School Of Agricultural Economics and Business Studies (SAEBS)

Production of mushrooms using traditional methods/technologies in Tanzania

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Presentation Modality

- A Scientific perspective
- Business perspective

Introduction

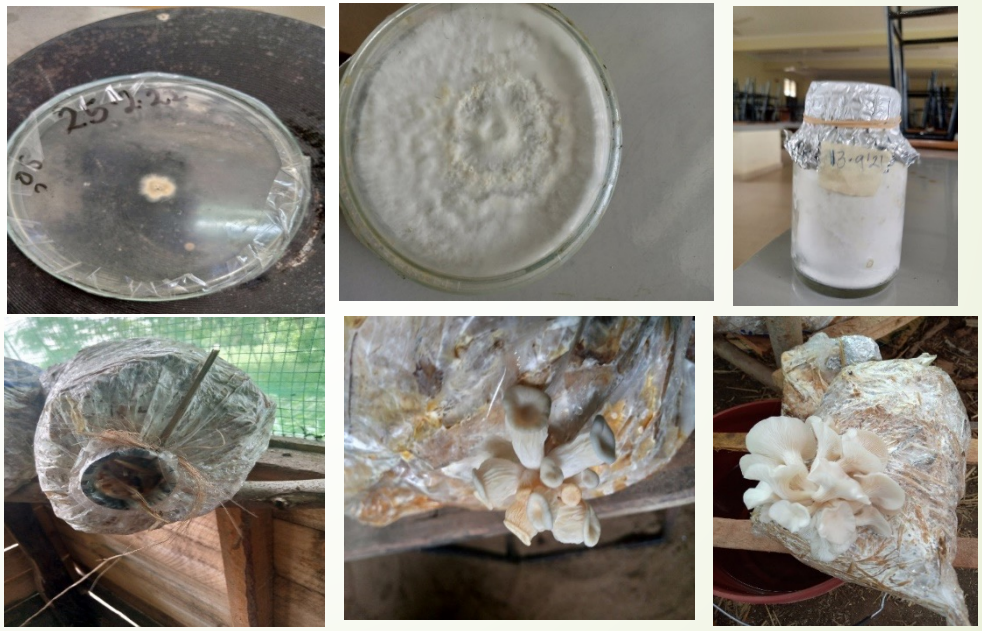
- Mushroom cultivation is among the most exciting practicals for students at the department of Biosciences
- Demonstrations are conducted in multipurpose laboratory
- Thus this calls to have permanent mushroom production facility
- However, mushroom production is still at infancy stage due to various factors
- Resources, equipment, and drought

Mushroom facility at the Biosciences Department

- Demonstration of mushroom production
- Experiments for Optimum production
- Training of the community
- Food security contribution
- Contribute on environmental protection
- Source of income

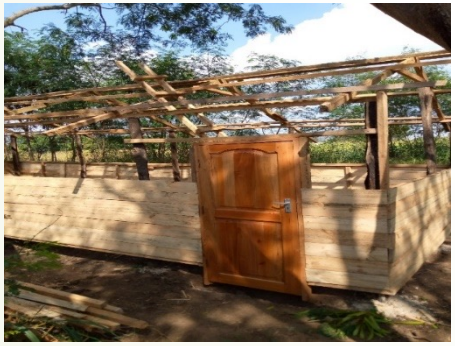
Achievements

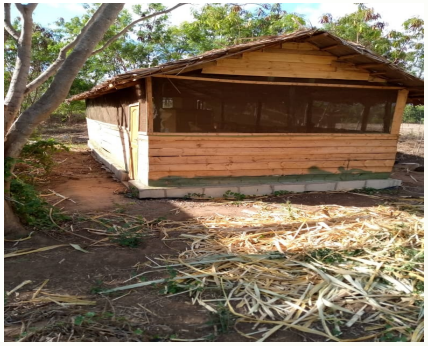
- Complete Mushroom cycle – tissue from fruiting body- mycelium in PDA – sorghum – substrate – pin heads – fruiting body. All of this were achieved in the lab.

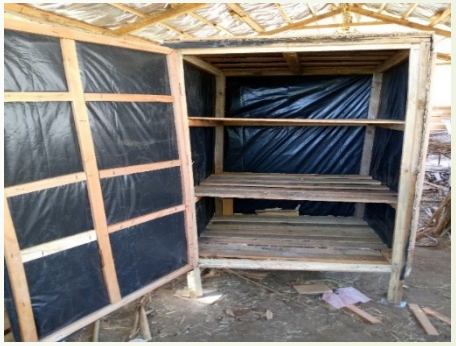


Construction of the mushroom facility

- Started using whatever was available and still going on
- Wood and insulation materials used to build the hut
- Black nylon sheets used to construct the dark room







Substrates for mushroom production

- Gathering of banana leaves, maize and rice straws
- Seasonal

Juncao simplified the Task

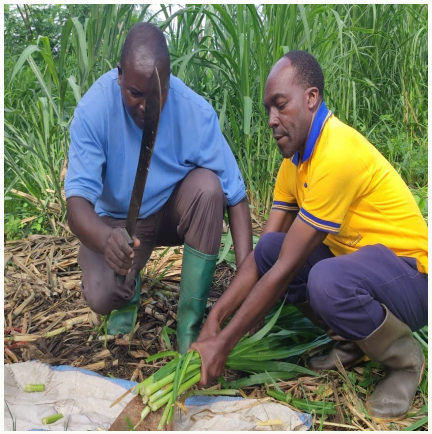
- Stimulate increase of mushroom production

