PRODUCTION AND MARKETING OF MUSHROOMS: GLOBAL AND NATIONAL SCENARIO

JANIFFER MAYAMBALA

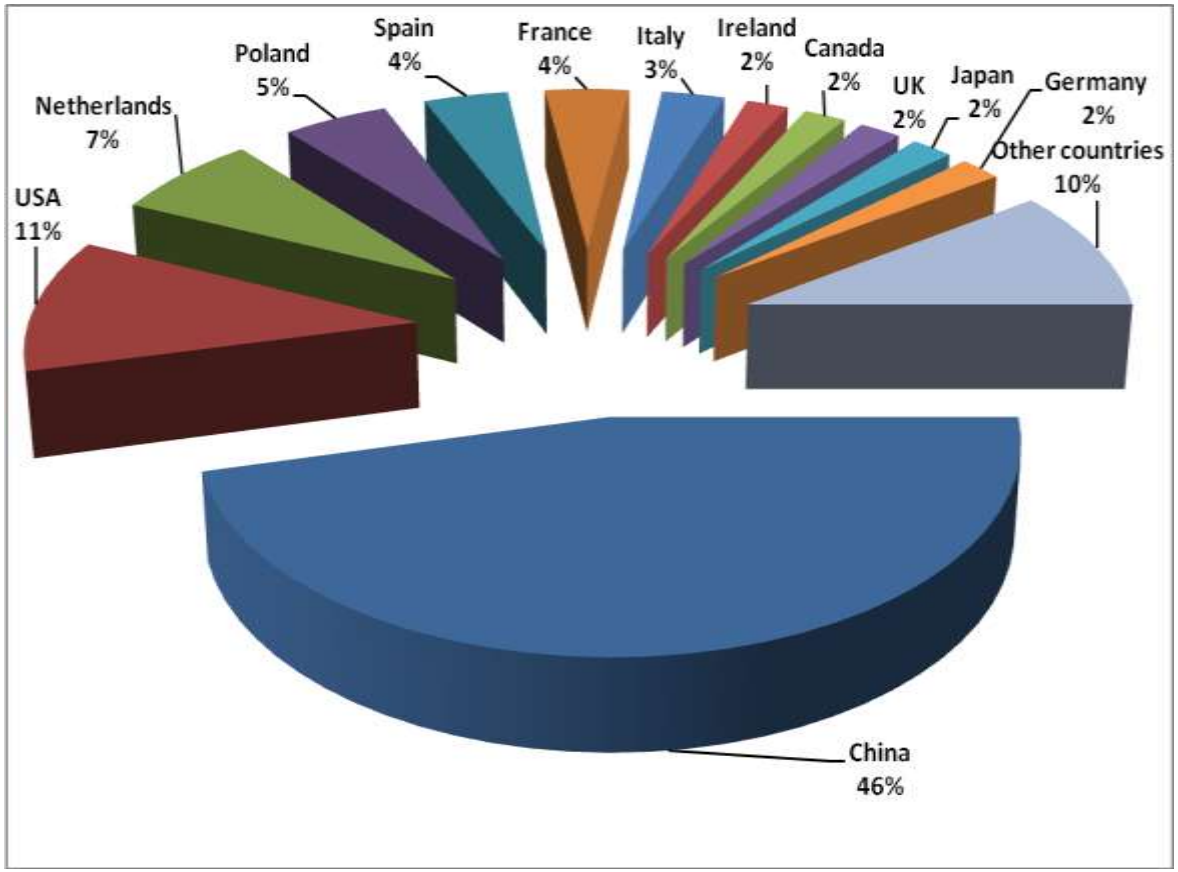
MSc, Science in Botany, Microbiology and Plant Pathology

(Uganda industrial Research Institute)

