Cihan University - Erbil

Nutrition Department

Healthy Food From waste (Mushroom)

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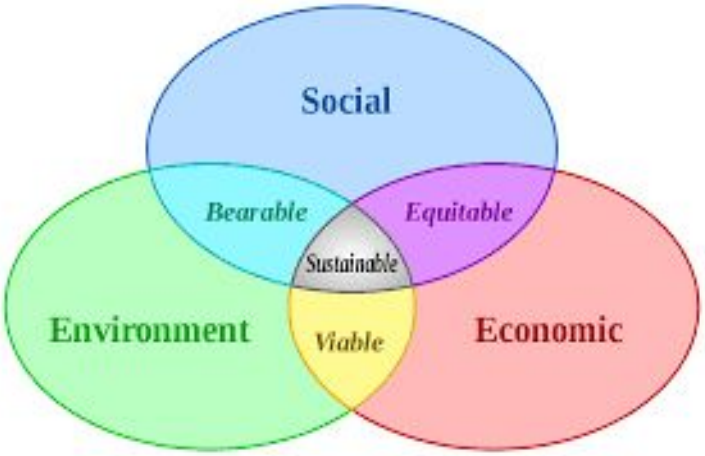
Introduction



If we ask this question :

how can we produce
Healthy Food via Sustainable Development
I think the best answer will be :
By producing, a healthy products or food , with huge quantity and normal prices or cost, with using our resources in very effective and sustainable methods, to keep the balance in our ecosystem

Some Types of Mushroom

- **Wild edible Mushroom:**

Coprinus disseminatus
(non-inky coprinus)

Clitocybe gibba
(common funnel cap)

Mushroom Products

Since earliest times, mushroom has been treated as a special kind of food, they also has been considered as the oldest microbial food. The Greeks regarded mushroom as providing strength for warriors in battle. The Romans regarded mushroom as the food of God, which was served only on festive occasions. The Chinese treasured mushroom as health food, the elixir of life, at first such mushroom collected from their natural growing habitats, but with the passing of time numerous attempts have been made to establish practical cultivation techniques so far about 25 species.

Some Types of Mushroom

- **Wild edible Mushroom:**

Leccinum versipelle
(orange birch bolete)

Truffles

Some Types of Mushroom

- **Wild POISONOUS Mushroom:**

Amanita muscaria
(fly agaric)

Chlorophyllum molybdites

Some Types of Mushroom

Cultivated Mushroom:

Button mushrooms →
(*Agaricus bisporus*)

Musroom Spores ↑

Pleurotus mushroom →

Mushroom Products

Mushroom is considerable as healthy food because it has good amount of proteins which computable in bioavailability. Mushroom provides a good food for diet because it has a little fat and high % dietary fibers, and it contains many functional chemical compound like (β- glucan) which has clinical properties.

Cultivation and production of mushroom in Some countries spread and evolve from year to year because:

1- it provide healthy food from waste materials

2- it provides job opportunities for young graduates and small investors

3- as it partially solved the problem of the accumulation of agricultural residues (wastes), especially rice straw ..etc

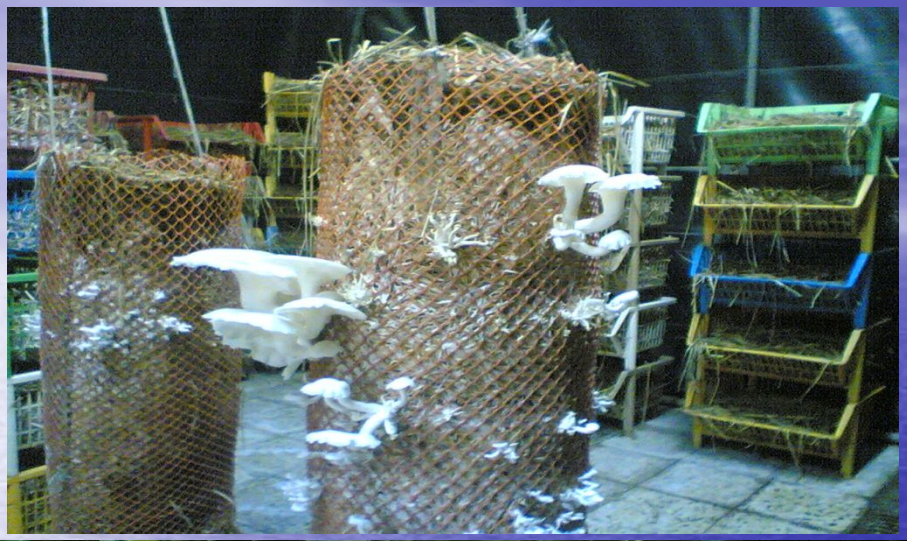
4- it also can provide good feed for animals

