

Original Research Article

<https://doi.org/10.20546/ijcmas.2020.912.300>

Knowledge based Adoption Behavior of Poultry Farmers in Different Agro-Climatic Zones of West Bengal, India

Arunasis Goswami and Sukanta Biswas*

Department of Veterinary & A.H. Extension Education, W.B. University of Animal and Fishery Sc. Kolkata, W.B., India

*Corresponding author

ABSTRACT

Keywords

Adoption, Knowledge, Livelihood, Poultry Farmers, Agro-climate etc

Article Info

Accepted:

16 November 2020

Available Online:

10 December 2020

Poultry farming is one of the vital assets of livelihood generation for pro-poor rural stakeholders in various agro-climatic Zone of West Bengal, India. In the study, one district from each agro climatic zone i.e. 06 districts were purposively selected. The total 1178 GP was selected purposively from six districts and all villages under 61 Gram Panchayets (i.e. 5% of 1178 GP) was covered randomly in which 524 no's of villages was taken for this study. From each village one poultry farmer i.e. 524 no's of Poultry owners were selected for the study. The data collected through pre-tested structured interview schedule with 35 Nos. of independent variables along with knowledge and Adoption Index as dependent variables and analyzed through various statistical methods. The study explored that, majority of Poultry owners were middle age group(31-40 years), married, Hindu by religion, High school literacy, low income group, Business and Labour were main occupation and took self-decision for poultry farming in all zones. The majority of selected Poultry owners have medium level of knowledge and adoption about improved farming practices in all Zones. Poultry farming should be encouraged in all ACZ along with training of farmers for improved A.H. practices is to be taken due consideration while formulating planning.

Introduction

Poultry farming plays a pivotal role in livelihood generation of pro-poor stakeholders in various agro-climatic Zone of West Bengal, India. Realizing the present day challenge, like Poverty, malnutrition, livelihood insecurity and environmental crisis, scientific orientation for empowering rural Poultry farmers through knowledge based adoption practices are extremely needed under various agro-climatic zones of Eastern

India i.e. West Bengal. To develop sustainable vis-à-vis profitable Poultry farming practices and for empowering these farming communities a vivid study was promulgated in selected Poultry farmers under 06 Agro-climatic Zones of West Bengal, India.

Materials and Methods

In present study, one district from each agro climatic zone i.e. 06 districts were

purposely selected from the state of W.B. The total 1178 GP was selected purposively from six districts and all villages under 61 Gram Panchayets (i.e. 5% of 1178 GP) was covered randomly in which 524 no's of villages was taken for this study. From each village one poultry farmer i.e. 524 no's of Poultry owners were selected for the study. The field investigation was carried out with the help of pre-tested structured interview schedule constructed for the study. Total, Thirty five (35) no's of independent variables were selected to assess the adoption behavior of selected Poultry owners in various Agro climatic zone of W.B, India. The independent variables were measured with readily available scales and few scales were also developed for the study. Adoption of selected improved Poultry farming practices was dependent variable which was measured by adoption index method (*Das Gupta, 1968*). The collected data was computed and analyzed by various statistical methods for better interpretation of the study.

Results and Discussion

The analytical study of the table-1 represents that, the adoption index in IAHP of selected Poultry owners in New alluvial Zone (NAZ) were positively and significantly correlated with variables like marital status, education, family education status, house type, material possession, attitude towards income generation, mass media, communication sources, risk orientation, social participation, at 1% level whereas with caste, personal Cosmo politeness, attitude towards employment, knowledge in poultry at 5% level of significance. In Old Alluvial zone (OAZ), adoption index in IAHP of selected poultry farmers had positive significant correlation with variables such as- other income sources, communication skill at 5% level and with knowledge on Goatery at 1% level of significance. In Terrain zone,

adoption index in IAHP were positively and significantly correlated with variables like- Pathology center, family type, Mass media, communication sources, Marketing orientation at 1% level, whereas with personal localiteness, Cosmo politeness, attitude in productivity, income generation at 5% level of significance. In Hill zone, adoption index in IAHP were positively and significantly correlated with the variables like- Marital status, pathology center, economic motivation, attitude towards productivity at 5% level whereas with mass media, personal Cosmo politeness, localiteness, communication sources and skill, attitude towards income generation at 1% level of significance. In Red laterite zone (RLZ), adoption index have positive significant correlation with the variables like-marital status, family type, family size, mass media, personal Cosmo politeness, localiteness, communication sources at 1% level whereas with marketing orientation, family education status at 5% level of significance. Finally, the adoption index in IAHP of selected poultry owners in Coastal zone were positively and significantly correlated with variables like- Pathology center, caste, family education status, knowledge in poultry farming, attitude in productivity, Marketing orientation, risk orientation, at 1% level whereas with Mass media at 5% level of significance under study area.