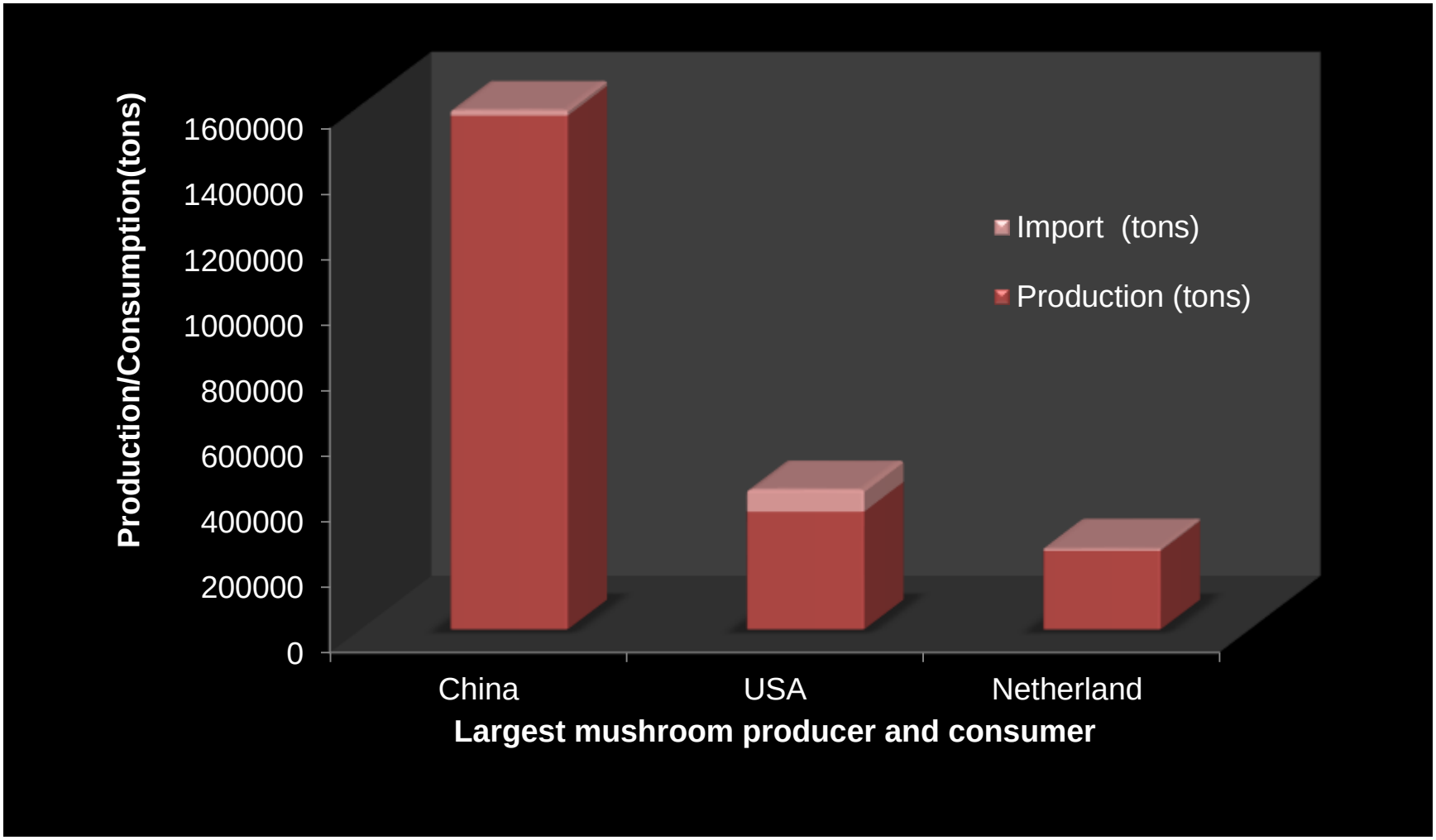

•Global Mushroom Production

World Mushroom Production in Per cent (Countries wise) from 2007

- China, USA, Netherlands, Poland, Spain, France, Italy, Ireland, Canada and UK are the leading producers



