

**COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH**



**FOOD RESEARCH INSTITUTE**

**REPORT ON THE MUSHROOM CULTIVATION WORKSHOPS**

**(2012-2014)**

**BY**

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**October, 2015**

## **EXECUTIVE SUMMARY:**

For the past two decades mushroom cultivation training programmes have been established as yearly training programmes in CSIR-Food Research Institute. Every year at least two training programmes are organised for Church Groups, Associations, Non-Governmental Organizations (NGO's) and individuals from all walks of life, from in and around Ghana and neighbouring countries.

Consumption of edible mushrooms dates back several centuries. These are normally picked in the wild when in season. In recent times however, edible mushrooms have attracted much interest not only for its nutritional benefits but as functional foods because of properties they exhibit such as being anti-mutagenic, anti-tumoral, antimicrobial, and able to modulate the immune system, among others (Garcia-Lafuente *et al.* 2011; El Enshasy *et al.* 2013). In Ghana, the local fresh mushroom market demand has grown from the initial 25 metric tonnes in 1997 to about 400 metric tons and this figure has been increasing steadily every year.

These technical reports hereby reported are the training programmes organised yearly including consultancy services for the Mushroom Growers and Exporters Association of Ghana (MUGREAG). This was conducted for a total of 121 participants within the period between 2012 and 2014 and a total amount of GHc 63,020 was generated.

## **TECHNICAL REPORT ONE**

### **MUSHROOM TRAINING PROGRAMME (2012)**

#### **INTRODUCTION**

Mushroom cultivation training programme is a technology transfer and an income generation activity of the Mushroom Unit in the Microbiology Division of CSIR-Food Research Institute. This activity started at the inception of the National Mushroom Development Project (NMDP) in 1990. The project which is now known as the Mushroom Unit has up to date trained over 3000 participants. Some of these trainees in-turn train others and at least thirty percent of those trained are in active production.

A minimum of two training programmes are undertaken each year. These trainings are of two categories; 2-days Introductory Mushroom Training and 5-days Intensive Training. While the 2-day training programme is an introductory one, which gives a general insight into mushrooms and its cultivation with emphasis on harvesting of fresh mushrooms and cropping techniques, the 5-day training programme is a practical, hands-on programme.

The first training programme which was an International training programme for the year was carried out from 12-16<sup>th</sup> March and this attracted four participants comprising of three Ghanaians and one participant from Benin. A total income of GHS 1,400 was realised for this training programme.

The course objectives and contents are stated below.

#### **COURSE OBJECTIVES**

The course objectives are listed below.

- To provide some basic information on the underlying principles, methods and techniques involved in the production of good quality compost bags
- To demonstrate appropriate methods and techniques involved in the production of high quality fresh mushrooms.

## **COURSE CONTENT**

- Introduction to general aspects
- Mushroom life cycle and spawn production
- Growing oil-palm mushrooms
- Growing oyster and other mushrooms-plastic bag method
- Preservation of mushrooms
- Pests of mushrooms
- Marketing aspects
- Practical demonstration of cultivation and drying methods

The theoretical aspects of the courses were carried out at the Apesiwa Conference Room of CSIR-FRI whilst the practical trainings were carried out at the mushroom cultivation facilities of the Mushroom Unit.

## **COURSE PROGRAMME**

### **Day 1 :**

A short opening ceremony was carried out by the Head of Unit-Dr Mary Obodai after a word of prayer. The participants were immediately introduced into mushrooms by Ms. Matilda Dzomeku. This was then followed by snack break and later by the cultivation methods for domo production by Mr Richard Takli. The participants then started their practical sessions of domo production using cassava peels and cotton waste.



**Participants during the 1<sup>st</sup> lectures**

## **Day 2: Bag production**

The programme continued as per the attached (Table 1).



## **Participants during bag production**

### **Day 3:**

The programme continued as per the attached (Table 1).

### **Day 4:**

The participants visited three farms namely: Tropical Fungi at Fafraha, Mushgreen farms at ECOMOG near Haatso/Madina and Da-Sam's farms at Cantoments. The Farm Manager of Mushgreen farms-Mr Joseph Mensah was trained at CSIR-FRI in the 90's. The third farm visited- Da-Sam's had a bag capacity of 25,000. The participants came back very tired and therefore could not have the lectures on preservation of mushrooms.

### **Day 5:**

On the last day, the participants had lectures with Mr Awotwi as per the attached programme and continued with preservation and pests of mushrooms by Dr Obodai. Later on in the day the participants filled the evaluation form. At 3.00 pm there was a closing ceremony with the Marketing officer given his closing remarks. Participants were then presented with their certificates and five (5) compost bags.



