

## Importance of High Value Crops (Swiss Chard, Dragon Fruit, Oyster Mushroom, Cherry Tomato) as Nutritional Source

Rudra Nath Mondal

BFIT Group of Institutions, Dehradun, Uttarakhand

ARTICLE ID: 065

### Introduction:

In today's world, due to the excess amount of climatic and weather threats, the yield of the crops gets lowered. Prolonged dry spells, changes in the amount of rainfall, rise in global temperature are the main features of this climatic problem. This climatic problem may not only destroy the crops but also damages the crop field diversity. Thus, reducing income earned by the farmers. Therefore, it's an urgent need of the era, to focus on the growing of some high value crops as a supplement along with the normal ones, so that if by chance crop failure occurs, then those supplement high value crops can be able to supply money to the farmers. If we look in the modern days, everyone wants the vegetables and fruits that are free from synthetic chemicals such as pesticides, fertilizers, etc.

### High Value Crops Cultivation Advantages:

- **Antioxidants:** In the human body, the metabolic reactions gives rise to various 'Free Radicals, which gets stored in the body and cause ageing diseases, such as excess fatty look. So, to prevent this, new high value should be eaten regularly. There are various High Yield Crops such as Dragon Fruit, which has antioxidant which does not allow the excess free Radicals to get deposited in the body, thus prevents ageing and cancer up to some extent.
- **Income Source:** The high value crops are also good source of income both as a main crop as well as a supplement crop. At present, a profit amount of about Rs 3000 – Rs 4000/bigha can be earned by cultivation of Rice. But in general, if we cultivate high value crops in that same amount of field, we can earn profit of about Rs 7000 – Rs 8000. The farmers of Tripura, Jharkhand, Odisha and most of regions of Purvanchal have chosen these crops as their key to earn more profit.
- **Sustainable Agriculture:** High Value crops such as Malta Orange, Dragon Fruit, etc.

Do not require much water. They utilize a small considerable amount of water for their growth, therefore, making them an important sustainable Agriculture crop. The Dragon Fruit plant usually do not occupy much space, they can be grown as a crop of kitchen garden as well as, a supplement crop in the main crop field.

- **Management of crop residues:** The proper sustainable management of crop residues can also be done. The straws obtained after harvesting of the cereals such as Rice, wheat, etc. can be used to prepare substrate for mushroom production after proper sterilization Thus, this is an eco-friendly way for managing the crop residues.

### Importance of Dragon Fruit :

**Scientific Name:** *Hylocereus undatus*

#### Nutritive value per 100 Gram Dragon Fruit:

<u>Calories</u>	<u>264 kcal</u>
<u>Protein</u>	<u>3.57g</u>
<u>Fat</u>	<u>0g</u>
<u>Carbohydrate by difference</u>	<u>82.14g</u>
<u>Total dietary fiber</u>	<u>1.8g</u>
<u>Calcium</u>	<u>107mg</u>
<u>Iron</u>	<u>0mg</u>
<u>Sodium</u>	<u>39mg</u>
<u>Vit. C, total Ascorbic acid</u>	<u>6.4mg</u>
<u>Fatty acid, total saturated</u>	<u>0g</u>
<u>Cholesterol</u>	<u>0mg</u>

### Uses of Dragon Fruit:

Regarding different uses of Dragon fruit, young stems of Dragon fruit as well as fresh flowers buds that are consumed as vegetables, but the dried ones are usually used for medicines. In various areas in Taiwan, dry flowers are eaten as vegetables. Beside this, it is also taken in the form of juice, jams or preserved according to the taste needed, besides used as fresh table fruit. It is widely used in fruit salads in various restaurants. Regular consumption of Dragon fruits helps in fighting against cough and asthma. This fruit also contains a high amount of Vitamin C, which helps to heal the wounds and enhance the immune system of the body.



Dragon Fruit is mostly used as a fresh fruit to relieve thirst due to its large amount of water content as compared with other nutrient levels. Health benefits of Dragon Fruit are also rich in Flavonoids, that acts against heart related problems. The Dragon fruit aids to treated bleeding problems of Vaginal Discharge.

Dragon Fruit is also rich in Vitamin B (B1, B2, B3), which posses an important role in health benefit. Vitamin B1 helps in increasing Energy Production and carbohydrate metabolism. Vitamin B2 helps to improve and recover the loss of appetite. Vitamin B3 plays a vital role in lowering bad cholesterol levels. It provides smooth and moisturizes the skin. This also improves Eye sight and prevents Hypertension.

Dragon Fruit is useful in reducing the blood sugar levels, therefore proving itself as a boon for the persons who are suffering from Type 2 Diabetes. It contains High levels of Phosphorus and Calcium, thus it helps to strengthen bones and play a vital role in tissue formation and forms Healthy teeth.

#### **Oysrer Mushroom Importance:**

**Scientific Name :** *Pleurotus ostreatus*

The Oyster Mushroom is also called as Dhingri Mushroom. The cultivation of the Oyster Mushroom is generally preferred for cultivation as compared to the other mushroom types. This is because, any Agricultural produce with cellulosic material can be used as substrate for the production of this mushroom. Therefore too much investment is also not required for this. The maximum proteins is obtained from per unit area of mushroom as compared to other Agricultural product which is generally cheaper and better than the vegetable proteins whose digestibility is 60-70%. More yields are obtained by Oyster Mushroom cultivation in comparison to Button and Chinese mushrooms. This mushroom generally yields more or less equal to the inputs i.e. 1Kg straw yields approximately 1Kg fresh Oyster Mushroom.

