Estimated reading time: 8 minute(s)

Oyster mushroom cultivation

Mushroom cultivation although uncomplicated, requires willingness to learn, hard work and an adherences to some well-defined guidelines. **Oyster mushroom cultivation has the potential of converting agricultural waste into protein rich nutritional products**. These mushrooms can be produced from locally available agricultural waste products such as wood chips, sawdust, straws as well as seed hulls and veld grass. With the use of such resources, mushroom production can be pursued throughout the year

Mushroom house infrastructure

The **technology for oyster mushroom cultivation is affordable** and very simple making it an ideal for rural and peri-urban marginalized social groups but also for entrepreneurs and youth. The i**nfrastructure necessary for oyster mushroom production can be built from locally available materials** such as *thatch grass, straw and mud*.

Nutritional aspects of oyster mushrooms

Mushrooms are well known for their nutritional values including:

- Their **high protein content** (23-27% which is approximately 3.3g per 100g) makes them **ideal to fight malnutrition and protein deficit** in grain based diets
- **If dried they can be mixed with porridge and fed to children**

and elders improving their protein intake (fortified paps).
- Have all nine **essential amino acids** and **vitamins** such as *thianine* (B1), *riboflavin* (B2), *niacin* (B12), *biotin* and *ascorbic acid*.
- Mushrooms are also well known for their good supply of **high quality crude fibre**, *folic acid* and *minerals* such as *phosphorus*, *potassium*, *calcium*, *iron* and *magnesium*.
- With their **low fat content** (1% to 8% on dry weight), mushrooms are low in cholesterol, have little sugar and no starch and **ideal for diabetics** and those with weight problems.
- Besides, most mushrooms have medicinal value with a definite effect on blood pressure, tumors and viruses.

Other uses of oyster mushrooms

The **mushroom substrate** also referred to as spent substrate can be used as *compost* or *animal feed* as they **contain bioactive nutrients** and **enzymes** that **act as potent anti-oxidants** and **anti-inflammatory agents** to increase the nutritional value of animal food products and **prevents various diseases** that afflict animals in the food chain.

Four stages in mushroom production

STEP1: Tissue culture preparation

A piece is cut from the internal fruit body of a mushroom or from a pure culture and laid on a potato dextrose agar (PDA) media in petri dish. This process is called **tissue culture isolation**: a method that makes use of a fruiting body that has the potential or the ability to grow onto mycelia to gain a genuine strain. Although PDA is affordable alternative available substrates can be used.

STEP 2: Spawn preparation

Spawns are made from the tissue culture in step 1. Spawns can be defined as the seeds of mushrooms. This is actually the second stage in mushroom cultivation and it is here where primary mycelia grow into secondary mycelia which is regarded as strong. **Strong mycelia have the ability to decompose and are regarded as high yielding and of good quality**. During this stage the mycelia is transferred from tissue culture into containers with grains (*a process called inoculation*).

STEP 3: Substrate preparation

One can **use a wide range of agricultural waste** such as straw from *maize*, *millet*, *sorghum* or *crushed corn cobs*, veld *grass* and *coffee residues* as **substrate for mushrooms**. Chop your substrate into pieces of about 5-10cm long and place it in sacks. **The substrate is often soaked in water** and drained for a specified period of time **before packed into inoculation bags.**

STEP 4: Fruiting stage

The first fruit appears in 4 to 6 weeks from the day the bags are inoculated and it takes about *5 days for the mushroom to grow to their full size.*

Conclusion

In conclusion, **oyster mushroom production is an ideal activity to generate income, reduce waste and fight malnutrition in communal and periurban areas**. However, although uncomplicated, requires *willingness* to learn, *hard work* and an adherences to some well-

defined guidelines.

REFERENCES

Mushroom cultivation, ZERI Regional Project: University of Namibia http://www.unam.edu.na/sites/default/files/newsletter/zeri_poster_on_cultivation.pdf