Asian Journal of Agricultural Extension, Economics & Sociology
11(1): 1-5, 2016; Article no.AJAEES.25251
ISSN: 2320-7027

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Adoption Percentage of Azolla Production: A Post Training Evaluation

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Authors' contributions

This work was carried out in collaboration between all authors. Author GD designed the study, wrote the protocol and supervised the work. Authors SS and SKD carried out all laboratories work and performed the statistical analysis. Author GD managed the analyses of the study. Author GD wrote the first draft of the manuscript. Authors SKD and SS managed the literature searches and edited the manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2016/25251
Editor(s):
(1) Kwong Fai Andrew Lo, Agronomy and Soil Science, Chinese Culture University, Taipei, Taiwan.
Reviewers:
(1) Roxana Piastrellini, Universidad Tecnológica Nacional, Argentina.
(2) Teddy Triza Nakanwagi, Makerere University, Uganda.
(3) J. Tamizhkumaran, Madras Veterinary College, Chennai, India.
(4) Kaushal Kishore Choudhary, Dr Jagannath Mishra College, Muzaffarpur, India.
Complete Peer review History: http://sciencedomain.org/review-history/14402

Short Research Article

Received 24th February 2016
Accepted 21st April 2016
Published 1st May 2016

ABSTRACT

The awareness for azolla sp (*Azolla pinnata*) cultivation was created among the rural people in eastern zone of India by Coochbehar Krishi Vigyan Kendra, West Bengal by conducting residential and non-residential training programme on successful azolla production. The training was conducted during January, 2015 to June 2015. The purpose of this study was to identify the adoption percentage of azolla trainees and its distribution among the different independent variable selected for the study. The study was conducted on the respondents of Coochbehar district, West Bengal during December, 2015 to January 2016. The research design was followed in the study was survey research method. The sample size of the study was 200. The dependent variable of this study was adoption and independent variables were age, gender, education and caste. The descriptive statistics like frequency, percentage, range were used for the investigation. This study

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had shown the relation of the adoption of the azolla production with the different independent variable.

Keywords: Adoption; azolla; training; awareness; trainees; residential; non-residential.

1. INTRODUCTION

Azolla production especially *Azolla pinnata* in Coochbehar district is hereby increasing day to day due to rise in it's demand and awareness. The rural people of Coochbehar district not only depend on agriculture, they are also involved in animal husbandry and fishery production. The agriculture land is increasing day by day whereas used of different type of herbicide decreasing the grass and fallow land which are major feeding sources of house hold animal in Coochbehar district. Above problem stimulated Coochbehar Krishi Vigyan Kendra to organize residential and non-residential training programme on azolla sp production which are alternative sources of feed of household animal, poultry, ducker and also fishery. Azolla sp is very good sources of feeds of cattles, ducks, hens and pigs [1]. Azolla contain huge amount of nutrients and vitamins which is essential for household animals. It contains essential amino acid, Vitamin-A, Vitamin-$B_{12,}$ *B*-carotene, calcium, phosphorus, potassium, iron and magnesium. Innovations that have a clear, unambiguous advantage in either effectiveness or cost-effectiveness are more easily adopted and innovations that are perceived by key players as simple to use are more easily adopted [2,3,4]. Plsek [5] concluded from his study that Perceived complexity can be reduced by practical experience and demonstration. It has been found from studies that if the innovation can be broken down into more manageable parts and adopted incrementally, it will be more easily adopted [4,5]. Interventions to reduce the number and extent of such response barriers improve the chances of successful adoption. If the benefits of an innovation are visible to intended adopters, it will be adopted more easily [6-9]. Adler et al*.* [10] reported that if the knowledge required for the innovation's use can be codified and transferred from one context to another, it will be adopted more easily. Some scientists [11,12] found from their study that if the innovation meets an identified need by the intended adopter, he or she is more likely to adopt it. The adoption of innovations by individuals is more likely if they are homophilous that is, have similar socioeconomic, educational, professional, and cultural backgrounds with current users of the innovation [13-15]. The awareness for azolla sp cultivation had been created among the rural people of Coochbehar district by Coochbehar Krishi Vigyan Kendra by conducting residential and non-residential training programme on successful azolla sp production. The training was conducted during January, 2015 to June, 2015 and the study was conducted during December, 2015 to January, 2016. The purpose of this study is to identify the adoption percentage of azolla sp and its distribution among the different independent variable selected for the study.

2. MATERIALS AND METHODS

The study was conducted on the respondent of Coochbehar district, who took azolla training by Coochbehar Krishi Vigyan Kendra, (Coochbehar, West Bengal) from January, 2015 to June, 2015. Survey research design was used in this study. The data collected by pretested well structure interview schedule. Demonstration and low cost production system technique was used to motivate the farmers. Both method and result demonstration technique were used. Booklet, azolla culture, micronutrient, fertilizer and the sympouline plastic (1.82 meter×2.74 meter) were given to the farmers to cultivate azolla sp. The respondents for this study included from the rural people of Coochbehar district. The entire trainees available at the time of investigation were considered as respondents. The sample size for the study was 200. The dependent variable of this study was adoption and independent variables were age, gender, education and caste. The variables were selected based on recommendation of the scientist of Uttar Banga Krishi Viswavidyalaya, Coochbehar, West Bengal. The descriptive statistics like frequency, percentage and range were used for the investigation.