The following previous observations will support some where the present study to get better understanding. Sohal and Tyagi (1978) reported that family size had no significant association with knowledge in urban area. Chung (1986) also made similar reporting for economic status and positive relationship was reported by Chandra (1979) and Hazarika (1983). Sekhan (1970) and Sundaraswami *et al.*, (1978) had made positive relation with utilization of mass media. Sarkar (1981), Sayeedi (1983) and Dana *et al.*, (1998) found

significant relation of family educational status with adoption of Poultry innovations. Daipuria *et al.*, (2001) reported that age, education, house type, social participation, risk orientation, mass media, marketing orientation, knowledge were significantly associated with adoption of poultry farming practices.

The result of Path analysis for selected Poultry farmers represents the direct and indirect effects of the 44 selected exogenous variables on Adoption index of all zones of West Bengal. The data revealed that- Mass media (0.643) has largest direct effect on adoption index of poultry farmers followed in 05 no's of descending order variables such as- personal localiteness (0.549), personal Cosmo politeness (0.436), knowledge in GFC (0.260), Education (0.170), attitude in employment (0.169) had positive direct effect whereas- knowledge in piggery (-0.002), communication skill (-0.012), economic motivation(-0.018), occupation (-0.039), religion(-0.049) had negative direct effect on adoption index of poultry farmers of all zones of West Bengal.

As regards, total indirect effect it was revealed from the table 2 that- communication sources (1.321), pathology centre(0.386), Knowledge in poultry farming (0.281), social participation (0.242) and knowledge in colostrum's feeding (0.206) were the first five factors which exerts largest indirect effects on adoption index in poultry farming practices.

The data also explored that out of 44 exogenous variables, maximum variables had their largest indirect effects through personal localiteness, personal Cosmo politeness, mass media, communication sources, knowledge in deworming, Education, attitude in productivity, employment and income generation, social participation, knowledge in

poultry farming, family education status, total income, family type, knowledge in concentrate feeding, vaccination and other income sources etc. The residual effect has been found to be 0.63 or in a way, 63% of the total variability has been left unexplained.

Analytical study suggest that Mass media sources, personal localitenes, cosmopoliteness and communication sources not only exerts largest direct effects on adoption index in poultry farming, but also it influences indirectly in association with a large number of variables which perform their role through this factors. So, these factors have come out to be a key element which directly and indirectly promotes adoption of improved poultry farming practices in zone wise stakeholder's entrepreneurship development. Roy (2006) studied about the adoption behaviour of Kuroilar farmers in sundarbans and found the same results. Jha and shakwat (1972) observed in adoption practices that age has got a significant association.

Hussain (1968) reported that income of the respondent was not significantly associated with the adoption of improved animal husbandry practices. Tripathy and Jyoti (1971) suggested the significant association of family education with the adoption behaviour of the farmers. Goswami (2000) found that mass media and personal cosmopolite had positive and significant association with the improved A.H. practices.

The table 3 depicted that, mean value of poultry farmers under Zone-1 was significantly higher in relation to adoption of Vaccination, feeding of Concentrate and composite adoption practices. But the mean score of Poultry farmers under Zone-5 was significantly higher in relation to adoption of Deworming Practices.

