

# **Mushroom Spawn Production for the Entrepreneurs of Kashmir valley**

**Report**  
**(2012–2015)**

**Principal Investigator**

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**Sponsored By**  
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- 1 File number and title of the project** : BT/PR6980/SPD/11/1417/2012  
*“Mushroom spawn production for the  
Entrepreneurs of Kashmir Valley”*
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- 3 Dates of sanction and completion of the project:** : 18<sup>th</sup> September, 2012 to 25<sup>th</sup> Oct. 2015.

#### 4. Project objectives as approved by DBT

- To impart training on mushroom cultivation and market linkages among rural/sub-urban women of the valley.
- To conduct the training programmes on quality spawn production for mushroom cultivation for the educated women of the valley.
- To train sixty women per year in mushroom cultivation and pure spawn production (30 each in mushroom cultivation and spawn production).

#### 5. Achievements/progress vis-à-vis above objectives

S.No	Objectives as approved by DBT	Achievements
1.	To impart training on mushroom cultivation and market linkages among rural/sub-urban women of the valley.	 <b>A total of 90 trainees were selected and trained for mushroom cultivation during 2013-2015. Each year a total no of 30 trainees were selected for mushroom cultivation training.</b> The training was imparted twice a year at different demonstration units and each training was spread over a period of 3 months. In the first year of the project 1 <sup>st</sup> batch of 15 local women were involved and trained for mushroom cultivation at kremshore, Budgam followed by another lot of 15 trainees at Aarigam Budgam. Similarly another 30 trainees were imparted training in the next consecutive year (2014) at Aarigam Budgam in two batches. In the last year another district i.e. Baramulla was selected for the imparting training at two different places Alora and Khunchipora, Tangmarg. Again a total number of 30 local women (in two batches) were fully trained The trainees were given complete practical training from the basic ingredients of raw materials required for mushroom cultivation, making of proper compost on scientific lines to the production and marketing of the produce (Figs 1-6).

2.	To conduct the training programmes on quality spawn production for mushroom cultivation for the educated women of the valley.	<p>✚ Training programme for quality mushroom spawn production at Kashmir University was carried out successfully. <b>A total no. of 90 educated urban/suburban women were given complete knowledge and training about the production of spawn on scientific lines.</b> The training was imparted in 3 phases. 30 educated women (10 in each phase) were selected and were given trainings for production of pure and disease free spawn each year. This training has helped them to start new ventures as they can develop their own spawn production units (Figs 7-19).</p>
3.	To train sixty women per year in pure spawn production (30 each in mushroom cultivation and spawn production).	<p>✚ The project staff has successfully achieved the target of training 60 women per year in mushroom cultivation and spawn production (30+30) in the 3 year duration of the project and <b>thus a total no. of 180 women</b> from different areas of the valley were trained for both the programmes. 30 rural women were given trainings related to the mushroom cultivation at the demonstration units. Each year 15 selected trainees were given complete training during early spring and later another lot of 15 trainees were trained in Autumn. Besides trainings they were also motivated for employment opportunities within their own premises. <b>Similarly 30 educated women of the valley were trained for quality mushroom spawn production at spawn production unit of Kashmir University per year during the project tenure.</b> They were given trainings for</p>

		production of pure and disease free spawn. A total of 90 women got trained for this activity during project tenure.
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**6. Deviation if any from the project objectives and reasons there of: Nil**

**7. Bottle Neck in the project (if any): Nil**

**8. List of publications/ patents filed: Nil**

**9. Technology developed/ transferred:**

This program was completely based on skill development and training. Unemployed young ladies were given complete training from basic process of mushroom cultivation to the final marketing of the mushroom products. Cultivation of mushroom and spawn making was imparted to the selected trainees under the guidance of project staff. They were fully trained about all the processes i.e. from wetting of straw to the casing and final picking of mushrooms and spawn making (from washing of grains to the inoculation of the spawn bottles). Besides this trainees were also given complete knowledge about precautions that need to be taken while preparing spawn under hygienic conditions.

**10. Summary of the Completed Project (within 300 words):**

The Project “*Mushroom Spawn Production for the Entrepreneurs of Kashmir Valley*” was supported by the DBT under Biotechnology based programme for women. The aim of the project was to create a sense of independence in the rural/urban women of the valley by training and providing them with the technical knowhow of mushroom cultivation and spawn production so that they can start their own cultivation units and become economically stable. The project staff has successfully achieved the target of training almost 180 women trainees from different parts of the valley in three year duration of the project. 90 rural women were given trainings relating to the mushroom cultivation at the different demonstration unit each year and 90 urban educated women were fully trained about the spawn production at spawn production unit of Kashmir University. They were given trainings for production of pure and disease free spawn. Availability of quality spawn was also ensured for other entrepreneurs who were interested to produce the mushroom on commercial lines in the valley. Many farmers including entrepreneurs from different districts were provided with quality spawn

from spawn production laboratory at Kashmir University. It has helped them to increase the healthy mushroom production among the rural as well as in commercial urban growers. Trainees were also helped to develop proper market linkages for selling the mushrooms and its products.

