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COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH

FOOD RESEARCH INSTITUTE

Mass Media Popularization

CSIR-FRI PROMOTES THE CULTIVATION AND UTILIZATION OF MUSHROOMS IN GHANA

By

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Mrs. Mary Obodai

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WORKSHOP ON TECHNOLOGY TRANSFER AND COMMERCIALIZ-ATION HELD

Prof. Norman delivering his welcome/opening address. From left to right (seated) are Messrs K.M. Setsoafia (National Co-ordinator of the Technology Transfer Grant Programme) and C. Entsua-Mensah (Director of the Institute for Scientific and Technological Information, CSIR).

A workshop on the Transfer and Commercialization of Agricultural Technologies was held on the 20 and 21 April., 1999 at the Conference Room of the Institute for Scientific and Technological Information (INSTI) of the CSIR, Accra. It was attended by 50 participants from various research institutions, technology transfer agencies and small scale enterprises.

The theme for the workshop was "Transfer and Commercialization of Agricultural Technologies: Prospects for Small and Micro Scale Enterprises Development in Ghana".

In a welcome and opening address Prof J. C. Norman, Deputy Director-General (Agriculture, Forestry and Fisheries Sector) at the Council for Scientific and Industrial Research (CSIR) recalled the signing of a Memorandum of Understanding (MOU) in April, 1998 between the CSIR Ghana and the Semi-Arid Food Grain Research and Development. Agency (SAFGRAD) of the Scientific, Technical and Research Commission of the Organization of African Unity (OAU/STRC) to promote the transfer and commercialization of technologies. The Deputy Director General Explained that the workshop is one of the major outcomes of the MOU

According to Prof Norman there is evidence in Ghana to show that we need to pay more attention to the development of the non-farm sector such as the establishment of small scale food processing industries in order to enhance the achievement of sustainable development of agriculture and food security in the country.

Presentation of Papers

In all a total of 17 papers were presented under three sub-themes. These sub-themes were

- 'Technology as a Factor of Production: Ghana's Experience with Small and Micro Enterprises Development and Prospects for the 21st Century'
- 'Building and Strengthening Linkages: The Crucial Needs of Technology Transfer and

IN THIS ISSUE

INTERVIEW ON MUSHROOMS

Mushrooms belong to a group of unique organisms known as fungi. Basically they are fleshy fungi or macrofungus.

Mushrooms which have been used as food from time immemorial for their taste and flavour, have in recent times been found to be highly nutritious and medicinal. Traditionally in Ghana, mushrooms are picked in the wild in the forest areas during the rainy seasons. However, in recent times, through the introduction of new technologies mushrooms can be cultivated, making them available all year round. In this interview, Mrs Mary Obodai a Scientific Officer with the National Mushroom Project of the Food Research Institute (FRI) , talks to the NARP Newsletter on the importance of mushrooms in our diets and the benefits to be derived from their cultivation.

NARS Newsletter (NN): What are mushrooms?

Mrs Mary Obodai (MA): Mushrooms belong to a group of unique organisms known as fungi. Basically they are fleshy fungi of macrofungus.

NN: What are the benefits that one derives from eating mushrooms?

MA: Mushrooms are nutritious. They are rich in proteins, minerals, vitamins and fibre but low in fat, calories and cholesterol. On dry weight basis mushrooms contain 19-40% of proteins and this is mainly made up of 8 to 9 of the essential amino acids required for good human health.

Mushrooms are a good source of vitamins esp. thiamine (vit.B1), riboflavin (vit.B2), niacin (vit.B12), biotin and ascorbic acid (vit.C). They are also a rich source of folic acid; larger than practically any other vegetable or meat except liver. In minerals , mushrooms contain calcium, phosphorus, potassium to mention a few. They are, however, low in sodium, which is good for those with heart ailments. They also contain practically all the minerals in the substrates they are grown.

Mushrooms are low in fat content (1-8% dry weight) and this fat is predominately made up of unsaturated fatty acids mainly linoleic acids.

When consumed regularly some mushrooms improve the immune system of the body and the quality of human health.
Most mushrooms are medicinal, having definite effect on blood pressure, cancers, tumors, and viruses.

Oil palm mushroom (locally known as 'dome') growing on cassava peelings

NN: Apart from these benefits what are the financial benefits that one gets from the cultivation of mushrooms?

MA: Within 7-10 days after investing your money in mushroom cultivation , mushrooms will be ready for sale thus you'll start retrieving your money. We recommend that to start mushroom production on commercial basis, one needs to purchase at least 1000 compost bags from bags producers.