Table.1 Relationship between Selected Independent & Adoption Index of Poultry Farmers in Various Agro-Climatic Zones of W.B

Variables	Burdwan	Howrah	Coochbehar	Darjeeling	Purulia	S24pgs
	NA Zone	OA Zone	TERAI Zone	HILL Zone	RL Zone	CL Zone
Sex	-0.034	0.022	0.082	-0.001	0.033	-0.134
Age	0.091	0.136	-0.157	-0.074	-0.149	-0.007
Religion	-0.237	0	-0.04	-0.107	0.227	0.058
Marital Status	0.242	-0.088	0.203	0.221	0.321	0.073
Income	-0.037	-0.222	-0.251	0.02	-0.169	-0.204
Oth Income	0.111	0.244	0.015	0.041	-0.028	0.279
Tot Income	0.098	-0.021	0.012	0.036	-0.073	0.073
Pathology Centre	0.043	-0.048	0.511	0.249	0.157	0.342
Caste	0.215	-0.116	0.213	0.206	-0.206	0.25
Milk Productivity	0.208	0.00	0.317	0.00	0.293	0.333
Occupation	-0.086	0.00	-0.337	0.00	-0.113	-0.237
Education	0.456	0.00	0.004	0.00	0.119	0.122
Fam. Edu Stat	0.598	0.00	0.099	0.00	0.258	0.412
Fam_Type	0.109	0.00	0.633	0.00	0.617	0.169
Fam_Size	0.094	0.00	0.241	0.00	0.429	0.054
Land	0.153	0.00	-0.221	0.00	-0.009	-0.165
House	0.257	0.00	0.107	0.00	0.058	0.005
Farm Power	-0.002	0.00	-0.268	0.00	-0.273	-0.127
Knw_Col	0.312	0.137	0.314	0.005	0.011	0.316
Knw_Goat	0.012	0.327	-0.052	-0.246	-0.116	0.03
Knw_Pig	0.027	-0.124	-0.288	-0.277	0.023	-0.161
Knw_Duck	0.032	-0.064	-0.411	-0.056	-0.135	-0.239
Knw Poultry	0.2	0.116	0.201	0.005	0.304	0.298
Knw_Milk	0.264	-0.172	0.125	-0.092	0.233	0.17
Att. Employment	0.19	-0.174	-0.069	-0.006	-0.053	-0.068
Att Income	0.334	-0.036	0.294	0.284	0.152	0.187
Mat Possession	0.388	0.027	0.105	-0.011	0.12	0.043
Economic Motiv.	-0.177	5.556	-0.204	0.239	-0.224	-0.011
Attitude	0.281	0.006	0.347	0.014	-0.057	0.315
Knw_AI	-0.055	-0.138	0.414	0.117	-0.136	0.268
Knw_VAC	-0.117	0.192	-0.08	-0.105	0.095	-0.22
Knw_DE	-0.243	-0.392	-0.219	-0.321	-0.037	-0.187
Knw_GFC	0.001	0.28	-0.361	-0.24	0.087	-0.32
Knw_GFF	-0.038	-0.258	-0.153	-0.036	0.16	-0.186
Knw_CF	-0.123	0.202	-0.343	-0.377	0.016	-0.251
Att. Productivity	0.437	-0.066	0.284	0.277	-0.067	0.3
Mass Media	0.274	0.182	0.422	0.421	0.586	0.23
Per Cosmopolite	0.201	-0.037	0.294	0.346	0.341	0.1
Per Localite	0.101	-0.089	0.332	0.469	0.375	-0.15
Communication	0.39	0.005	0.453	0.44	0.584	0.078
Com Skill	0.116	0.281	0.17	0.383	0.232	-0.014
Marketing Orient.	0.135	-0.148	0.371	0.17	0.279	0.554
Risk Orientation	0.235	0.095	0.112	0.084	0.173	0.227
Social Participation	0.225	0.18	-0.112	-0.016	0.145	-0.087

N.B. Bold values are significant at 5% level & Bold and italics value are significant at 1% level

Table.2 Path coefficient showing direct & indirect effects of selected poultry farmers on adoption index in all (06) zones of W.B