Mushrooms market is sprouting enormously in the valley these days. This has created a great opportunity for these young ladies to start new ventures from supplying of pure spawn to the whole fruiting body of mushrooms. So many interested trainees especially from the rural areas applied for loan under different agricultural Schemes provided by State Government and started their own mushroom cultivation units within their own premises (Table 1) during the project tenure. Besides this keeping in view the demand for pure and disease free spawn in the valley many of the trainees who were trained for spawn making under this programme had also applied for loan generated from the government departments (EDI J&K Govt) to establish their own spawn production units (Table 2).

**Table 1. List of trainees who have already started their own Mushroom cultivation units.**

S.no.	Name	Parentage	Address
1.	Shahzada Akther	W/o Shabir Ahmad Bhat	Kremshore Budgam
2.	Rubeena Akther	D/o Ghulam Mohmmad Bhat	Kremshore Budgam
3.	Shahzada Farooq	D/o Mohmmad Shafi Bandroo	Kremshore Budgam
4.	Arifa Kousar	D/o Gh. Rasool Najar	Kremshore Budgam
5.	Rehana Shafi	D/o Mohd Shafi Bandroo	Banderpora Kremshore
6.	Saima Bashir	D/o Bashir Ahmad bandroo	Banderpora Kremshore

**Table 2. List of trainees who were interested in starting their own Spawn production units.**

S.no.	Name	Parentage	Address
1.	Nighat Salaam	D/o Ab. Salaam Naikoo	Hibdangerpورا, Baramulla
2.	Rafia Rashid	D/o Ab. Rashid Padder	Nanil, Anantnag
3.	Kousar Qadir	D/o Gh. Qadir Malik	Dalipora, Pulwama
4.	Iqra Shakeel	D/o Shakeel Ahmed Khan	Gangipora, Budgam
5.	Masrat Jan	D/o Mohd Ibrahim Bhat	Harwan, Srinagar
6.	Shazia Iqbal	D/o Mohd. Iqbal Bhat	Shalimar, Srinagar

7.	Neelofar Majid	D/o Ab. Majid Beigh	Malabagh, Srinagar
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### 11. Visible impact & suggestions for way forward:

The project was supported by the DBT under Biotechnology based programme for women. The mushroom training cum demonstrations which were held at different units during the project tenure have initiated a change in the horizon of many illiterate/ literate women of these areas (District Baramulla, Srinagar and Budgam) to earn their livelihood within their home premises. 180 Trainees (90 for mushroom Cultivation and 90 for Spawn production) were benefitted by this project. This project had a positive impact in following ways:

- **Entrepreneurship development:** The aim of program was to help in the economic upliftment of poor unemployed women in rural/urban areas especially those who are interested to do some income generating work. As this program was skill based to impart training on cultivation as well as spawn production on scientific lines and created more avenues of employment for these ladies within their residential premises, thus giving a new definition to women empowerment and entrepreneurship development. Many among the trainees applied for the loan and then started their own mushroom cultivation units e.g. Shahzada Akther, Rubeena Akther, Shahzada Farooq from kremsore Budgam and Saima Bashir from Banderpora, Kremshore (Table 1) have already established the mushroom cultivation units. Besides this some of the young ladies from other districts had also applied for loan from government agencies for establishment of Spawn production units (Table 2). Certificates for receiving trainings were also issued to the trainees which helped them in receiving the financial assistance from different Govt. Departments.
- **Impact on Society:** Since rural women in Kashmir remain confined to their homes and their services are not added to gross domestic product (G.D.P) despite their hard work in agriculture, the mushroom cultivation being Indoor agriculture activity suited the rural women to help them in their economic upliftment. This program changed their lives in many ways. Now they were much confident, skilled and trying to be financially independent as a number of trained women started their own units. In addition, training programme for quality Mushroom spawn making at Kashmir University helped trainees to develop skills for having their own spawn production units. The Spawn Production Laboratory at Kashmir University is highly beneficial

for farmers and other mushroom entrepreneurs of valley who were provided pure and superior spawn for button mushroom cultivation throughout the project tenure.

- **Creation of Employment opportunities:** This project has not only inculcated the skill of mushroom cultivation and spawn production among trained ladies but also helped them to create facilities for starting their own ventures. 6 ladies were granted loan from Govt. Agricultural Department for starting the units. Some more young enthusiastic ladies who were part of the programme have already applied for loan generated from the government departments (EDI J&K Govt) to develop their own cultivation units. However some of them couldn't establish their own units but they were easily engaged by unit holders in their newly established mushroom farms as well as by already established unit holders and rendered them with satisfactory wages. This has created a good employment opportunity for these economically backward ladies. In fact some of them have started working in creation of facilities for spawn production at their own level.
- DBT should support such schemes as it not only helps many poor rural women in enhancing their skills but also creates a sense of economic stability and can eradicate the problems of unemployment to some extent.