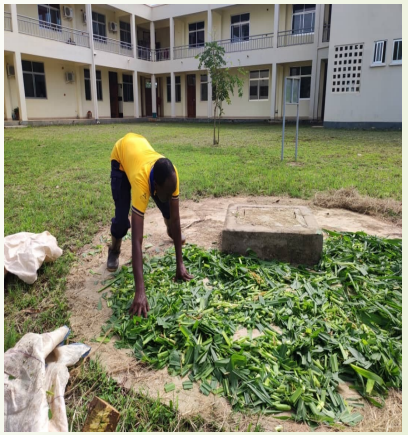
Challenges

- Climatic condition – (drought)
- Poor flashes
- Shrinkage of fruiting bodies
- Attacked easily (diseases)

Challenges

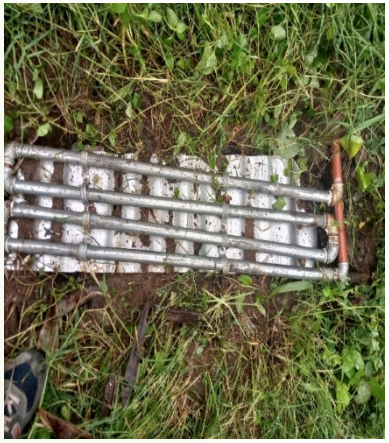
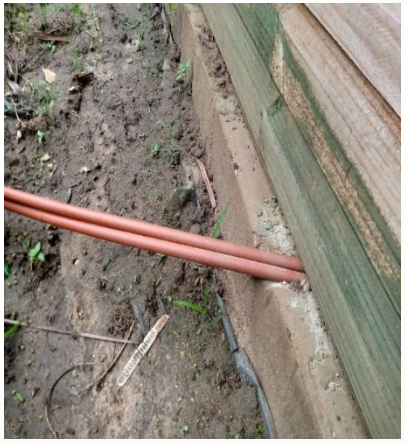
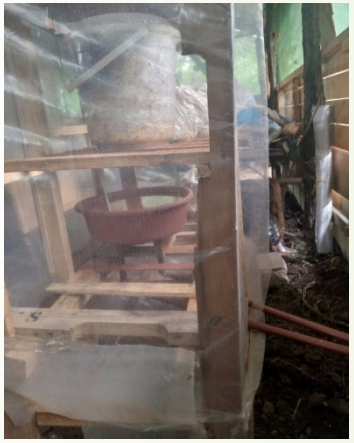
- Poor equipment for the processing of substrate
- Time consuming





Trials

- Humidifier

A personal Story from Practical Perspective

- Got an idea in India in 2014
- Chipped into production in 2016 after incurring loss in chicken production
- Applies traditional technology
- *How? Lets go!*

Cont'd

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1.Spawn supply.

- Sourced from Dar es Salaam about 200kms from Morogoro
- My colleague James produces spawn only for demonstration
- Spawn containers transported in public transport
- *How safe is the spawn??*

2.Substrate

- Neither grows rice nor bananas
- Depends on hunted banana leaves and rice straw – are seasonal in nature
- Sustainability??

3.Substrate chopping tools

- Manually by hand tools such as machetes
- Efficiency??
- Safety??

4.Substrate sterilization

- Manually heating in metal drums
- Temperature control – not guaranteed
- Heating time – Not known
- Efficiency??
- Quality??

5.Housing & Micro-weather control

- Optimistically constructed a big cement block building (4 x 2 M)
- Micro-weather control is a challenge

➢ Optimum humidity??

➢ Optimum light??

➢ Optimum ventilation?

➢ Safety of spraying water?

6. Containers for planting

- Has tried plastic bags - 1
- Polythine sleeves - 3
- 4 Liter capacity plastic containers - 2
- 10 Liter capacity plastic containers – Zero fruiting? Why??

7. Yield

- 5 – 9 Kgs per harvest during peak periods
- Harvesting frequencies – 3 times a week.
- Volume of the yield is not proportional to the size of the building
- Problem?

The Business

- It is a lucrative business
- A farm gate price of a Kg of fresh oyster mushrooms ranges from TSh 7,500 – 10,000
- The domestic market of mushrooms is wide open.
- In a cycle produces about 200 – 250 Kgs (2M – 2.5M TShs)

Challenges

- Knowledge, skills and technology
- Inability to adopt high value mushrooms (button and tree mushrooms)
- Very limited extension services

Expectation from Juncao Grasses

- Have set aside a plot for planting this rain season
- ➢ Expected to solve the problem of *substrate seasonality*.
- ➢ Quality of substrate assured
- ➢ Likely to foster development of efficient technologies

Conclusion

- Thanks to FAFU for Inventing Juncao Technology
- Thanks to UNDESA for Promoting Juncao Technology
- Lastly but not least, thanks to Dr. Elly, the National Juncao technical consultant;

➢ *He is as proactive and diligent as bees are, in awareness creation and diffusion of Juncao Technologies in Tanzania*

Thanks for Listening