

BUTTON MUSHROOM PRODUCTION

MOSIMANEGAPE JONGMAN, PHD
Dept. Biological Sciences, University of Botswana





OUTLINE

- WHAT ARE BUTTON MUSHROOMS
 - PRODUCTION OPPORTUNITY IN BOTSWANA
 - REQUIREMENTS TO START PRODUCTION
 - STRUCTURES FOR PRODUCTION
 - PRODUCTION PROCESS
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 - SPAWN RUN & CASING
 - CROPPING & HARVESTING
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WHAT ARE BUTTON MUSHROOMS

- Vegetative forms of fungi and the most popular mushroom variety
- *Agaricus bisporus*



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PRODUCTION OPPORTUNITY IN BOTSWANA

- High demand in Botswana

Table 2: Aggregated Botswana's Mushroom imports in 2021-2023

YEAR	2021	2022	2023
IMPORTS (PULA)	11,031,611.10	12,049,663.23	14,283,551.01

Source: Statistics Botswana, 26/08/2024





REQUIREMENTS TO START PRODUCTION

- Land to build the production structure and the shed
 - Structure to produce the mushroom
 - Reliable and good source of spawn (mushroom seed)
 - Good and readily available substrate for composting
 - Clean water supply
 - Electricity and airconditioning or cooling unit
 - Market access
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STRUCTURES FOR PRODUCTION





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- Storage shed to keep Substrates and other materials





PRODUCTION PROCESS

- **COMPOSTING**- Short (19 days) or long (28 days) method
- For both methods, composting ingredients are as follows:

TABLE 1. FORMULA FOR COMPOSTING AND ASSOCIATED COSTS

Item	Amount	Cost (BWP)
Wheat straw	1000 kg	1600
Wheat bran	250 kg	600
Chicken manure	300 kg	225
Urea	18 kg	400
Gypsum	35 Kg	400



SHORT COMPOSTING



Wheat Straw



Poultry Manure



Gypsum

Day

1

9

11

16

18

23

Straw wetted before mixing with Poultry Manure and Gypsum (0 - 7 days)

Thermophilic (80 °C) (10-20 days)
Indoor or outdoor bunker
High levels of ammonia

Pasteurization:
8-10 hours @ 60 °C
Conditioning:
60 → 45 → 25 °C
Gradual decrease over 5 days
Until no ammonia detected

Spawn run
15 days @ 25 °C

Prewet

Phase I compost

Phase II compost

Phase III compost

← Add urea at beginning of phase I

← Turn every 2-3days and add gypsum at 3rd turning

Mushroom mycelium grown on grain (spawn) inoculated into compost



SPAWN RUN & CASING

1. Spawn at 2-5% weight of compost and place in bags for spawn running at 24°C for 12-15 days



2. Then add a layer of peat moss as casing

Casing layer

Spawn

Compost





CROPPING & HARVESTING

- Maintain high moisture
 - Temperature is kept around 25°C for 7 days
 - Then lower temperature to 16-18°C to promote pinning.
 - The pins will mature in 3-4 days when mushrooms are ready for harvesting
 - Each harvest is called a flush. After first flush, maintain similar conditions (temperature, moisture) to reach 3-5 flushes in about 4-6 weeks' time
 - Hand picking is the most recommended method to preserve the integrity of the mushroom
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COMMON DISEASES



THANK YOU