3. RESULTS AND DISCUSSION

It was shown from the investigation that a majority of the respondent participated in azolla training were female farmer (75%) followed by male farmer (25%). It was found that majority percentages of respondent adopted azolla production were female farmer (96.66%) from followed by male farmer (30.00%). (Adoption

percentage of each category calculated on the basis their participation percentage. Adoption percentage = number of respondent adopted the technology /number of respond participated in the technology adoption programme × 100). It was shown from survey that the majority percentage of the farmer participated in azolla training in general belonged to the age range of 35 yrs to <50yrs (41.00%) of the age group followed by 25yrs to <35yrs (22.50%) and similarly adoption percentage of azolla production were high in case of 35yrs to <50 yrs age group (96.34%) followed by 25yrs to <35 yrs age group (84.44%) and >50yrs (81.81%) age group. It was shown that majority of respondent participated in azolla training were ST (65%) category farmer followed by SC (18%) category and after investigation it was found that adoption percentage of azolla production were high in case of ST (91.53%) category farmer followed by SC (69.44%) and OBC (57.14%) category farmer. It was also shown from the investigation that only 40% of the GEN category farmers adopted azolla production. It was observed that the majority percentage of the respondents educational level at the time azolla training were primary school (40.00%) pass followed by middle school (21.50%) pass and it was found from the investigation that majority percentages of the respondents adopted azolla production were primary school pass (87.50%) closely followed by middle school (86.04%) pass. The finding are in line with the results reported by Anonymous [13,14,15]. It was found from the investigation that overall percentage of the adoption of azolla production was 80.00%. The findings are in line with the results reported by Anonymous [2,3,4, 16,17].

Table 1. Variables and their measurement

Variable	Measurement
A. Dependent variable	
1. Adoption	Schedule developed for the study.
B. Independent variable	
1. Age	Chronological age of the respondents in completed years.
2. Gender	Schedule developed for the study.
3. Education level	Procedure used by Sivamurthy (1994).
4. Caste	Schedule developed for the study.

Table 2. The adoption and participant percentage of the trainees based on different independent variable

Sl. no.	Variable	Number of adopted	Number of participant	Participant percentage	Adoption percentage
A.	**Gender**				
1.	Male	15	50	25	30.00
2.	Female	145	150	75	96.66
B.	**Age**				
1.	18yrs to <25 yrs	16	40	20.00	40
2.	25 yrs to<35 yrs	38	45	22.50	84.44
3.	35 yrs to <50 yrs	79	82	41.00	96.34
4.	>50 yrs	27	33	16.50	81.81
C.	**Education**				
1.	Illiterate	0	0	0	0
2.	Can read only	0	0	0	0
3.	Can read and write only	24	29	14.50	82.75
4.	Primary school	70	80	40.00	87.50
5.	Middle school	37	43	21.50	86.04
6.	High school	24	32	16.00	75.00
7.	Pre-university				
8.	Graduate and above	5	16	8.00	31.25

Sl. no.	Variable	Number of adopted	Number of participant	Participant percentage	Adoption percentage
D.	**Caste**				
1.	GEN (General)	8	20	10.00	40.00
2.	SC (Scheduled caste)	25	36	18.00	69.44
3.	ST (Scheduled caste tribe)	119	130	65	91.53
4.	OBC (Other Backward Classes)	8	14	7	57.14

n=200

Table 3. Overall adoption percentage of azolla production

Sl. no.	Total number of people adopted azolla production	Total number of people take azolla training	Adoption percentage
1.	160	200	80.00

n=200

4. CONCLUSION

It can be concluded from the investigation that female farmer more interested to cultivate azolla than male farmer. It may be due to as azolla sp can be cultivated in a very small area and within home circle [18]. It was shown from the investigation that majority of the farmer adopted azolla production belong to the age group of 35 yrs to <50 yrs. It may due to that this age range of respondent basically involved in livestock cultivation. It was also found from the study that majority percentage of ST category farmers adopted azolla production followed by SC category farmers. It may due to more involvement of tribal farmers to rearing cattle, pigs, ducks and hens [19,20]. It was shown from the investigation that majority percentage of farmer adopted azolla production were primary school pass. It was also observed that graduate and above pass category farmers least adopted of azolla production then other category farmers. It was shown that educated respondent were not interest [21] to cultivate azolla, it may be due to their less participation in the agriculture and allied sector. The overall percentage of the azolla production was very high. It may be due to low cost and easy way [1] of azolla production shown by coochbehar Krishi Vigyan Kendra.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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