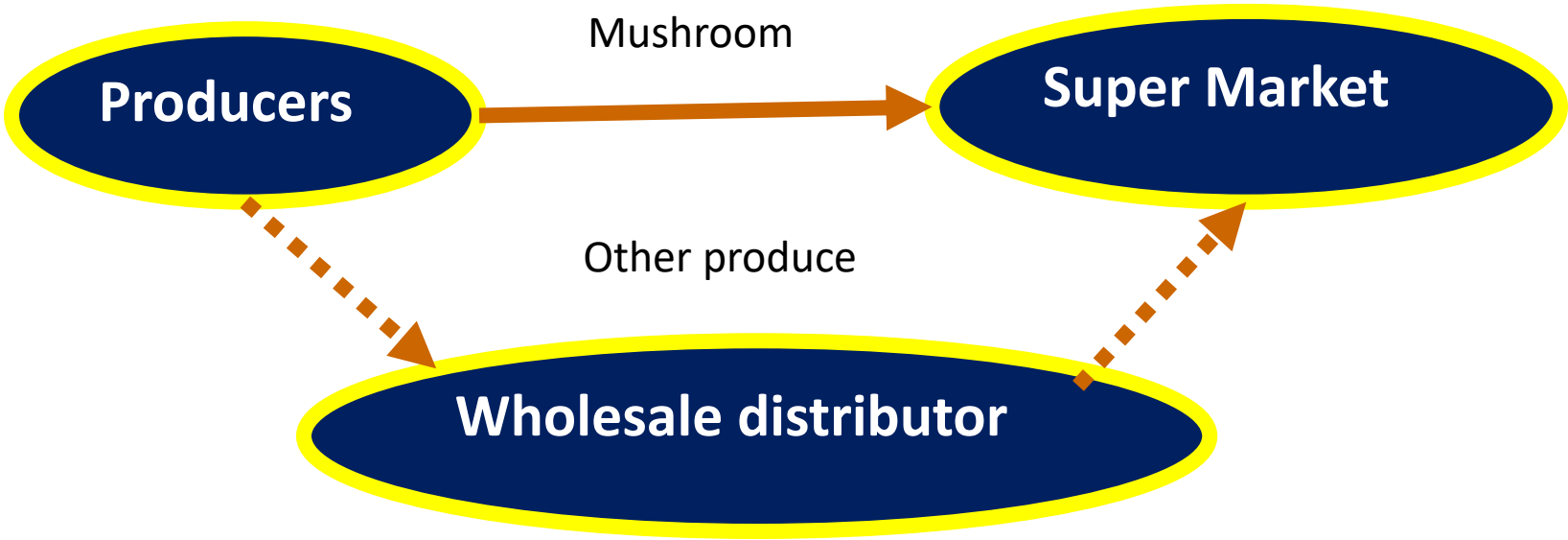
Largest Producer and Consumer of Mushrooms in the World