From these 1000 bags one can a reap profit margin of 20-40% (ie. ¢210,000.00- ¢810,000.00). The breakdown of the costs and returns are as follows:

1. Yield of mushrooms/bag = 200-250g

Item	Quantity	Unit cost(¢)	Total cost (¢)
Compost bags	1000	500	500,000.00
Water			20,000.00
Labour	2 months	90,000	180,000.00
Polythene, etc			60,000.00
Depreciation of cropping house			30,000.00
		Total ---	790,000.00

Returns Based on a cycle of 2 months

2. .. Total yield of mushrooms/1000 bags = 200-250kg.
3. Selling price of one Kg. of mushroom = ¢5,000-¢6,000
4. Total selling price of 200-250 kg of mushroom = ¢1,000.000-¢1,6000,000.
5. Net profit:
   (i) ¢1,000,000.00 - ¢790,000.00 =¢270,000.000
   (Ii) ¢1,600,000.00-¢790,000.00=¢810,000.000

NN: When was your project started and what are some of its achievements?

MA: The National Mushroom Development Project was started in June 1990.
It has popularised the cultivation and consumption of mush-

rooms to over 5,000 people from all regions of Ghana through organised workshops.It has been able to use sawdust from *Triplochiton scleroxylon* (locally known as 'wawa') and agricultural wastes eg. oil palm bunch waste, yam, cassava and peelings from other tubers to grow oyster (*Pleurotus* spp.), oil palm (*Volvariella* spp), monkey seat (*Ganoderma lucidum*) and woodear *(Auricularia* spp.) mushrooms.

Mushroom cultivation is now taught from Primary to Senior Secondary School level as part of the academic curricular.

NN: How do you get your technologies transferred to your clients?

MA: Through annual training programmes organised by FRI . This takes the form of a 2- day introductory course and a 2-week on-the-job intensive training.

NN: Do you have any constraints to your work?

MA: Yes. The major constraint is lack of funds and equipment to increase spawn production to supply the increasing number of mushroom producers. We also do not have a vehicle for extension activities to enhance promotion of the crop, our research activities are poorly funded and technical staff lack adequate training.

For more information on mushroom production:

Contact:
National Mushroom Development Project
(Behind Ghana Standards Board – Okponglo)
Food Research Institute,
P. O. Box M 20,
Accra.
Tel: 233-21- 500331/500470

FOOD FOR THOUGHT

FACING THE INFORMATION AGE

Keep your mind open to change. Welcome it. Court it. It is only by examining and re-examining your opinions and ideas that you can progress.

Dale Carnegie

IBSRAM PRODUCES KIT FOR ANALYSIS OF ON-FARM TRIALS

The International Board for Soil Research Management's (IBSRAM) Regional Office for Africa has come out with a 35 page Tool Kit for the Economic Analysis and Evaluation of On-Farm Trials. The Tool Kit presents a set of procedures for the economic analysis and evaluation of on-farm experiments by agricultural scientists and extension officers. The kit in its introduction states that to some extent there may be an overlap between some tools, and that several of them are correlated as most economic indicators are based on the same variables (costs and prices, labour input etc.). It stresses that some tools are more adequate for smallholders (than for larger farms), for perennial (than annual) crops, or for labour (than land constraint environments), and vice versa. It therefore recommends a careful choice of the most appropriate methodologies.

The kit further indicates stress that though economic indicators are important, it becomes more important when the farmer is integrated in the market economy. It states that in a subsistence-oriented economy, economic and particularly monetary indicators may be of little significance where crops are cultivated for home consumption. It, therefore, recommends that it is important to determine only those economic indicators that may influence adoption and acceptability of innovations before a decision is made on the mode of economic analysis, and its value in comparison to the agronomic analysis and farmers assessment. The authors' caution that those innovations which seem to be promising from agronomic, ecological, and economic points of view may have other shortcomings that only farmers can identify. It cites examples such as the taste of a certain cassava variety, the dusty texture of rock phosphate, or the odour of poultry manure.

The authors, Prof. E. Baum, Mrs L. A. Gyiele, Dr. P. Drechel and Dr. G.K. Nurah, contend that economic tools only allow us to contribute, but not to substitute for judgement. Complimentary tools for a participatory assessment of innovations or technologies are part of kits prepared by others like Hergweg et al (1998) or Bechstedt and that by Mutsaers et al., (1997).

For readers with little experience in the economic terminology the authors kept the text simple and illustrated with different tools with examples from Africa and Asia. It also provided a glossary of Terminology as well as exercises and examples of forms for on-farm data recording.

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