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Assessment of vocational training programmes on mushroom farming and p.h.t of mushroom organized for urban women of gamaharia block in saraikela kharsawan district

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Abstract
KVKs are always conducting skill oriented vocational training programmers on various topics in agriculture and in allied subjects. Through these programmes the participants acquire knowledge and skill for their self employment and income generation. 5 training and demonstration programmes conducted on mushroom farming 3 on PHT of mushroom for 150 urban women at KVK Saraikela Kharsawan in three years i.e. form 2015-2018. In order to evaluate these training programmes, the present study was undertaken to assess the gain in knowledge, adoption status of the enterprise, adoption status of the PHT of mushroom as enterprise and suggestions from the mushroom growers to enhance the entrepreneurship in mushroom farming. It was found that maximum adoption of 42% was observed during the year 2017-2018. Among the various practices of mushroom cultivation maximum knowledge gain (54.8%) was observed in variety of cultivation method. Diseases and pest management was least understood by the participants (21.4%) followed by crop management 38.5% and value addition 39.4%. Hence, there is need of more training program on PHT value addition and emphasis should be given on its entrepreneurial technologies for the ease of mushroom growers. As suggestions perceived by 55 mushroom growers, availability of quality spawn (40.2%), advance training on preservation and packaging technologies and marketing facilities (20.2%) were three major suggestions for successful development of mushroom entrepreneurship in Jharkhand. Under PHT mushroom pickle making as enterprise observe 3% followed by domestic purposes 20.9%.

Keywords: Mushroom farming, PHT, Value Addition, Preservation, Packaging, Entrepreneurial.

Introduction
Mushroom farming is very popular these days among people of urban as well as in rural area as biggest income generating agri business enterprise. Mushroom is valued as delicacy having tremendous attributes on the basis of food value is now recommended as health food rich in protein by Food and agricultural organization of united nations for bridging the protein malnutrition gap in combination with soybean in the developing countries of the world. Mushroom as food is important as it is produced from recyclable agro-wastes/ agro by-products. Its cultivation don't require agricultural land, as it is grown in side the protected houses with intensive space utilization in vertical/ horizontal cropping. However infrastructure is needed for preparations for cultivation and for post harvest handling. Mushroom farming can play a significant role to eradicate malnutrition and can create self employment opportunities for SHGs, women and unemployed rural youth. Kirishi Vigyan Kendra Saraikela Kharsawan is imparting training in mushroom farming and its preservation processing technologies to the farmers, farm women and rural youths. During 2015-2018 5 such vocational training programmes of 5 days duration were organized regarding mushroom farming in which 150 women of Gamharia Block in Saraikela Kharsawan district participated. In order to evaluate the outcome of these training programmes, a study was conducted to assess the socio-economic profile of the trainee, gain in knowledge adoption status of the enterprise and to get suggestions from mushroom growers for enhancing the entrepreneurship in mushroom farming among the urban as well as rural farmers of the district.

Materials and Methods
The study was conducted in the district Sa-Kh. A performa was developed comprising general information background of participants such as age. education, occupation, landholding, house holding etc. Five vocational training courses on mushroom farming were organized at K.V.K. Sa-Kh during the years 2015 to 2018 in which a total of 150 urban women were trained.

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Out of these 70 women were contacted personally to know whether they had set up the enterprise or not after getting training. To study the gain in knowledge, a simple evaluation performa consisting of 35 questions (Five question for each practice) was distributed among 70 trainees before and after training. One mark was assigned for each correct answer and zero for every incorrect answer. Thus, 5 marks were given for each practice and total attainable score for each practice came out to be 70x5=350 marks. Hence, gain in knowledge was. from the difference of scores obtained in pre and post knowledge test of the trainees. The dependant variable of this study was gain in knowledge of participants. The following characteristics were selected as independent variables namely age, education, family type, membership of society, farming experience and extension media contact. The relationship was further explored between each of the selected characteristics of participants (independent variables) and their knowledge gain regarding mushroom cultivation (dependent variable). Furthermore, a sample of 55 mushroom growers was selected proportionately to collect the data regarding suggestions to boost the mushroom entrepreneurship through structured schedule by personal interview with the respondents the date was tabulated and analyzed using frequency and percentage.