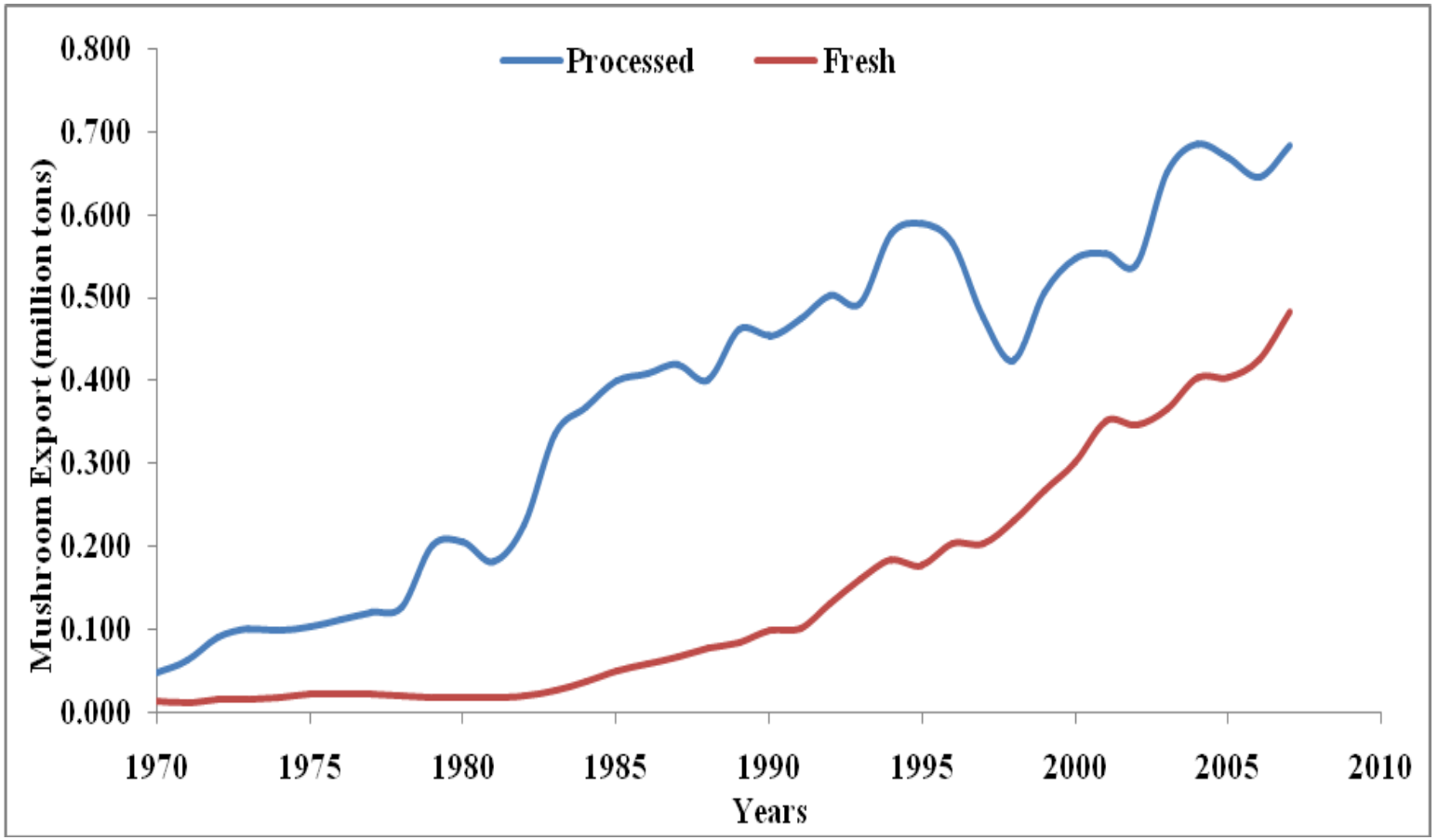
Source: FAO, *FAOStat*-2009


Global Mushroom Marketing

- **Marketing:** the right product, to the right people, at the right price, at the right time and in the right way
- **Marketing of fresh mushroom:** Worldwide not organized except the auction system in Netherland



World Processed (Canned and Dried) and Fresh Mushroom Export (million tons)



Source: FAO, *FAOStat*-2009


National Scenario

CONT.

- In Uganda only *Pleurotus Austreatus (*Oyster*)* is grown commercially, other mushroom variaties are only picked from the wild and sold in small markets.

- Since 1995, *Pleurotus Austreatus* (oyster mushrooms) have been grown on a commercial basis in majorly southwestern Uganda.

- More than 800 active mushroom growers, mostly rural women and youth, are scattered in the three districts of Kabale, Kanungu and Kisoro.

- The number of Oyster mushroom growers is increasing greatly all over Uganda, in Kampala mostly are clusters of few mushroom spawn producers