**Participant from Benin receiving his certificate from the Unit Head**

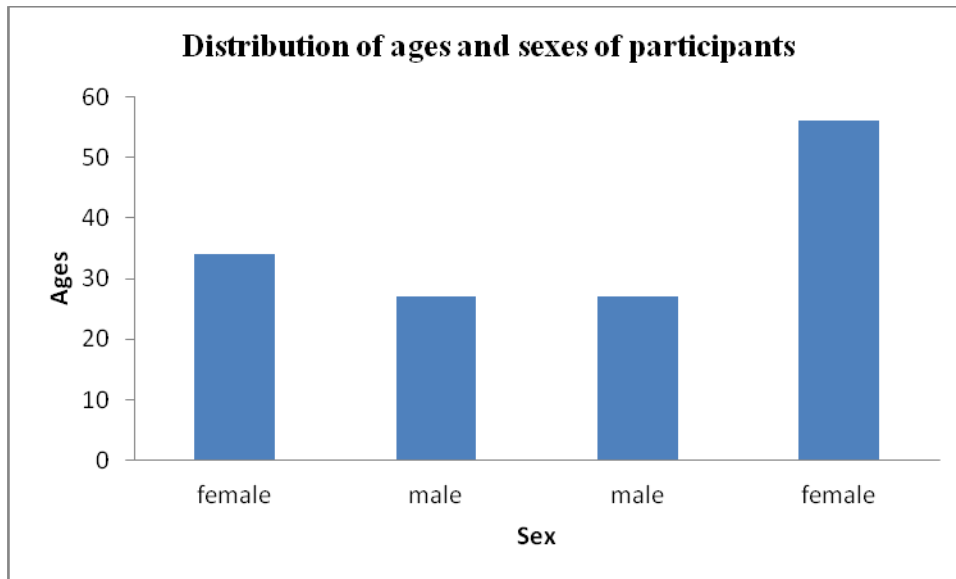


**Picture of resource persons with the participants**

### **EVALUATION OF COURSE**

The participants comprised of three Ghanaians and a Beninois. Their occupations included two traders, one farmer and agricultural technician. Participants got to know about the course by:

a) friends (75%), and b) through the Ministry of Agriculture (25%). The parts of the course enjoyed by the participants were the practicals (50%) and all parts (50%). One suggestion was that CSIR-FRI should have discounts for students and therefore encourage them to be part of training programmes.



## CONCLUSION

The participants had their expectations met and they promised to produce mushrooms as soon as possible.

**TABLE 1: MUSHROOM CULTIVATION COURSE**  
**12<sup>TH</sup>-16<sup>TH</sup> MARCH, 2012**

DAYS	TIME	ACTIVITIES
<b>12/03/12</b>	9:30am-9:45am	Opening ceremony
<b>Mon</b>	9:45am-11:30am	Introduction to Mushrooms : General Aspects
	11:30am-12noon	Snack Break
	12noon-2:00pm	Oil palm mushroom cultivation (Theory and practicals)
<b>13/03/12</b>	9:30am-11:30am	Plastic bag method: Theoretical & Demonstration
<b>Tues</b>	11:30am-12noon	Snack Break
	12:30-2:30pm	Compost Formulation (Practicals)
<b>14/03/12</b>	9:30am-11:30am	Compost Formulation: Inoculation/Incubation/Cropping
<b>Wed</b>	11:30am-12noon	Snack Break
	12:30-2:30pm	Costing and Marketing
<b>15/03/12</b>	9:30am-11:30am	Field visit to a bag producer
<b>Thurs</b>	11:30am-12noon	Snack Break
	12:30-3:30pm	Preservation / Question time
<b>16/03/12</b>	9:30am-11:30am	Costing and Marketing
<b>Fri</b>	11:30am-12.00noon	Snack Break
	12:30pm-1:00pm	Pests of Mushrooms
	1:00-2:30pm	Question time/Presentation of Certificates



## COURSE PARTICIPANTS

NAME	ADDRESS	EMAIL ADDRESS	TELEPHONE NUMBER
Dorothy Owusu	Madina-Adenta		0242007253
Andrews Yawodia	Madina -Adenta		0248687003
Bridget Yaa Yvette Simpi	P.O.Box Af 1688 Adenta-Accra	ackorpharh@gmail.com	024621296/0208149713
Dossa Yidomom Christophe	Porto-Novo, Benin	doschrist@hotmail.fr	+22995243892

### CSIR-FRI Staff involved in the training programme

Dr Mary Obodai	Head, Mushroom Unit
Mr Ben Awotwi	Marketing Officer
Ms. Matilda Dzomeku	Research Scientist
Mr Richard Takli	Technologist
Mr Ababase Akanzinam	Technical Assistant