Results and Dissuasion

Socio-economic profile – The data (Table – 1) showed that maximum number of the respondents belong to middle age group (74.3%) having education up to middle(27.1%) and matriculation (22.8%). The trainees were predominantly from urban background. More than 50% of the respondents engaged in part time services on low wedges and most of the time they spent in child care and homemaking. Less number belongs to joint family (31.4%) and serving outside work for earning. Middle age women were more (74.3%) participated the programme having higher education level graduation (22.8%). Raw materials such as paddy straw for cultivation, compost and soil are readily available from their nearby villages.44.2% participants having pucca and 2 roomed with some agan, veramda. Mushroom cultivation enterprise does not require arable land, so that participants having pucca house with two rooms and vermnda though there are land less accepted and adopted mushroom cultivation and value addition in cultivated produce as subsidiary occupation. As separate and secure infrastructure for mushroom cultivation is the primary need of starting this as enterprise. Though the some participants having large farm holdings(54.2%) but scarcity of infrastructure (4.2%) could not take this as enterprise but the domestic purpose and for nutritional security started mushroom cultivation. Large infrastructure (2.85%) holding participants wanted to adopt this as enterprise to enhance their family income and generate self employment.

Adoption status

The maximum adoption of (42%) was absorbed during 2017-18 and minimum adoption(28%) during 2015-16 (Table-2). The percentage of non adopters was on higher side during 2015-16 72 percent and minimum non adopters during 2017-18 was 57%. The percentage of non adopters was on higher side (72%) probably due to the fact that small scale mushroom farming is a seasonal activity. Another reason for non adoption is unavailability of secure separate infrastructure of the participants. However, introduction of more training programmes for variety of mushroom cultivation technologies for all seasons along with training on postharvest technologies, value addition,nutritional value of mushroom, marketing and entrepreneurship development motivated the participants and enhanced the adoption in 2016-2017-18. 37% -42%.

Gain in knowledge:-(Table-3) Pre training scores of various practices ranged from 2.8 percent in case of diseases and pest control management to 22.8% in case of variety wise cultivation method of mushroom. Post training score of various practices ranged from 24.3 percent in case diseases and pest control management to 77.7percent in case of variety wise mushroom cultivation technologies. Pre training knowledge score was not at all satisfactory for all the aspects of training programme. However, the knowledge score after training was quite satisfactory among the participants in all aspects of the training programme expect disease and pest management and crop management methods. Where the gain in knowledge score ranges from 21.4 percent in diseases and pest control to54.8 percent in variety cultivation method. The crop management diseases and pest control and value addition score low in case of all participants. So, more emphasis needs to be given to these practices during the training programme in terms of demonstration and increase in no of course.

Table 1: Socio economic profile of the respondents n =70

S. No	Variables	Frequency	Percentage
1	Age		
	Young (18-25)	10	14.3
	Middle(25-45)	52	74.3
	Old (above 45)	8	11.4
2.	Education		
	Illiterate	4	5.7
	Primary	3	4.2
	Middle	19	27.1
	Matriculate	16	22.8
	Higher Sceondary	12	70.1
	Graduation and above	16	22.8
3.	Occupation		
	Farming	12	17.1
	Other (service, business and labour)	58	82.8
4.	Family type		
	Nucleus	48	68.5
	Joint	22	31.4
5.	Members of a society / organization	7	10.0
6.	Farm size		

	Landless	3	4.2
	Marginal(<1ha)	11	15.7
	Small(1-2 ha)	23	32.8
	Semi Medium (2.4 ha)	31	44.2
	Medium (4-10 ha)	2	2.85
	Large (> 10 ha)	0	0
7.	House Holding size		
	Kuchha Room 1 + 1 Space	10	14.2
	Kuchha Room 2 + 1 Space	38	54.2
	Pucca Room 1 + 1 Space	22	31.4
	Pucca Room 2 + 1 Space	0	0
	Pucca Large House	0	0

Table 2: Adoption status of vocational trainings.