**Training programmes conducted: A total of 15 training programmes were conducted. 6 training programmes for mushroom cultivation** were conducted at different mushroom cultivation units in three years of project tenure **similarly 9 spawn production training** were organized for selected trainees at Kashmir University (spawn production lab.)

**No. of Trainings organized per year: 5 trainings were conducted per year. A total no. of 15 trainings** was given to all the selected trainees in a period of three years. The trainees were given complete training for mushroom cultivation and spawn production.

**No. of People Benefitted: 180 Trainees got benefitted by imparting training in mushroom cultivation** and spawn production during the project tenure (**90 for mushroom Cultivation and 90 for Spawn production in the project tenure of 3 years**).

- A total of 90 trainees were selected and trained for mushroom cultivation during 2013-2015. Each year a total no of 30 trainees were selected for mushroom cultivation training. The training was imparted twice a year at different demonstration units and each training programme was spread over a period of 3 months. In the first year of the



project I<sup>st</sup> batch of 15 local women were involved and trained for mushroom cultivation at Kremshore, Budgam followed by another lot of 15 trainees at Aarigam Budgam. Similarly another 30 trainees were imparted training in the next consecutive year (2014) at Aarigam Budgam in two batches. In the last year another district i.e. Baramulla was selected for the imparting training at two different places Alora and Khunchipora, Tangmarg. Again a total number of 30 local women (in two batches) were fully trained. The trainees were given complete practical training from the basic ingredients of raw materials required for mushroom cultivation, making of proper compost on scientific lines to the production and marketing of the produce.

- Training programme for quality mushroom spawn production at Kashmir University was carried out successfully. A total no. of 90 educated urban/suburban women were given complete knowledge and training about the production of spawn on scientific lines. The training was imparted in 3 phases. 30 educated women (10 in each phase) were selected and were given trainings for production of pure and disease free spawn each year. This training has helped them to start new ventures as they can develop their own spawn production units.

#### **Income level increase:**

The income generated by all the units was satisfactory; the unit holders were able to generate good amount of money from each crop production. **In the Unit I entrepreneur** namely Shahzada Akther (Kremshore, District Budgam) earned **Rs. 20,219 approx.** in first crop while entrepreneur **earned 25,000 during 2<sup>nd</sup> crop during I<sup>st</sup> year** making an **amount of 45,219** (Table 3). Similarly at unit II, the entrepreneur namely Shaheena Akther (Aarigam, District Budgam) was able to make a total amount of **approximately Rs 33,320**. An increased amount of money was made by the same entrepreneur (Shaheena akhtar) as the crop yield was more than the previous year. During the third year of the project another district was selected for training programmes and the beneficiaries **namely Kulsooma Akhtar and Shabnam Lone** were from Alora and Khunchipora respectively. Both the beneficiaries showed a satisfactory result in terms of the income generated by the mushroom crop production.

**Table 3: Year wise income generated for beneficiaries (farmers)**

<b>Year wise</b>	<b>Unit I</b>	<b>Address</b>	<b>Unit II</b>	<b>Address</b>
I <sup>st</sup> year	Rs 45,219	Kremshore, District Budgam)	Rs 33,320	(Aarigam, District Budgam)
2 <sup>nd</sup> year	Rs 40,200	(Aarigam, District Budgam)	Rs 34,300	(Aarigam, District Budgam)
3 <sup>rd</sup> year	Rs 35,000	(Alora, District Baramulla)	Rs 43,750	(khunchipora, district Baramulla)
<b>Total</b>		<b>Rs 1,20,419</b>		<b>Rs 1,11,370</b>

## Training cum demonstration for cultivation of Mushroom at Unit I and II.



Fig 1. Pile making by the trainees



Fig 2. Turning of pile by trainees



Fig 3. Addition of gypsum to the pile



Fig 4. Filing of trays before spawning



Fig 5. Addition of Spawn on compost



Fig 6. spraying of trays by trainees

## Training cum demonstration of spawn making in the spawn production unit in university campus.



Fig 7. Washing of wheat grains



Fig 8. Drying of wheat



Fig 9. Filling of spawn bottles



Fig 10. Plugging of spawn bottles



Fig 11. Autoclaving



Fig 12. Inoculation



Fig 13. Bottles under incubation



Fig 14. Spawn storage chamber



Fig 15. Ready Spawn

## Seven days training programme on Mushroom Spawn Production for Woman Entrepreneurs in University Campus



Fig 16. Trainees with PI



Fig 17. Selected trainees for Spawn production



Fig 18. Certificate Distribution by PI



Pin formation of button mushroom



Mushroom fruiting



Mushroom fruiting



First flush of mushroom fruiting



2and flush of mushroom fruiting

Fig 19. Training Activities