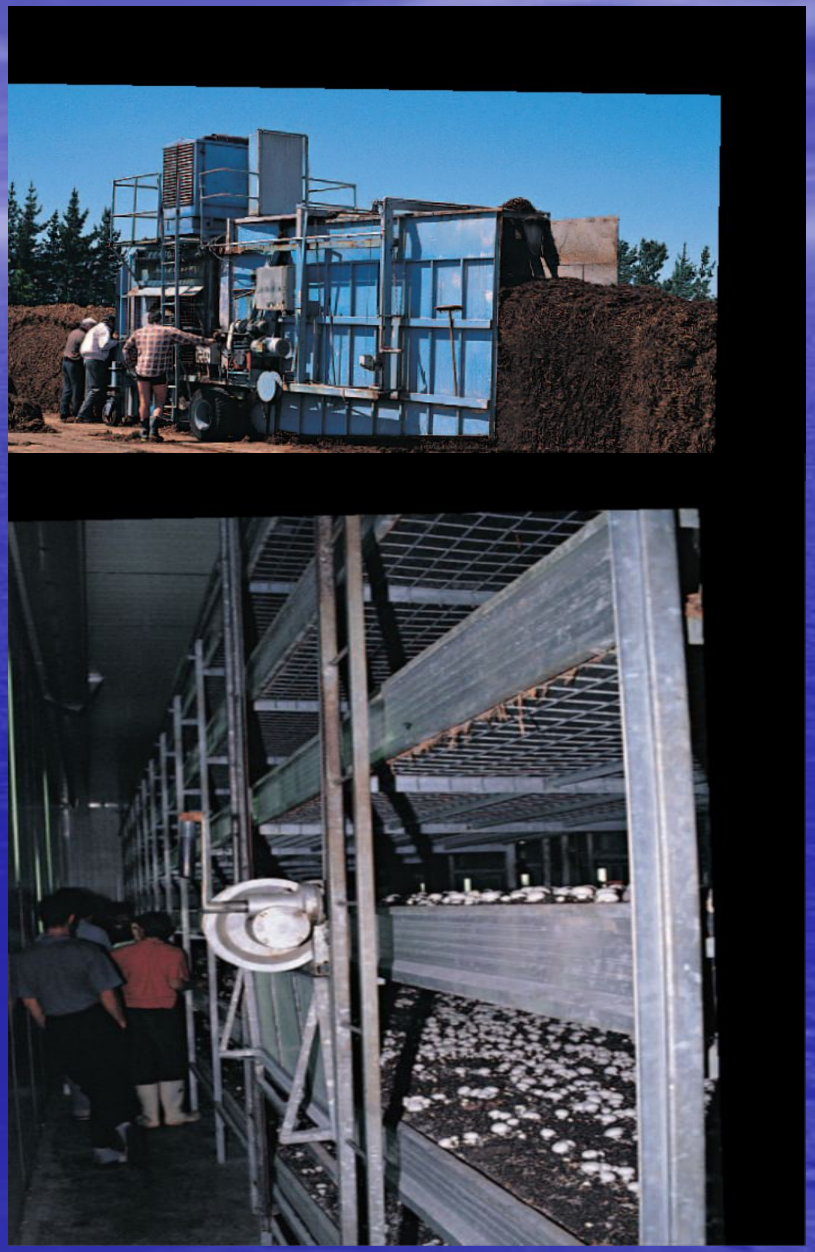
Proximate chemical composition of edible mushroom :

