



Microgreen: Nutritive food for future

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Microgreens are new generation smart food with full of nutrition and flavor. It consists of a central stem, two cotyledon leaves, and typically the first true leaves which are not more than 4-14 days old depending on the species. Microgreen may be called a stage in between the germinating seeds and baby greens. It is rich source of minerals and vitamins. It requires very less attention and land for its production. Further it can be accepting in our daily food habit as a nutritive food

With the reduction of cultivable land, and exponential growth of Indian population, the present situation is critical for food and nutritional security to each. Growing civilization lead to consumer much health conscious and are always searching for newer sources of nutritious product which not only give the nutrition, but also provide healthy life. Microgreens are such new generation smart food with full of nutrition and flavor. The America were first time use this in way back 1990, and later in 1998 it gives the term 'Microgreen'.

Micro-greens are generally tiny young edible greens produced from various kinds of vegetables, herbs and plants, harvested as seedling stage. Microgreens can be consumed in various manner like salads, soup, drinks, sandwich, and use for enhance the taste, colour, structure and flavour of different food articles. Recently, in five-star hotel, microgreen are highly demanded. It consists of a central stem, two cotyledon leaves, and typically the first true leaves which are not more than 4-14 days old depending on the species. It is quite different from germinating seeds, baby greens (seedling with 2 or more leaf stage) and full developed seedling. Microgreen may be called a stage in between the germinating seeds and baby greens. Plants propagated through seeds are selected

for microgreens. Based on seedling colour, texture, flavor and demand of the produce market the crops are selected. Crop should have quick germination and easily growing ability. Generally it grown in the pot and basket. The suitable crops for microgreen are all leafy vegetable, salad crop, spices, and condiment.

Production :

Microgreens are quite tender and soft in nature. It needs to grow only in protected structure like green house, net house and shed net. For the growing microgreen wide range of growing media can be used like coir, wood fibre, bark, paper fibre, peat moss, perlite, rock wool, coco-peat, vermiculite, vermicomposting, sphagnum peat, etc. Media should be well sterilized to prevent the infection from the microbes.



Table 1 : crop suitable for microgreens and their features

Common name	Scientific name	Category	Color
Palak	<i>Beta vulgaris var bengalensis</i>	leafy	Green
Coriander	<i>Coriandrum sativum</i>	leafy	Green
Kale or collard	<i>Brassica oleracea var acephala</i>	Leafy	Green
Maize	<i>Zea maize</i>	Cereals	Yellow
Radish	<i>Raphanus sativus</i>	Root	Green, pink
Cabbage	<i>Brassica oleracea var capitata</i>	head	Green
Spinach	<i>Spinacia oleracea</i>	leaf	Green



The dense planting should be avoided. After the seed germination, proper care should be taken. The seedlings are carefully watered twice daily and kept moist until harvesting. In tropical climate the crop are be ready to harvest at 7-14 days after germination, while it takes long time to harvest the crop *i.e.* 14-28 days in winter temperate season. As the growing period is too small, it can be grown with fertilization a p p l i c a t i o n . Consequently there is no effect of pesticides residues. After harvest, microgreens are



thoroughly hydro-cooled which extend the shelf-life. After that moisture are removed and produces are packed in plastic container. Modified atmospheric packaging is another better choice for better shelf-life and quality.

It is rich source of minerals and vitamins. Some bioactive compounds are present in microgreens *viz.*

carotenoids, phenolic, anthocyanins, glucosinolates, thiosulphides, saponins and dietary fibers. It acts as an immunomodulation, antioxidant, cardioprotective, anticancer, antiosteoporosis, lipid lowering and antidiabetic in human health. The carotene content of micogreen is equal to the carotene content of carrot. Alpha tocopherol (vitamin c derivative), and philoquinone (vitamin K derivative) are also present in microgreens.



Conclusion : As nutrinally rich and also strong in medicinal value, it is quite useful in our country. As the poor people here are sick and weak here, they can produced it at own resources without taking much pain and gain full healthy life. Not only for poor people it can be easily produced using limited input by urban or peri-urban settings where land is often a limiting factor. Since, they are usually consumed raw; hence there is no loss or degradation of thermolabile micronutrients through processing. Further it can be accepting in our daily food habit as a nutritive food.

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