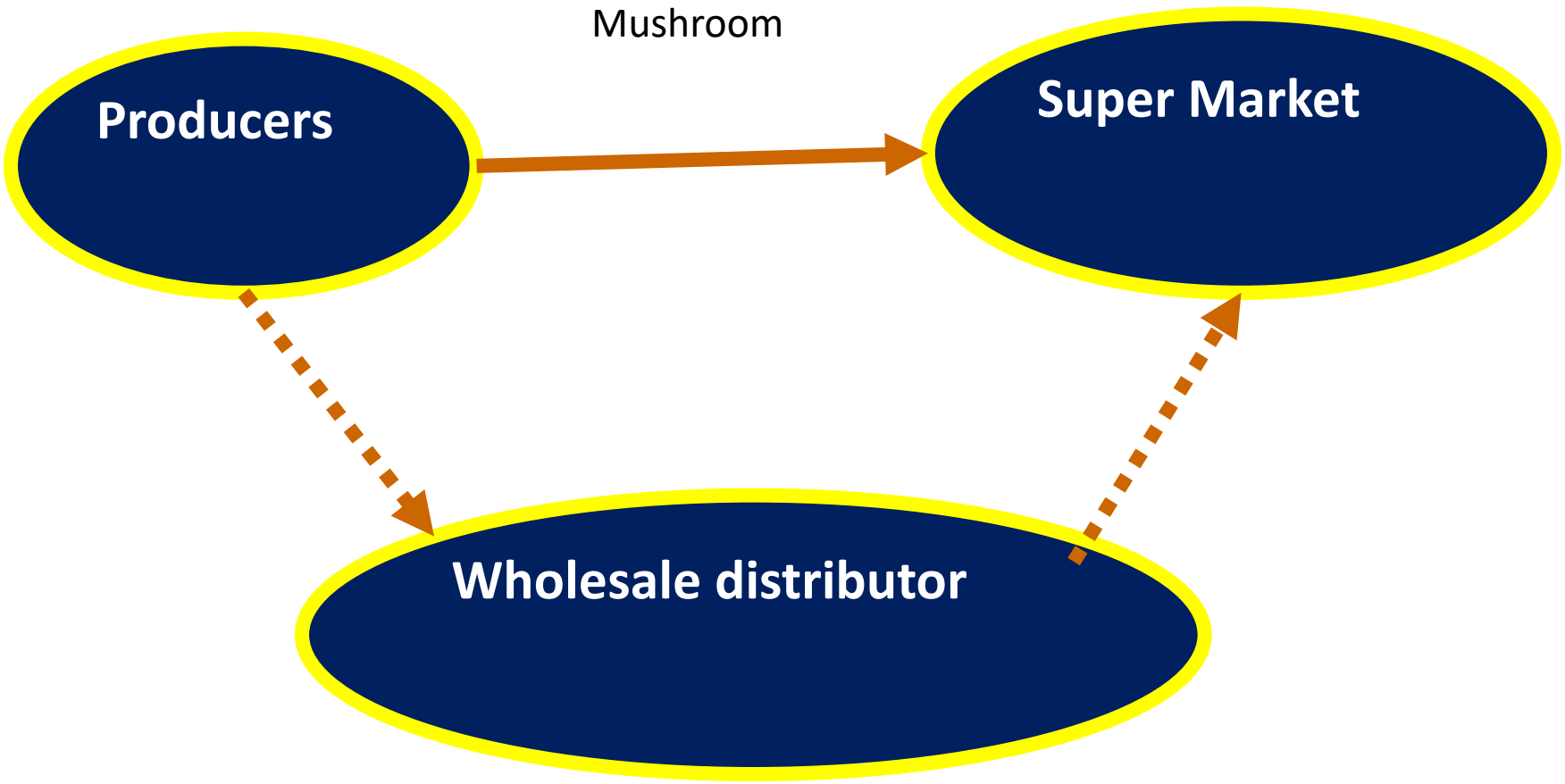
- FAO, 2010 Uganda report mentions that mushrooms are increasingly being considered as a substitute for meat. This is particularly key in Uganda where owing to a large population below the poverty line, the inexpensive option of mushrooms could greatly improve health and reduce food insecurity.
-

CONC

MARKETING SYSTEM IN UGANDA

- Market is often limited to supermarkets, a few market and the community around the grower.
- The East African and International markets reports show that mushroom exports from Uganda are not yet competitive compared to other countries.
- Production of mushrooms, especially of the oyster mushroom, in Uganda has gone up in the recent years but it has also worsened its marketing problems
- No serious effort to promote the product, to strengthen and expand the market to increase the consumption.
- No availability of high quality mushroom spawn in Uganda and enough to satisfy the available market.
- The marketing of fresh mushrooms would determine the future of mushroom industry in Uganda.

Marketing system in Uganda



Not well organized, simple system with its own limitation

Suggestions to Solve the Marketing Problems

1. Expand the market area and strengthen the demand:

   Popularize mushrooms by creating awareness in new areas and use of mass media

2. Form cooperatives for sale:

   Which can help to create cold storage facility, refrigerate transport and processing facility

3. Good prepacks for eye appeal.

4. Train retailers about handling, storage, food value and recipes.

   In brief, Expand Market, increase demand, organize marketing and form cooperatives


Profitability and return on investment in a mushroom business.

CONT

- Mushroom growing is simple , requires not a big land & labor, It can be done anywhere, your back yard , small rooms, grass thatched houses .

Major consideration before start up

- A) Training
- B) Market
- C) Preservation
- D) Value addition

Others which are very important

- Quality of seeds / Spawn
- Hygiene (General)

Start up with 200 gardens

- Assuming the small land is already available (***as an individual***)
- (A)15 x15 ft concrete room = 3,000,000 (2.5m + *500,000)
- (B)15x15 ft Grass thatched = 1,000,000 (500,000 + *500,000)
- Small materials and equipments = *500,000/=

- Metallic drum
- Tapeline
- Cotton waste
- Black medium polythene bag
- Mushroom spawn
- Ropes
- Timber
- Watering cans
- Gloves
- Big source pans
- Big basins

CONT.

- ***Profitability:***
- At a cost of 6,500/= sold @kg (6500 – 8000) oyster mushrooms

- **Means:**
- One Garden = 5kg (Well cared and prepared for)
- Commercial minimal start up bags = 200bags (200x5=1000kg)
- **1000kgs each @6500/= (**1000x65000**=<u>6,500,000/=),</u>** $ **1778.4 per 1-2 months**

CONT.