Independent Variables	Direct effect	Rank	Total indirect effect	Rank	Substantial Indirect Effect (Via)			
					Var. No	1 st	Var. No	2 nd
1 Sex	-0.058	33	-0.043	25	38	0.025	26	0.024
2 Age	0.064	15	0.020	20	31	0.069	40	0.066
3 Relig	-0.049	32	-0.084	30	39	0.084	25	0.069
4 Mar_Stat	0.094	13	-0.049	26	37	0.126	39	0.061
5 Incom	-0.194	41	-0.041	24	25	0.037	7	0.035
6 Oth_Inc	-0.092	35	0.062	15	40	0.115	12	0.052
7 Tot_Inc	0.051	17	-0.175	38	24	0.042	40	0.042
8 Path_Cen	0.081	14	0.386	02	31	0.201	40	0.112
9 Caste	0.010	25	-0.072	28	39	0.049	38	0.044
10 Milk_Pro	0.145	08	-0.050	27	39	0.057	36	0.040
11 Occup	-0.039	31	-0.150	37	38	0.070	12	0.042
12 Educatio	0.170	05	0.028	19	37	0.039	13	0.039
13 Fam_Edu	0.120	11	0.073	12	39	0.074	12	0.055
14 Fam_Type	0.105	12	0.045	17	38	0.111	37	0.084
15 Fam_Sz	0.032	20	0.035	18	38	0.072	14	0.071
16 Land	0.001	27	-0.007	21	12	0.068	39	0.058
17 House	0.012	24	0.192	06	38	0.078	31	0.054
18 Farm_Pwr	0.050	18	0.092	10	40	0.156	31	0.071
19 Mat_Poss	-0.093	36	0.121	09	12	0.062	40	0.043
20 Eco_Moti	-0.018	30	-0.098	31	39	0.116	25	0.067
21 Attitude	0.002	26	0.070	14	33	0.046	36	0.039
22 Knw_Ai	0.019	23	0.081	11	38	0.067	31	0.060
23 Knw_Vac	0.029	21	-0.269	40	39	0.157	25	0.154
24 Knw_De	-0.200	42	-0.139	35	25	0.142	39	0.087
25 Knw_Gfc	0.260	04	-0.530	43	39	0.178	37	0.044
26 Knw_Gff	-0.104	37	-0.032	23	39	0.118	25	0.115
27 Knw_Cf	-0.118	39	-0.148	36	25	0.169	39	0.093
28 Knw_Col	-0.062	34	0.206	05	33	0.064	38	0.060
29 Knw_Goat	0.023	22	-0.100	32	39	0.076	33	0.054
30 Knw_Pig	-0.002	28	-0.121	33	25	0.121	40	0.038
31 Knw_Duck	-0.272	43	-0.235	39	39	0.218	25	0.187
32 Knw_Poul	0.140	09	0.281	03	31	0.076	33	0.053
33 Knw_Milk	0.135	10	0.071	13	32	0.055	40	0.038
34 Att_Empl	0.169	06	-0.125	34	38	0.057	32	0.024
35 Att_Inc	-0.127	40	0.143	08	37	0.127	39	0.124
36 Att_Prod	0.115	38	-0.027	22	10	0.050	24	0.047
37 Mass_Me	0.643	01	-0.337	42	39	0.236	38	0.188
38 P_Cos	0.436	03	-0.311	41	39	0.279	37	0.278
39 P_Loc	0.549	02	-0.654	44	37	0.276	38	0.221
40 Commun	-1.199	44	1.321	01	37	0.480	39	0.450
41 Com_Skil	-0.012	29	-0.076	29	37	0.244	39	0.243
42 Market_O	0.062	16	0.189	07	37	0.082	31	0.046
43 Risk_O	0.048	19	0.055	16	38	0.095	37	0.093
44 Soc_Part	0.152	07	0.242	04	37	0.115	31	0.073

Residual Effect=0.630777

Table.3 Zone wise comparison by Chi-Square (KW) test of selected poultry owners in 06 agro-climatic zone of West Bengal

Zone	Ad.Vacc	Ad.Dewor	AD.CF	Ad. Colost	Ad Burdiz	Ad.Ureastrw	Adoption
1.OAZ	3.85	3.55	3.20	3.36	3.21	2.23	3.33
2.NAZ	3.52	3.65	0.67	0.67	0.20	0.04	1.19
3.TERAI	3.46	3.74	0.86	1.02	0.23	0.00	1.42
4.HILL	2.75	3.07	0.60	1.31	0.12	0.00	1.16
5.RL	3.45	3.84	1.55	2.42	0.92	0.14	2.08
6.COSTAL	3.42	3.55	0.69	1.14	0.19	0.02	1.38
Chi Squire	16.34	12.41	133.75	110.28	250.10	266.44	237.78
Sig.	0.01	0.03	0.00	0.00	0.00	0.00	0.00

