
Training Course on Edible Mushroom Production for Asian Farmers and Entrepreneurs

November 21-27, 2010

TARI/COA, Taichung, Taiwan, ROC

Program of Activities

Organizers:



Food & Fertilizer Technology Center (FFTC)
for the Asian & Pacific Region



Southeast Asian Regional Center for Graduate Study
and Research in Agriculture (SEARCA)



Asia-Pacific Association of Agricultural Research
Institutions (APAARI)



Taiwan Agricultural Research Institute (TARI),
Council of Agriculture (COA), Taiwan, ROC

Sponsor:



Council of Agriculture , Executive Yuan, Taiwan, ROC

Rationale / Background:

Mushrooms are used as food as well as medicine since time immemorial. There are at least over 1200 different species of mushroom reported to be edible. The edible variety contains a high amount of protein, essential amino acids, vitamin B-complex and a variety of minerals, and is also well known as a rich source of dietary fiber. Recently, mushroom has been gaining more attention due to its medical benefits as health food, particularly in strengthening human's immune system and increasing the body's adaptive abilities.

Mushroom production can be fitted in as a prime model of the 21th century's Green Production System – characterized by resource conservation and utilization – in which various agricultural and forestry wastes are converted into high value food products, and where zero-emission of wastes can be established in the process of mushroom production where complete recycling of natural materials is attainable. Thus, mushroom production using agricultural and forestry wastes could contribute greatly to the development of a self-sustaining rural community.

The production of edible mushrooms has been developed as rural enterprises or as farmers' side business to meet consumers' demand in such Asian countries as Japan, Korea and Taiwan, while it is generally given less attention by farmers in developing countries of the ASPAC region. However, mushroom cultivation has been proven to be a profitable business either as a household industry or as a large-scale enterprise with the produce marketable as fresh, canned or dried products and further as powder and even soup. Mushroom production also provides Asian farmers with a good opportunity to start lucrative side jobs and/or a promising rural enterprise. Once a smallholder mushroom industry is established in rural and peri-urban areas, mushroom becomes readily available as a common diet, providing valuable source of proteins, vitamins and other essential minerals, and can surely make a great contribution to the health improvement of the rural population.

Practically, majority of cultivation materials for mushroom are accessible from resource recycling of agricultural wastes. Hence, this proposed training course intends to provide technical information for Asian farmers and entrepreneurs who want to incorporate mushrooms into their systems either as additional enterprise or as a full-brown business. Mushroom production can play an important role in managing farm organic wastes when agricultural and food processing by-products are used as growing media for edible fungi. The spent substrate can then be composed and applied directly back to the soil as organic fertilizer supplement.

This training course aims to equip researchers, government officers, and extension workers in the ASPAC region with a working knowledge and share successful experiences on improved technologies of mushroom production. The training curriculum will particularly focus on the importance of eco-friendly resource recycling of agricultural wastes. Specifically, the training course shall serve as a venue for the sharing and exchange of information and success stories and experiences on

enterprise development initiatives involving the promotion and adoption of improved technologies for sustainable commercial production of edible mushroom for Asian farmers and entrepreneurs.

The training program is planned to be held at the Taiwan Agricultural Research Institute (TARI), where the trainees will undergo intensive lectures by experienced speakers and hands-on experience on cultivation techniques. On-site visits to mushroom growers will also be included for technical orientation and demonstration on a variety of edible mushrooms in Taiwan while providing an opportunity for the participants' face to face interaction with mushroom farmers.

Program and Schedule

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| <i>Nov. 21 -Sunday</i> | Arrival of overseas participants Stay at Enterprise Hotel, Taichung City No. 160, Ho Ping St., Taichung City, Taiwan ROC |
| <i>Nov. 22 -Monday</i> | Field trip for on-site technical orientation to observe/ familiar edible mushroom cultivation and management including on-farm demonstration, interaction and sharing of practical experiences with growers vis-à-vis, and Q&A at mushroom farms |
| 08:10 | Hotel pick-up |
| 09:00-12:10 | Visit button mushroom farms in Changhua County and straw mushroom in Nantou County as a household industry |
| 12:10-13:30 | Lunch break |
| 13:30-17:00 | En route to visit Rich-Year edible mushroom leisure farm and other mushroom farms at Puli area, Nantou County |
| 18:00-19:20 | En route to Hotel, informal dinner to be arranged at TARI |
| 19:20- | Back to Hotel Stay at Enterprise Hotel, Taichung City |
| <i>Nov. 23 -Tuesday</i> | |
| 08:10- | Hotel pick-up |
| 09:00-09:40 | Visit and briefing of TARI |
| 09:40-10:00 | Registration |
| 10:00-10:25 | Opening session |
| 10:25-10:40 | Tea/coffee break |
| 10:40-12:10 | Lecture 1 Overview of edible and medicinal mushroom production, consumption and market prospects |
| 12:00-13:30 | Lunch break |
| 13:30-15:20 | Practicum 1 Preparation of potato-dextrose agar (PDA) and grain spawn |
| 15:20-15:30 | Tea break |
| 15:30-16:20 | Practicum 2 Tissue isolation and sub-culture |
| 16:30-17:20 | Practicum 3 Preservation of mushroom cultures |
| 18:30-20:30 | Welcome dinner hosted by TARI/COA Stay at Enterprise Hotel, Taichung City |

Nov 24– Wednesday

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| 08:10 | Hotel pick-up | |
| 09:10-12:00 | Practicum 4 | Substrate preparation techniques for mushrooms |
| 12:00-13:30 | Lunch break | |
| 13:30-15:20 | Lecture 2 | Cultivation technologies for white button mushroom and straw mushroom |
| 15:20-15:30 | Tea break | |
| 15:30-16:20 | Lecture 3 | Cultivation technology for shiitake |
| 16:30-17:20 | Lecture 4 | Cultivation technology for jelly ear |
| | Stay at Enterprise Hotel, Taichung City | |

Nov 25 –Thursday

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| 08:10 | Hotel pick-up | |
| 09:10-10:00 | Lecture 5 | Nutritional and medicinal value of mushrooms |
| 10:00-10:10 | Tea break | |
| 10:10-11:00 | Lecture 6 | Cultivation technology for oyster mushroom |
| 11:10-12:00 | Lecture 7 | Cultivation technologies for medicinal mushrooms (ex. ling zhi , reishi, etc.) |
| 12:00-13:30 | Lunch break | |
| 13:30-15:20 | Practicum 5 | Inoculation of the bottle or bagged substrate for mushroom cultivation |
| 15:20-15:40 | Tea break | |
| 15:40-17:30 | Final wrap-up, distribution of certificates and closing | |
| 18:30-20:30 | Appreciation dinner hosted by FFTC | |
| | Stay at Enterprise Hotel, Taichung City | |

Nov 26 –Friday

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| | Field trip | |
| 08:10 | Hotel pick-up | |
| 09:00-10:00 | Visit Tai Mushroom Farm to observe mushroom as a full-brown business and rural enterprise development in Taichung County | |
| 10:00-12:10 | En route to visit at Q-Yo Bio-Technology Mushroom Farm to observe cultivation of mushroom as value-added products in Changhua County | |
| 12:10-13:30 | Lunch break | |
| 13:30-16:40 | Depart for Taipei City | |
| | Free in the rest of the day | |
| | Stay at Howard International House Taipei | |
| | No.30, Xin Sheng South Rd., Sec 3, Taipei City | |

Nov 27 –Saturday

Departure of overseas participant to respective country (Transportation will be arranged by FFTC from Howard International House, Taipei City to Taoyuan International Airport)