- ***Return on Investment (ROI):***
- Start up capital (a)
- Profitability (b)

- **For (A)**
- ROI = (a)/(b)x 100
- 3000000/6500000X100
- 46%

For (B)

ROI = (a)/(b)x 100

1000000/6500000X100

15 %

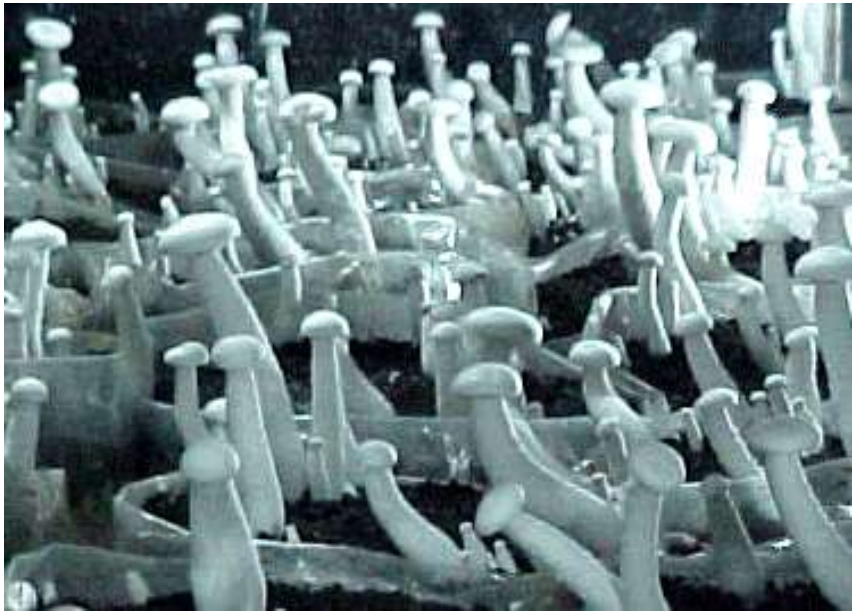
- ROI in a business can be an excellent indicator of size and strength of its progress

- If the business is able to generate ROI of 15-20% yr aft yr, it has a great system for transforming investor capital into profits (Mostly important for big companies)

WELCOM TO MUSHROOM GROWING

(COMMON GLOBAL COMMERCIAL MUSHROOM TYPES)


53
53



TYPES OF MUSHROOMS UIRI HAS RESEARCHED ON

OYSTER MUSHROOM GROWING IN UGANDA

Agro- climate requirements for Oyster mushrooms

- The most important factor for mushroom growing is providing an appropriate environment both for vegetative and reproductive growth.
- Success or failure of mushroom cultivation depends on the control of growing conditions.
- Mushroom mycelia grow well with the temperature range between 20 and 30℃. Pins form at 10-20℃
- Over 80% of the fruit body is water. Substrate moisture content should be 60-75%.
-
- During fruiting, different relative humidity levels, ranging from 80-95%, are needed at the early, mid and latter stage.
- Though mycelia can grow without light, some species require light for fruit body formation.
- Being aerobic fungi, mushrooms need fresh air during growing, but ventilation is more required for reproductive stage.
-

PROCEDURE FOR GROWING OYSTER MUSHROOMS

- Oyster mushroom cultivation has a short cycle of 3 weeks to the first harvest
- Commonly used substrate is cotton waste which is socked overnight then pasteurized for 4-5 hours
- After cooling, spawning of the bags is done in an hygienic environment
- The bags are tightened properly and taken in the cropping room for incubation
- After 2 weeks of complete colonization, the bags are cut vertically and hanged in the growing room
- After 3-4 days of watering, pins are seen which mature to fruit bodies after 2 days if well watered. Mushroom are harvested and preserved in a fridge if not sold

Preservation methods and value addition for mushrooms

PRESERVATION:

- FREEZING (2 -4 degrees centigrade)
- DRYING

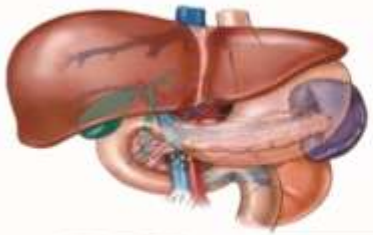
- Freeze drying (frozen & vacuumed)
- Tunnel drying
- Common local driers