Oyster mushroom is the rich source of protein, vitamins, minerals, fiber and other antioxidants like selenium protect body cells from damage that might lead to chronic diseases and help to strengthen the immune system. Oyster mushroom is low in calories, fat free Cholesterol free, Gluten free and very low in sodium. Increasing the consumption of oyster mushroom decreases the risk of obesity, diabetes, cancer, heart disease, and increase the immunity system of body. A study was conducted in 2015, where the evidence was found

that the dietary fiber component of oyster mushrooms (*Pleurotus ostreatus*) may be useful in reducing triglyceride accumulation in the liver.

A study published in the *International Journal of Oncology*, in which tests on human cells demonstrated that an oyster mushroom extract may suppress the growth and spread of breast cancer and colon cancer.

Oyster mushrooms may enhance immune function, according to a small study published in the *Journal of Traditional and Complementary Medicine*. For the study, participants ingested an oyster mushroom extract for eight weeks. At the study's end, researchers found evidence that the extract may have immune-enhancing effects.

Another study was published reporting that oyster mushrooms contain compounds that act as immunomodulators that help to regulate the immune system.

#### **Nutrient Content in Oyster Mushroom:**

The nutrition information is provided by the USDA for a 1-cup serving (86g) of raw, sliced oyster mushrooms is as follows:

Calories	28
Fat	0.3g
Sodium	15.5mg
Carbohydrate	5.2g
Fiber	2g
Sugar	0.95
Protein	2.9g

Most of the calories come from carbohydrates (5.2g). The mushrooms are low in sugar, providing just under 1 gram of naturally-occurring sugar. A person will benefit from 2 grams of fiber if he/she eat them. rest of the carbohydrate in oyster mushrooms is starch.

The Oyster mushrooms are good source of proteins. They are also good source of Vitamins such as Niacin, Riboflavin, Pantothenic Acid, etc. Small amount of Folate, Thiamine, Vitamin B6, etc. are also present. The minerals such as Phosphorus, Potassium, Copper, Iron, Manganese, Magnesium, Zinc, Selenium are also present in this mushroom.

#### **Importance of Swiss Chard :**

**Scientific Name:** *Beta vulgaris, var. cicla*

Swiss Chard contains large amount of dietary fibers, Vitamin A, Vitamin C, Vitamin E, Thiamine, Folate, Vitamin K, Riboflavin, Vitamin B6, Calcium, Iron, Magnesium, Phosphorus, Potassium, Copper, Manganese. Among these nutrients, Riboflavin and Vitamin A usually plays a vital role as Antioxidants and helps to remove bad cholesterol from the body. This also prevents cancer. Proper blood flow in the body is also regulated by these nutrients. The dietary fiber present in Swiss Chard prevents Colon cancer. High amount of Iron usually enhances the immunity of the body and also maintains the Hemoglobin level in the body. The good amount of Calcium and Magnesium present in the Swiss Chard plays a vital role in formation and maintenance of proper structure and strength of the bones. The chart showing the amount of nutrients present in 100g leaves of Swiss Chard is as follows:

Calories	19 Kcal
Carbohydrate	1.9g
Fat	0.2g
Dietary fiber	1.6g
Vitamin A	6116 I.U.
Vitamin C	30mg
Vitamin E	1.9mg
Vitamin K	830 $\mu$ g
Riboflavin	0.1mg
Folate	14 $\mu$ g
Calcium	51mg
Iron	1.8mg
Magnesium	81mg
Phosphorus	46mg
Potassium	379mg
Sodium	213mg
Zinc	0.4mg
Copper	0.2mg
Manganese	0.4mg

Source: [www.nutritiondata.com](http://www.nutritiondata.com)

### Importance of Cherry Tomato:

**Scientific Name:** *Solanum lycopersicum var. cerasiforme*

The Cheery Tomato usually has the Bright Red colour due to the presence of Lycopene, which is generally a good Antioxidants. The Lycopene is also used in the preparation of various Homeopathic Medicines and also used in the treatment of Gout. The Cherry Tomatoes are generally rich in Vitamin C, Vitamin A, Vitamin K, Calcium, Potassium. Cherry Tomatoes are also used in Salads. The amount of various nutrients present per 100g of Cherry Tomatoes is as follows:

Calories	18 Kcal
Carbohydrate	3.9g
Protein	0.87g
Fat	0.2g
Vitamin A	833I.U.
Vitamin C	12.7mg
Vitamin E	0.5mg
Vitamin K	7.9µg
Niacin	0.6mg
Vitamin B6	0.06mg
Folate	15µg
Calcium	10mg
Iron	0.3mg
Magnesium	11mg
Phosphorus	24mg
Potassium	237mg
Dietary fibers	1.2g

Source: [www.nutritiondata.com](http://www.nutritiondata.com)

### **Conclusion:**

In the present scenario, where the climatic problems becomes an inportant threat towards production of good yield by farmers, the farmers should also focus on the production of these High Value Crops. Therefore, this would not only reduce the effect of Agricultural



losses incurred by them due to the climatic problems but also will help them to suffice their basic needs during hard times. While, the common people should focus on consuming these foods and become less dependent on synthetic medicines so as to prevent, cure diseases and gain nutrients as these crops can be called as Pool of Nutrients. The High Value Crops can be cultivated as Supplementary crops along with the main crops because most of these crops generally occupy less space. These crops can also be grown as Kitchen Garden crops and their care can be taken easily.

