RESEARCH ON POTENTIAL AGRICULTURAL ENTERPRISES

MUSHROOM

Mushroom Cultivation

Presentation

by

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Order Of Presentations

- Actual Production
- Pests and Diseases in general
- Marketing

Mushroom cultivation

1 Choice of the species

- The choice of which species to grow should be thoroughly researched.
- The beginner should be completely familiar with the various fungi (mushroom) life cycles and know the parameters required by each.

Factors to consider in selecting species

- a) Access to an economical growing medium suitable to the species chosen.
- b) Amount of processing necessary to prepare the substrate for the spawn.

Final choice of the species depends upon:

- Waste materials available for use as substrate
- An appropriate facility
- Cost of necessary equipment
- Level of skill required to manage the life cycle of the fungus (mushroom)
- Established market for that specie

Materials

- Clean water
- Spawn
- Substrate (e.g wheat straw,banana leaves, soybean straw)

Equipment

- Growing house
- Containers (drums) for heating the water
- Means of keeping the water hot (wood fire, solar energy, fuel)
- Wire mesh to let the substrate drain
- Thermometer for measuring the temperature
- Polyethylene plastic bags

Procedure

Step1

- Cut the substrate into short pieces of 3-6cm
- The cut substrate is then moistened in water until it has a moisture content of about 75%

Step2 Pasteurization

- Boil the water in the drums by any means
- Immerse the substrate in hot water at 60°c to 70°c for 30 minutes
- Spread the substrate on a wire mesh for water to drain and cool down.

Procedure

Step3

- When the substrate has cooled down to 24°c or room temperature, spawning can be done.
- Spawning is done by distributing the spawn evenly in the substrate.
- Fill the polyethylene plastic bags with 10 to 25 KGs of substrate.
- Give a dose of 250g of spawn per plastic bag (in other words 250g of spawn will plant 1 by 10 KGs of substrate)

Procedure

Step4

- After spawning, the bags are nicely packed on shelves in the growing house
- The growing house should be a little bit dark

Step5 care in the growing house:

- Temperature of between 25 to 28°c
- At this temperature the mycelium will colonize the substrate within two to three weeks
- Room temperature should be lower than this
- Temperature should not go higher than 30°c

Growing House

Care in the growing house

- If the temperature go higher than 30°c, the substrate will start fermenting especially if more than 25 KGs of substrate was packed per bag.
- As soon as the mycelium has covered the substrate, the bags can be opened
- The period from spawning to when the whitish cotton like color has covered the bags is called spawn run (This period is 2 to 3 weeks)
- When mushrooms start shooting, they will need light for proper development of the cape and color.

Care in the growing house

- At fruiting the room temperature should be between 20 to 28°c and humidity should be raised to between 80 to 95%.
- To provide the relative humidity in the room water should be poured on the floor and wetting the walls if possible.
- When the temperature rises, humidity will drop.
- Humidity helps keeping the mushroom bags wet.
- Mushroom will not germinate and grow if the bags are dry.

Care in the growing house

- Doors and windows can be opened especially at night to allow the cool air to enter the room for cooling
- If the caps of the mushroom are small and the stipe big, this means that there is lack of light and there is too much concentration of co_2.
- Reduce co_2 by recireculating the air in the room
- Mushroom can be picked up after 5 to 7 days of opening the bags.
- After another 5 to 7 days the mushroom will begin growing again

Care in the growing house

- Mushrooms come out in flashes.
- There are about 5 to 6 flashes a grower can harvest if the conditions are favorable.
- The yields are between 200g to 500g or more per 1 by 10 KGs of substrate per flash

crop protection

PESTS AND DISEASES

- The following are some of the biotic problems that cause harm to the crop severely; parasitic fungi, antagonistic fungi, insects, mites, snails, nematodes, pathogenic viruses and bacteria.
- the crop can be affected in any of the following ways;

a) prevent spawn from growing

b)by colonizing the substrate faster than the mycelium of the of the spawned mushroom or releasing toxic substances

c) by damaging the mycelium of the spawned mushroom e.g nematodes, larvae,etc

d) by damaging the mushroom itself (e.g, causing brown spots on the cap)

PEST &DISEASE MANAGEMENT

The following are the factors to consider in pest and disease e management:

- Farm hygiene I.e design of the farm, proper heat treatment, filtration of air,and hygienic conditions during spawning
- Chemical control I.e pesticides, application in a safe way and taking care of pesticide resistance.

- Resistance strains
- Farm management; Good working order, clean clothes, cleaning the rooms, cleaning equipment, disinfecting.
- Environmental control ; keeping the right climatic conditions can help in keeping some diseases away, e.g bacterial blotch can be avoided by controlling humidity.

MARKETING OF MUSHROOMS

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DEFINITION

- Marketing is the way in which the product is introduced, priced, sold, and distributed to potential customers

FACTORS TO CONSIDER

- PRODUCT-Quality
  - -Are they sold fresh or dried
  - -What spp has the market potential
- PRICE Depends on
  - - Regional preferences
  - -Spp and quality

-The season

-Whether sold fresh or conserved

-whether sold for wholesale distribution or to end consumers

- PHYSICAL DISTRIBUTION
- PROMOTION

-Identify its target

-Know what they demand

MARKET RESEARCH RESULTS

- Total size of the market at present
- Number of competitors
- Prices buyers expect for a given quality
- Trends in consumption, competition, and pricing

LOCAL AND INTERNATIONAL MARKET

- Locally producers often sell to end consumers

  -production for mushrooms fluctuate

- For international market initial mushroom production should start on a small scale to gain experience with production techniques, contamination problems and potential markets