Table.4 Stepwise Multiple Regression analysis between some selected Independent & Dependent variables (Adoption) of Sample Poultry Farmers

Variables	Unstand. Coefficients		Stand. Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.301	0.248		1.214	0.225
Knw_Duck	-0.026	0.005	-0.334	-5.630	0.000
Mass Media	0.067	0.011	0.187	5.875	0.000
Knw Poultry	0.040	0.007	0.213	5.669	0.000
Social Participation	0.170	0.039	0.166	4.415	0.000
Income	-0.109	0.030	-0.125	-3.678	0.000
Education	0.073	0.020	0.134	3.665	0.000
Occupation	-0.068	0.020	-0.112	-3.352	0.001
Knw_Gff	-0.044	0.015	-0.111	-2.996	0.003
Knw_Gfc	0.022	0.004	0.257	5.013	0.000
Knw_De	-0.063	0.017	-0.154	-3.790	0.000
Fam. Edu Stat	0.076	0.029	0.093	2.642	0.008
Fam_Type	0.270	0.076	0.116	3.548	0.000
Milk Productivity	0.031	0.011	0.102	2.894	0.004
Pathology Centre	0.247	0.116	0.107	2.134	0.033
Model Summary					
R	R Square	Adjusted R Sq	SE (Est)		
0.743	0.552	0.539	0.672		

Note: * P> 0.05 level; ** P> 0.01 level; F entry Probability=0.05; F removal probability=0.10

Table.5 Utilization of different information sources in adoption of IAHP by selected Poultry farmers in various Agro-climatic Zones of W.B

Sources of Information			
ACZ of W.B.	Mass Media	Personal Cosmo politeness	Personal localitiness
Hill Zone(84) %& Rank	44.05(V)	52.38(V)	65.48(II)
Coastal Zone(108) %& Rank	38.89 (VI)	52.78(IV)	66.67 (I)
RL Zone(68) %& Rank	44.12(IV)	52.94 (III)	61.76 (III)
NA Zone(132) % & Rank	56.82(III)	60.61 (I)	43.94 (V)
OA Zone(75) % & Rank	60.00 (II)	50.67 (VI)	36.00 VI
Terrain Zone(57) % & Rank	73.68 (I)	54.39 (II)	45.61 IV

Table.6 Knowledge& Adoption level of Poultry owners about improved A.H. practices in various Agro-climatic zones (06) of W.B., India

AC Zone	Level	Statistical parameter	Knowledge level	Adoption level
Burdwn (NAZ)	Low	< (Mean-SD)	18.70	14.70
	Medium	(Mean - SD) to (Mean+SD)	62.80	73.40
	High	> (Mean+SD)	18.50	11.90
Howrah (OAZ)	Low	< (Mean-SD)	7.10	14.30
	Medium	(Mean - SD) to (Mean + SD)	74.90	72.50
	High	< (Mean-SD)	18.00	13.20
Purulia (RLZ)	Low	< (Mean-SD)	10.50	21.10
	Medium	(Mean - SD) to (Mean + SD)	71.70	64.80
	High	< (Mean-SD)	17.80	14.10
Cooch-behar (TRZ)	Low	< (Mean-SD)	16.20	13.20
	Medium	(Mean - SD) to (Mean + SD)	70.60	64.70
	High	< (Mean-SD)	13.20	22.10
Darjeeling (HLZ)	Low	< (Mean-SD)	13.60	14.40
	Medium	(Mean - SD) to (Mean + SD)	59.90	68.10
	High	< (Mean-SD)	26.50	17.50
South 24 Pgs (CSZ)	Low	< (Mean-SD)	20.40	11.10
	Medium	(Mean - SD) to (Mean + SD)	64.80	77.80
	High	< (Mean-SD)	14.80	11.10

The findings depicted above may be supported by previous research findings as follows. Kunzru (1987), Sivnarayana *et al.*, (1995) and Goswami (2000) worked on same characteristics and found more or less similar observations. Goswami (2007) found that education of livestock owner has got its impact on improved poultry farming

practices. Singh (1982) and Nataraju & Channegowda (1984) established that mass media source had significant association with the adoption of improved poultry farming practices. Roy (2006) also observed that social participation had significant association with adoption of improved poultry farming practices.