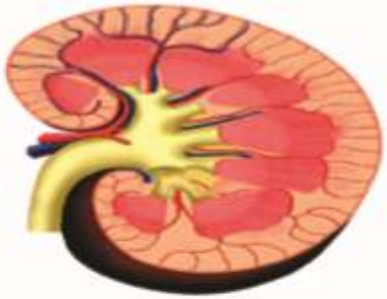
VALUE ADDITION:

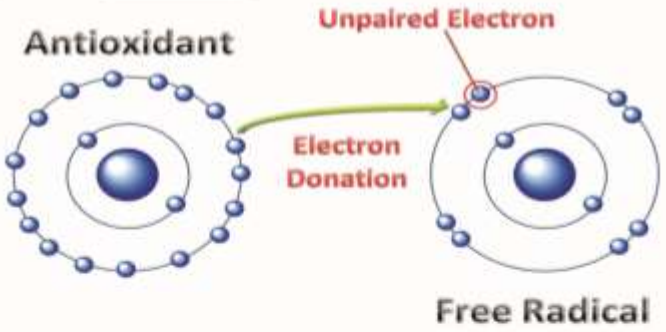
- A lot has been done in the medical section form mushrooms e.g in supplements for patients, capsule tablets, tea bags for cancer patients.
- In the cosmetic industry
- In domestic consumption as soups, carriage etc

IMPORTANCE OF MUSHROOMS

Anti cancer GOOD







Anti-HIV, Anti-viral, Anti-histaminic, Hypo-cholesterolemic, Hepato- & Nephro-protective, stamina enhancer etc

Anti-aging property

- Polysaccharides extracts : scavengers of free radicals
- Ergothioneine : eyes, skin and bone marrow
- Antioxidant activity
  - Ascorbic acid
  - Tocopherols
  - Phenolic compounds
  - Carotenoids, flavones, etc

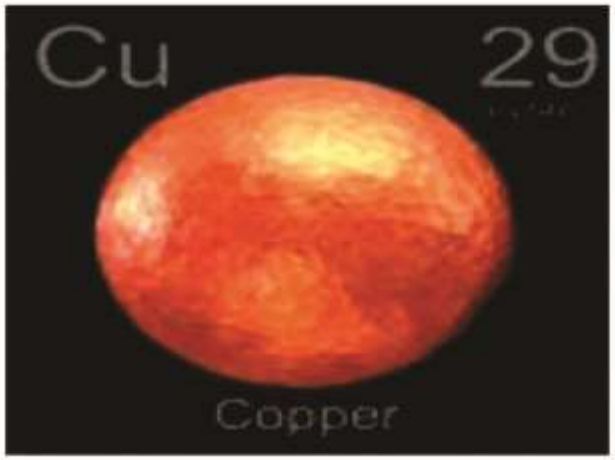
Eg: Reishi, *Agaricus blazei*, oyster mushrooms, *Agaricus bisporus*, shiitake, Maitake

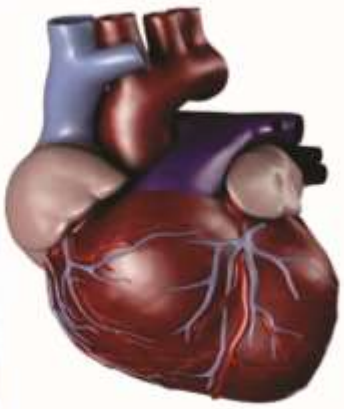
Antioxidants

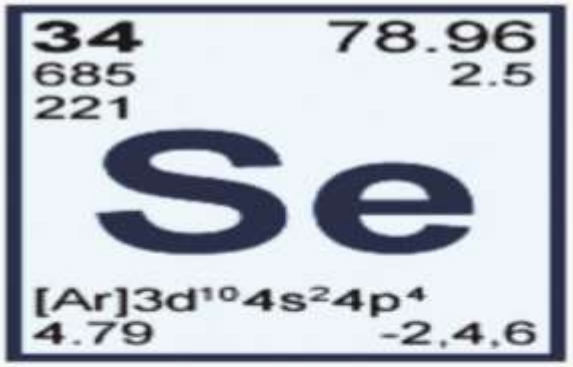
They can neutralize the free radicals by delivering one of its own electron and terminate the chain reaction

