Applications of Juncao Technology and its Contribution to the Achievement of Sustainable Agriculture and the SDGs in Tanzania

Remarks

by

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Background
Mushroom cultivation

• Tanzania is blessed with a rich diversity of wild edible mushrooms that grows naturally in the forests

• It is common to find people who collect and sell them at the market or in roadside stalls.

• More than 60 edible mushroom species have been identified, including some species endemic to Tanzania

• People from many tribes in Tanzania eat wild mushrooms
Background
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- Tanzania is blessed with a rich diversity of wild edible mushrooms that grows naturally in the forests.
- It is common to find people who collect and sell them at the market or in roadside stalls.
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- People from many tribes in Tanzania eat wild mushrooms.
Mushroom cultivation in Tanzania
Substrates for Mushroom cultivation

• Locally available organic materials which are mostly agricultural residues are used as substrates for mushroom cultivation.

• Some materials are common to all areas, while others are specific to some areas.

• The most commonly used bulk substrates in various areas are banana leaves, rice straw and bean trash.

• Banana juice pulp and elephant grass are unique to Kagera, where banana stem barks and finger millet straw are unique to Kilimanjaro areas
Mushroom cultivation in Tanzania
Common techniques for Mushroom cultivation
Mushroom cultivation in Tanzania
Economic potential for Mushroom cultivation
Mushroom cultivation in Tanzania
Contribution of Mushroom cultivation to GDP
Mushroom cultivation in Tanzania
Mushroom cultivation for Food and Medicinal Purposes
Mushroom cultivation in Tanzania
Role played by the University of Dar es Salaam

- UDSM through training and workshops: conducted training to individual and groups on mushroom cultivation.
- Established spawn laboratory at Uyole Agriculture Research Institute in 1996.
- Initiated the formation of the Tanzania Mushroom Growers Association which through its members is spearheading the spread of the mushroom cultivation technology.
- Mushroom growers countrywide estimated about 5000 producing more than 1000 tons of oyster mushrooms annually

Promotes income generation (mushroom production)

SDG 1: No Poverty
Mushroom cultivation in Tanzania
Role played by the University of Dar es Salaam

• Through research identified locally available substrates that are suitable for mushroom cultivation and isolate and grow on agricultural substrates two Tanzanian wild mushrooms, *Oudemansiella tanzanica* nom. prov and *Pleurotus flabellatus*

• Led efforts to identify and classify more indigenous edible wild mushrooms and determine their nutritional value and medicinal potential

• Conducted seminars and workshop to raise awareness on health benefits related to mushroom consumption

• Have prepared mushroom policy brief which propose adoption of mushroom as strategic crop
Mushroom cultivation in Tanzania
Role played by the University of Dar es Salaam

- Through training and workshops to individual and groups on mushroom cultivation
- The MBB department has a course on microbial entrepreneurship which train students mushroom cultivation from spawn making to harvesting
- Mushroom cultivation require no big land, the activities can be accomplished with low capital.
- Hence suitable for young and women

SDG 4: Quality Education
Promotes Academic exchange and capacity building

SDG 5: Gender equality
Promotes involvement of women and youth
Mushroom cultivation in Tanzania
Role played by the University of Dar es Salaam

- Mushroom cultivation value chain involve different stages which generate income
- Spawn making, supply agricultural waste (substrate), value addition to produce various mushroom product such as pickle, mushroom power, etc.
- Mushroom cultivation help to conserve and protect the existing mushroom species by propagating mushroom mycelia which will produce multiple fruiting bodies of mushroom.
- Thus, prevent overharvesting and conserve wild mushroom species
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Mushroom cultivation in Tanzania

Challenges

• The main challenges for mushroom farmers is sustainable spawn supply

• Spawn production require expertise and sterile environment, which is difficult to maintain particularly in rural areas.

• Low yield

• The market is dominated by Oyster mushroom
Mushroom cultivation in Tanzania

Opportunities

• Despite challenges, mushroom cultivation is opportunity for income generation

• The demand for mushroom is high

• Innovation on adding values to mushroom product and proper packaging will ensure market for the mushroom product and generating income
Mushroom cultivation in Tanzania
Potential of adoption of Juncao Technology in mushroom cultivation in Tanzania

• Mushroom cultivation in Tanzania is dominated by Oyster mushroom.

• The yield is moderate, demand is high and supply is essentially low.

• Introduction of Juncao technology can help to improve the yield in mushroom production and possibly facilitate domestication of local appreciated and familiar wild edible and medicinal mushrooms.
Mushroom cultivation in Tanzania
Way forward