The table 4 depicted that 55.00% of the variation in adoption index in IAHP of sample poultry farmers was due to combined effect of the selected independent variables contributed in the analysis. The result in the table 5 indicated that the variables like– Mass media, knowledge in Poultry, social participation, education, family education status, family type showed positive and highly significant ($P<0.01$) contribution while pathology center was contributing significantly at 5% level of significance. But the variable like - knowledge in Duckery, income source, occupation, knowledge in GFF and deworming showed negative and highly significant contribution ($P<0.01$). The other variables were excluded as redundant in improving adoption index in IAHP of the selected sample poultry farmers under all zones of West Bengal. Roy (2006) studied about the adoption behavior of Kuroilar farmers in Sundarbans and found same results. Tripathy and Jyoti (1971) suggested significant association of family education with adoption behaviour of the farmers. Goswami (2000) found that mass media and personal cosmopolite had positive-significant association with improved A.H. practices.

The Tabular value explored that, maximum selected poultry farmers in Terrain Zone (73.68%) utilized several mass media as an information sources regarding adoption of improved poultry farming practices, followed by the respondents of OAZ (60.00%), NAZ (56.82%), RLZ (44.12%), HLZ (44.05%) and CLZ (38.89%) were utilize various *mass media* as information sources in adoption of IAHP rank wise in descending order. Similarly, considering *personal cosmopolite* information sources utilization, higher no. of selected poultry farmers in New alluvial zone (Rank-I) used various channel regarding adoption of improved poultry farming practices, whereas selected respondents of TZ(rank-II), RLZ(rank-III), CLZ(rank-IV),

HLZ(rank-V), and OAZ(rank-VI) were sequentially utilize several personal cosmopolite sources for adoption of improved poultry farming practices. Simultaneously, majority of selected poultry owners in coastal zone (66.67%) used *Personnel Localite Sources* in adoption of improved poultry farming practices, as well as selected respondents of HLZ(65.48%), RLZ(61.76%), TRZ(45.61%), NAZ(43.94%), and OAZ(36.00%) were chronologically utilize personal localite channels in descending order as information sources for adoption of improved poultry farming practices in the study area.

The Table 6 revealed that level of knowledge and adoption of selected Poultry owners about improved farming practices in various Agro-climatic zones of West Bengal. The tabular fact explored that, 60-75% of Poultry owners have medium knowledge level and 65-78% have medium adoption level on scientific poultry farming practices and only scanty % have low and high level of knowledge and adoption index on recommended practices in all 06 ACZ of West Bengal. So, the analytical study concluded that majority of selected Poultry entrepreneurs have medium knowledge and adoption level about improved farming practices in all 06 ACZ of West Bengal, which is very much indicative in relation to future animal Husbandry development strategy as well as planning of W.B.

In conclusion the analytical study revealed that among all independent variables such as-Mass media sources, personal localitenes, cosmopoliteness and communication sources, attitude & knowledge level were the key elements which directly and indirectly helped to improve the adoption index of Poultry farmers for successful entrepreneurship development in all zones of W.B. India. The important variables such as-Mass media,

knowledge in Poultry, social participation, education, family education status, family type were the key variables to measure adoption index of Poultry owners in all ACZ of W.B. Majority of Poultry owners in *Terrain Zone* utilized several mass media as an information sources, whereas in *New alluvial zone*, majority used personal cosmopolite information sources and in *Coastal zone*, majority used Personnel Localite Sources for adoption of improved poultry farming practices. The majority of selected entrepreneurs had medium Knowledge and adoption in improved Poultry farming practices in all Zones of W.B.

On the basis of the analytical study, it was recommended that, to formulate any development planning, emphasis should be given on all communities, income, literacy, Marketing orientation, Attitude, knowledge level, adoption rate of improved technologies, mass media exposure, social participation, personal Cosmo politeness and personal localiteness are to be considered for substantial empowerment of stakeholders through Poultry enterprises. The basic parameters are more or less same and only degree and magnitude of parameters will vary depending upon different ACZ, for which experts are to be consulted during planning. Poultry farming should be encouraged for all types of people in all AC zones- specially, New Alluvial, Hill, Terrain and Coastal Zones are to be more emphasized for this farming practices.

References

Chandra, K. (1979). Differential adoption of dairy innovations by the farmers of ICDP, Karnal. Ph.D. Thesis (Unpublished), P.U., Chandigarh.