Enzymatic systems which can scavenge the free radicals are antioxidants –

- Vitamin E, Flavones
- β-carotene and vitamin C
- Se, Zn, minerals
- Superoxide dismutase
- Catalase
- Glutathione peroxidase

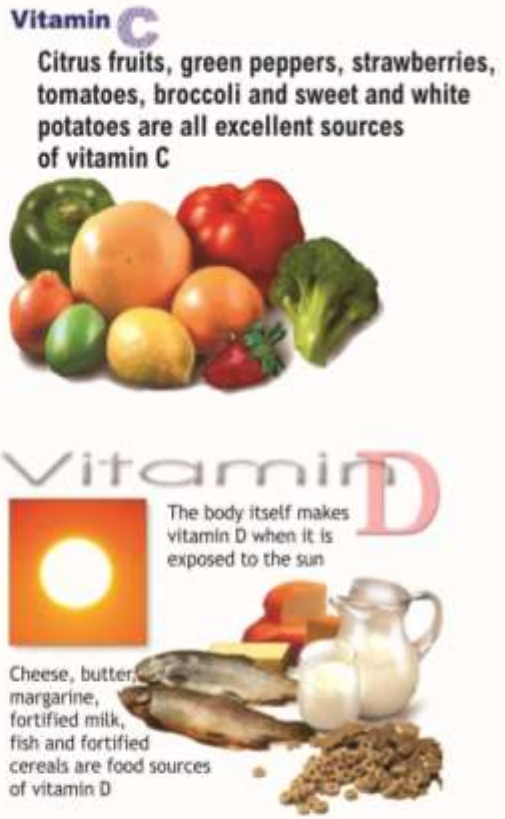




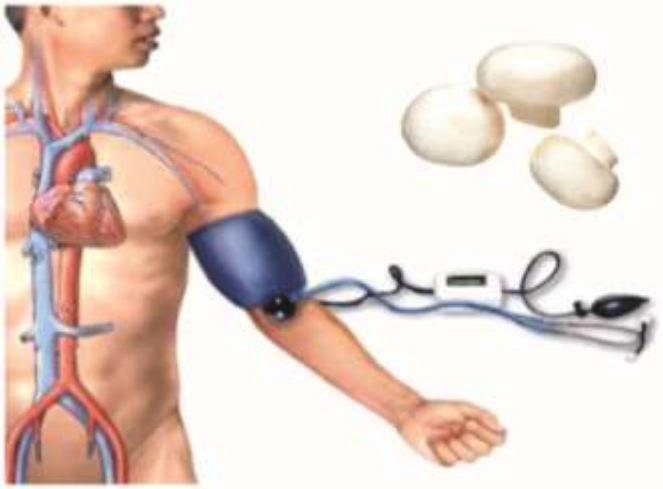


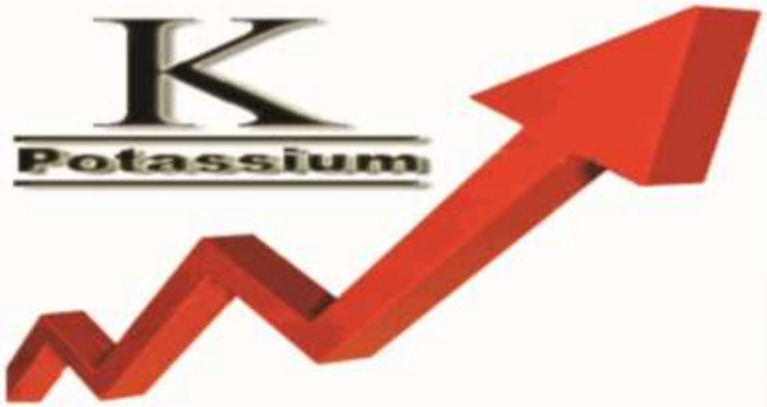
Rich in minerals like copper (cardio-protective) & Selenium (anti-cancer)

Low calorific food with no cholesterol, no starch: delight of diabetics Presence of flavanoids: Highly anti oxidants



Good source of Vitamin B-complex and Vit C; only vegetable source of Vit D





High fibre, low sodium-high potassium diet (anti-hypertensive)

Why should we grow mushrooms – an entrepreneur's view:

- For profit making
- To diversify income
- To generate income from limited area
- To generate income throughout the year
-
-
-

Sale the product efficiently


THANK YOU
&
GOD BLESS
YOU