Year	No of vocational trainings conducted	No. of participants	Adopters	Non adopters	Non adopters (%)	Percentage adoption (%)
2015-16	1	25	7	18	72%	28%
2016-17	2	62	23	39	63%	37%
2017-18	2	63	27	36	57%	42%

Table 3: Gain in knowledge about different practices of mushroom cultivation

Technology	Score project obtained before training	Percentage	Score points obtained after training	Percentage	Gain in points	Percentage
Variety wise cultivation method	80	22.8	272	77.7	192	54.8
Compost Preparation	20	5.7	180	51.4	160	45.7
Filling and spawning	55	15.7	220	62.8	165	47.1
Casing	15	4.2	185	52.8	170	48.5
crop Management	15	4.2	150	42.8	135	38.5
Diseases and pest control	10	2.8	85	24.3	75	21.4
Food value and Nutrition	25	7.1	170	48.5	145	41.4
Value Addition	12	3.4	150	42.8	138	39.4

Women score differently due to their varied personal. Socio-economic or psycho-physical characteristics, Hence, the nature of relationship between participants characteristics and their knowledge gain was assessed by correlation co-efficient (Table 4) three of the selected characteristics of the participants out of six viz. education (r=0.61) mushroom farming experience (r=0.62) and extension media contact (r=0.57) showed significant positive correlation with the knowledge gain of participants. The positive and significant correlation indicate that the participants with higher level of education. More farming experience and extension media contract had better knowledge gain of participants. The positive and significant correlation indicate that the participants with higher level of education, more farming experience and extension media contract had better knowledge gain. An interesting finding was that the age of the respondents showed non-significant relationship (r=0.04) with knowledge gain of the participants which lead to the fact that knowledge gain of the participants was not affected by the age of the participants. Similarly family type (r=-0.31) and membership of society (r=0.06) also showed non- significant relationship with knowledge gain of the participants. The above findings were in conformity with the findings of Jahan *et al* (2010).

Suggestion given by the farmers – The results showed that continuous supply of quality spawn should be maintained by the institutions or laboratories for the continuity in production. As suggestion perceived by 55 mushroom growers, availability of quality spawn (40.2%) advance training on preservation and packaging technologies and marketing facilities (20.2%) were three major suggestions for successful development of mushroom entrepreneurship in Jharkhand. Beside these suggestions, 35%of the respondents felt that regular visit of extension scientists to the mushroom farm of the farmers can improve the output of farm and 40% of respondents suggested that availability of the facilities for storage, preservation and value addition of the mushroom will results in remunerative mushroom cultivation occupation.

Table 4: Correlation between knowledge gain of the participants and their selected characteristics.

Characteristics	Correlation, Coefficient (r)
Age	-0.04
Education	-0.61
Family Type	-0.31
Membership of society	0.06
Farming experience	0.62
Extension media contact	0.57

Non-significant at p<0.05 lever of significance

Table 5: Suggestions given by the respondents.

Suggestion	Frequency	Ranking
Quality spawn	62	1
Regular field visit	35	IV
Storage, preservation and value addition	40	III
Practical demonstration	60	II
Training on advanced Cultivation methods	25	VI

Conclusion

The present study clearly indicates that the skill training programmes are most important for the unemployed women those who are in need of added income in their family budget. The regular assistance and guidance are needed for developing knowledge, confidence among such women. Advance training demonstration on PHT and storage, preservation and value addition of mushroom cultivation are needed for nutritional care of family and for the development of sustainable entrepreneurship in mushroom farming.

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