Chug, D. S. (1986). Suitability of dairy farming technology and factors affecting knowledge and adoption.

M.Sc. Thesis submitted to the G. B. Pant University of Agril & Technology, Pantnagar.

Daipuria, P. R. (2001) Knowledge and adoption of Agricultural Technologies in Maratha Wada. Indian Res. J. Ext. Edu. 7(1) January.

Dana, S.S. Khandekar, N, Sharma, R. P. and Sinha, S. P. (1998). Factors affecting adoption of commercial poultry production technologies. Indian Jr. of animal Res. 32(1): 1-4.

Dasgupta, S. (1968). Relative predictability of five indices of adoption of recommended farm practices. *Sociologia Ruralis*, 8: 1-21.

Goswami, A. (2000). The Impact of Extension Education on the Social, Psychological and administrative behaviour of the livestock owners of the Sundarbans, West Bengal. Ph.D. thesis submitted to the University of Kalyani, West Bengal.

Goswami, M.(2007). A study on adoption behaviour of Kroiler poultry farmers in Murshidabad district of West Bengal. M.V.Sc. thesis submitted to W.B. University. of Animal & fishery Scs.

Hazarika, P. (1983). A study of correlates of knowledge and adoption behaviour of the dairy farmers under I.C.D.P., Khanapara, Assam. M.Sc. Thesis, Kurukshetra University, Kurukshetra.

Hussain, M. A. (1968). Adoption of improved animal husbandry practices in Hyderabad district. M.Sc. Thesis submitted to Andhra Pradesh Agriculture University, Hyderabad.

Nataraju, M. S. and Channegowda, M. B. (1984). Differential adoption of improved dairy practices by small & marginal farmers & agril laborers. *Indian Journal of Extn Edn*, 20(3&4): 63.

Roy, R. (2006). Adoption behaviour of Kroiler poultry farmers in Sundarban

- of West Bengal. M. V. Sc. thesis submitted to W.B. University. of Animal & fishery Sciences.
- Singh, J. N. (1982). A study of suitability of dairy farming innovations and factors associated with their adoption by cattle owners of ICDP, Gurgaon (Haryana). Ph.D. Thesis submitted to Kurukshetra University, Kurukshetra.
- Sundaraswami, B.; Rao, M. K. S. and Awatigar, M. B. (1978). Impact of T.V. on farmers' knowledge. *Indian Journal of Extension Education*, 39(1): 23-26.
- Tripathi, S. L. and Jyoti, J. S. (1971). Socio-personal factors influencing the adoption of improved farm practices. *Allahabad Farmer*, 18(5): 347-354.
- Jha, P. N. and Shaktwat, G. S. (1972). Adoption behavior of farmers towards hybrid Bajra cultivation. *Indian Journal of Extension Education*, 7(1 &2): 24-29.
- Kunzru, O. N.; Sagar, R. L. and Srivastava, N. K. (1987). Constraints in adoption of HS vaccine. *Indian Journal of Extension Education*, 23(3 &4): 74-76.
- Sarkar, A. K. (1981). A study of communication patterns and factors affecting adoption of technology in West Bengal. Ph.D. Thesis submitted to National Dairy Research Institute, Karnal.
- Sayeedi, A. G. (1983). A study of knowledge, attitude and adoption of dairy farmers towards dairy scientific activities in Jammu District (J & K State). A dissertation, submitted to Kurukshetra University, Kurukshetra.
- Sivanarayana, G. and Jayarama, Reddy, S. (1995). Constraints in the adoption of improved sheep and goat practices by the small and marginal farmers of diversified farming. *Indian Journal of Dairy Science*, 48(4): 306-308.
- Sohal, T. S.; Singh, J. N. and Singh, J. P. (1982). Impact of extensive extension education on the adoption of scientific dairy farming by landless rural families around Karnal (Haryana). *Indian Journal of Dairy Science*, 35(4): 447-453.

How to cite this article:

Arunasis Goswami and Sukanta Biswas. 2020. Knowledge based Adoption Behavior of Poultry Farmers in Different Agro-Climatic Zones of West Bengal, India. *Int.J.Curr.Microbiol.App.Sci*. 9(12): 2525-2534. doi: <https://doi.org/10.20546/ijcmas.2020.912.300>