate the farm or disinfectant with approved chemicals withgreat precaution. Wooden and rice bran can be used for making litter and litter should be dry and clean. Poultry feeder drinkers and other equipment should be kept ~~at~~ inthe proper place and the number of feeder and drinkers depend upon the flock size and area of the house. Most of the farmers are unaware and a very ~~less~~ smallnumber of farmers ~~using~~ usescientific management techniques in his/her poultry farm. The impact of training was significant and the average knowledge score of the trainees increased from 4.98 to 15.02 (~~out of 20;~~ Table 2). Similar to the present finding Ram et al., 2017 ~~also~~ assessed the importance of training and concluded thatthe farmer needs training. Chatterjee et al., 2015 ~~highlights~~ highlightedthe importance of farmers' training and stated that the success ~~on~~ ofpoultry production depends primarily on the locally adapted bird employed, favo~~u~~rable environment, and availability of good feed. However, Kabir et al., (2015) also studied the impact of poultry farming on the socio-economic condition of Bangladeshi farmers and concluded that ~~the~~ 38% of the farmer's socio-economic condition got improved due to family poultry farming.

Table ~~.~~2 Knowledge level or score of poultry farmer (based on questionnaire)

S. No.	Poultry Farm Management Practices	Average Score (Out of 20)	
		Before Training	After Training
1	Housing, Sanitation, and waste management	5.76	14.24
2	Disease Management and Schedule Vaccination	3.05	16.95
	Poultry Nutrition and Feed Formulation	8.26	11.74
3	Stress Management of Poultry	2.72	17.28
4	Abnormal Behaviour of Poultry	5.11	14.89
5	Overall Average Score	4.98	15.02

Trainingneedsareasamongpoultryfarmers:-

Thetrainingneedsofpoultryfarmersformajoractivitiesarepresentedin~~the~~Table3.The comparative less important areas that required training inthe order were ~~as~~ Chicksrearing/Broodingmanagement,Feedpreparation/formulation, Vaccination&Preventivemeasures,Diseasediagnosis&healthcare,Poultryshed&Housing~~managem ent~~Management,Feeding&wateringmanagement,Layer~~management~~Management, Bird/meat/eggmarketing, Incubation/hatching, Culling/Selectionofbirds,Chickpurchasing, Compostpreparation, Breeding/matingaspect andmaintenanceofrecords/accounts. However, knowledge about breeding/mating aspect andbroodingamongruralpoultry isverycrucialwhichcanincreaseproductivityaswellassustainabilityofthesystem.Selectionofcockerel and replacement of males in the flock is compulsory to reduce~~d~~ the inbreeding effect at the farm (Gawande*et al.*, 2007; Kapur, 2008).Itcould beobserved fromtheresultsdepicted inTable3~~is~~thatthe Chicks~~s~~rearing/Broodingmanagement,Feedpreparation/formulation, Vaccination&Preventivemeasures,Diseasediagnosis&healthcare are themostimportanttraining~~need~~areasinwhichparticipation is high and those areas are felt to be the fundamentalareas.Trainingactivitiesareveryimportanttopickuptheirknowledge and aptitude,to increase acceptability/adoption of newscientific/ modern interventions. ~~Adoption~~ The adoption of technologies was betteramongthe highereducatedmasses.Genderhada significantroleinfinance activities.

~~Majority~~ The majority of thefarmersdesiredtraining by the ~~on~~on-

sitedemonstrationmethod(64.5%).However,restrequiretrainingbyusingthedifferent extension methods like exposure visits (25.5%) and lectures withfield trips (10.0%). These findings were inagreement with the report of Taneja (1998). Site demonstrations providemulti-sessioninteractionwithan expertattheirfarm during frequentvisits at any stage of development. On On-farm demonstrations would helpinbetterappreciationandacceptanceofscientificinterventions/modern practices. Severalfarmerspreferindigenousbirdsbecause; they are less demanding and less prone to be disease andinternal/external parasitic infestation. Moreover, the native birds aremore sustainable in the prevailing circumstances. Several years afterindependenceduetowrongplanning,thestatusofruralpoultrydevelopment in targeted areas is very poor.It might be due to thereasonthattheproducersdonotadoptimprovedbreedsandtechnology at the desired level because of the un-availability and inadequatesupply of chicks, the low genetic potential of birds, high mortality duringextreme winter and summer, lack of loan facilities, and high rate ofinterest, costly feed, inadequate knowledge about scientific feeding,health care, and management etc (Mehta *et al.*, 2002; Pica-CiamarraandOtte,2009).Apartfromthisnecessaryfacilitiesregardingdiagnosis,prevention,vaccinationandcontrolmeasuresforsafeguarding the health and production of poultry need to be extended invillage areas (Katariа*et al.*, 2005; Dhama*et al.*, 2008a,b,c; Dhama*etal*.,2011;Dhama*etal*.,2013a,b,c,d,e,f).Thiswouldhelpinthe adaptation and propagation of popular poultry farming as a popularbusinessandsourceofregularandsustainedincomeinruralareas.