* as dry matter

Mushrooms *Pleurotus*	Mushrooms *Agaricus*	Constituents %
0.42 ± 88.96	0.42 ± 89.78	**Moisture**
0.4 ± 43.12	0.4 ± 42.17	**Crude protein***
0.6 ± 47.46	0.6 ± 49.80	**Total* carbohydrates**
0.05 ± 5.25	0.05 ± 3.42	**Crude fibers***
0.04 ± 35 .3	0.04 ± 4.11	**Crude fats***
0.001 ± 0.82	0.001 ± 0.49	**Total ash**

Cultivating mushroom





Cultivating mushroom

The fruiting bodies of Hypsizygus marmoreus (shimeji) growing in wide-necked plastic bottles

Pholiota nameko (nameko) fruiting through wide-necked bottles filled with substrate.

Health Benefits of Mushroom

Beta – Glucan
Anti- Oxidants
Vitamins
Minerals
Antimicrobial Agents

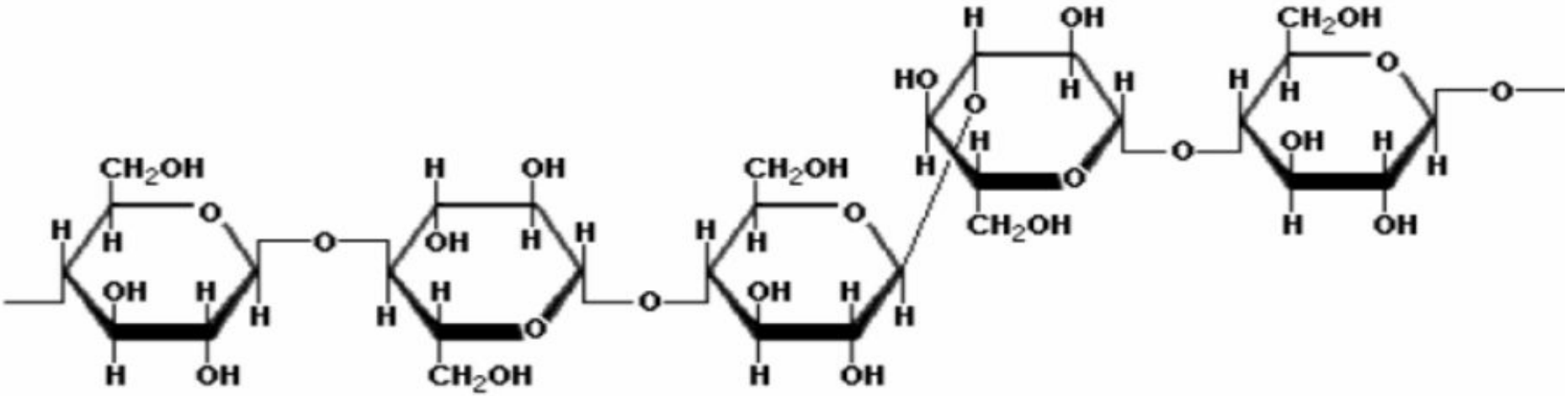
Ganoderma lucidum (reishi) fruiting on the base of a stump. MEDICINAL

Beta – β Glucan

The chemical composition of Beta Glucan is polymer of Carbohydrates contain chain of glucose with glycosides bonds, meanwhile the structure of this polysaccharides depended on the sources of β-glucan such as : Mushroom , Yeast, oat and barley …etc

Formula : $C_6H_{10}O_3$ - β.glucan 1⟶ 3 , 1 ⟶ 6

Molecular weight 100 – up to 2000 KD



Some Health benefits of Beta – β Glucan

FDA Accept after many studies to use 100 – 200 mg/kg b.w. daily

- **it can reduce the risk of many diseases such as**
- **Enhance for our body immunity system**
- **Reduce the cholesterol and lipid profile in blood**
- **Balance the blood sugar which help for persons with diabetes**
- **And prevent from cancer.**

New Dishes of Mushroom

Change our eating habits

THANK YOU FOR YOUR ATTENTION