Table 3:- Trainingneedsareasamongpoultryfarmers

S.No.	Trainingneedarea	Trainees / Farmers	Rank
1	Chicksrearing/Broodingmanagement	120	I
2	Feedpreparation/formulation	110	II
2	Vaccination&Preventivemeasures	94	III
4	Diseasediagnosis&healthcare	92	IV
5	Poultryshed&Housingmanagement	88	V
6	Feeding&wateringmanagement	84	VI
7	Layermanagement	78	VII
8	Bird/meat/eggmarketing	76	VIII
9	Incubation/hatching	72	IX
10	Culling/Selectionofbirds	70	X
11	Chickpurchasing	63	XI
12	Compostpreparation	56	XII
13	Breeding/matingaspect	50	XIII
14	maintenanceofrecords/accounts	48	XIV

Adoption of improved management practices by farmers before training:-

The data presented in Table 4 revealed that 42%percent ofrespondents were aware of culling, 32%percent of the use of antibiotics, 29%percent of respondents of timely treatment of sick birds,28%percent of the use of de-beaking, 26%percent ofrespondentsfrequent visit to birds, 21%percent of respondentsprovided feed according to poultry age, 18%percent offarmers were aware with the use of disinfectants in farm and 16%percent offarmers were rearing quality birds and feed formulation, however low adoption was recorded in the post-mortem of dead bird by veterinary doctors (0%), brooding management(15%), record keeping (11%) and in

use of feed supplementation (9%),Consulting veterinary doctors (13%) and segregation of diseased birds obtained mean score of 8 percent. Thus, the data revealed that before training maximum respondents had medium to low adoption of poultry farming. It also showed that before training ~~of~~ inimproved management practices, poultry farmers were not ~~much~~ veryaware ~~about~~ ofthe post-mortem of dead birds by veterinary staff,segregation of diseased birds' feed supplement uses, brooding management, record keeping, and feed formulation at the household level. Similar findings were also reported by Ezeibe et al., 2014.

Adoption of improved management practices by farmers after training:-

There is a significant adoption of all the improved poultry management practices after training (Table 4). A majority (99%) of the respondents adopted timely treatment of sick birds and 98%of ~~percent~~ farmers adopted,feed formulation at the household level,culling and selection, use of antibiotics, rearing of quality birds, and consulting veterinary doctors. 97%~~percent~~ ofrespondents use feed supplements,and 97% of~~percent~~ respondents provide~~d~~ feed according to age. The data also showed that a similar adoption index was obtained for the segregation of diseased birds, record keeping, and de-beaking (92%), while for feed supplement use was 88 percent. The view for the above management practices ~~were~~ wasalso supported by Ithika et al., 2013. it is clear that maximum gain was obtained in ~~case of~~ consulting veterinary doctors (85%) followed by segregation of diseased birds (84%),feed formulation at the household level and rearing of quality birds(82%), record keeping (81%), Feed supplement uses (79%), Post-mortem of dead bird byveterinary doctors (77%), while minimum gain of 53 percent was obtained for culling.

Table 4: -Adoption level of improved management practices before and after the training

Sr. no	Management Practices	Adoption index (%)		Gain (%)
		Before	After	
1	Brooding management	15	79	64
2	Use of disinfectants ~~in~~ on farm	18	74	56
3	Feed formulation at the household level	16	98	82
4	De-beaking	28	92	64
5	Timely treatment of sick bird	29	99	70
6	Culling & selection	45	98	53
7	Record keeping	11	92	81
8	Use of antibiotics	32	98	66
9	Frequent visits to birds	26	97	71
10	Post-mortem of dead bird by veterinary doctors	0	77	77
11	Feed supplement uses	9	88	79
12	Rearing of quality birds	16	98	82
13	Provide feed according to age	21	96	75
14	Segregation of diseased birds	08	92	84
15	Consulting veterinary doctors	13	98	85

CONCLUSION?????????

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Comment [es1]: MUST BE UPDATED as ZERO% (ZERO out of 28) of the listed references were published in the past five years. The percentage has to increase to at least 35-40%. Old references negatively impact the study and indicate that the study is no longer a point of interest

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