MICROGREENS FOR HALE AND HEARTY TOMORROW

Dr. Jessie Suneetha W[1*], Dr. J. Hemantha Kumar[1], Dr. V. Chaitanya[1] andDr. R. Uma Reddy 2

[1]Krishi Vigyan Kendra, PJTS Agricultural University, Wyra, Khammam Dt.

[2]Regional Agricultural Research Station, PJTSAU, Warangal

INTRODUCTION

Microgreens are young vegetable greens that are approximately 1–3 inches or 2.5–7.5 cm in length harvested just after the cotyledon leaves have developed and possibly, with one set of true leaves. They possess aromatic flavour with concentrated nutrient content and come in a variety of colours and textures depending on the type of vegetable seeds used. These aromatic greens are also known as micro herbs or vegetable confetti that are rich in flavour and add a welcome splash of colour to a variety of dishes. They are considered to be baby plants falling somewhere between sprouts and baby greens. They should not be confused with sprouts as the later do not have any leaves. The sprouts have a much shorter growing cycle of 2–7 days, whereas microgreens are usually harvested between 7–21 days after germination only after the emergence of the plant's first true leaves.

Microgreens are more similar to baby greens as their stems and leaves are considered edible. But, unlike baby greens, they are much smaller in size and can be sold before being harvested. These microgreens can be bought whole, cut at home and kept alive until they are consumed. They are very convenient to grow as they grow in a variety of locations including outdoors, greenhouses, windowsills and so on.

From the time of their introduction in a South Californian restaurant in 1980s, microgreens have steadily gained popularity. Initially, a few varieties were offered that included arugula, basil, beets, kale, cilantro and a colourful mixture of these microgreen was called a "Rainbow Mix". Having spread eastward from California, they are now being grown in most areas of the United States with an increasing number of seed varieties. Microgreen seeds are no different from regular seeds and are the same varieties grown in the gardens at household level and farms.

DIFFERENT TYPES OF MICROGREENS:

Microgreens can be grown from many different types of seeds and the most popular varieties are produced using seeds belonging to following plant families:

- **Brassicaceae family:** Cauliflower, broccoli, cabbage, radish and arugula
- **Asteraceae family:** Lettuce,
- **Apiaceae family:** Dill, carrot, fennel and celery
- **Amaryllidaceae family:** Garlic, onion and leek
- **Amaranthaceae family:** Amaranth, quinoa beets and spinach
- **Cucurbitaceae family:** Melon, cucumber and squash

Cereals such as rice, oats, wheat, corn and barley as well as legumes like chickpeas, beans and lentils are also sometimes grown into microgreens.

HEALTH BENEFITS OF MICROGREENS:

Despite their trivial size, they pack a nutritional punch often containing higher nutrient levels than more mature vegetable greens. This makes them a good addition to any diet. While their nutrient contents may vary slightly, most varieties are rich sources of potassium, iron, zinc, magnesium and copper. They are also a good source of beneficial plant compounds like antioxidants and polyphenols. As their nutrient content is concentrated, they often contain higher vitamin, mineral and antioxidant levels than the same quantity of mature greens Certain studies comparing microgreens to more mature greens reported that nutrient levels in microgreens can be up to nine times higher than those found in mature greens. Eating more vegetables in diet is linked with lowered risk of many diseases due to high amounts of vitamins, minerals and beneficial plant compounds present in them. Besides being a popular garnish in different cuisines, tiny microgreens possess most evident health benefits that include:

- Microgreens are packed with nutrients including vitamin K and fibre, which help to manage high blood pressure and reduces the risk of heart attack.
- Microgreens are a rich source of polyphenol, a class of antioxidants linked to a lower triglyceride and "bad" LDL cholesterol levels in the body there by reducing the risk of heart diseases
- Consuming microgreens can also help reduce the inflammation in the body.
- A healthy diet that includes microgreens has also been proven to reduce the risk of cancer. Antioxidant rich microgreens are also known as "free radical scavengers. The presence of increased levels of exogenous antioxidants has been shown to

prevent the types of free radical damage that have been associated with certain types of cancer development.

- As microgreens are easy to grow at home with minimal supplies, they can be a great source of daily nutritional requirements.
- Most microgreens are rich in β-carotenes, which helps in preventing eye diseases and diabetes.
- Antioxidants may help reduce the types of stress caused by fighting free radicals which are unstable molecules that cause cell damage within the body and can prevent sugar from properly entering cells.
- As microgreens are consumed at the seedling stage, they can be grown all year-round for daily nutrition.
- Antioxidant rich foods containing high amounts of polyphenols attenuate oxidative stress, modulate signalling pathways and may lower the risk of Alzheimer's disease by enhancing the cognitive function.

Microgreens deliver a concentrated dose of nutrients and beneficial plant compounds thereby they may reduce the risk of certain diseases.

CAN EATING MICROGREENS BE RISKY:

Usually eating microgreens is generally considered safe. But, nonetheless, there can be the risk of food poisoning as due to potential bacteria growth which is much smaller in microgreens than in sprouts. These microgreens require slightly less warm and humid conditions than sprouts do. In microgreens, only the leaf and stem rather than the root and seed are consumed, whereas sprouts whole grains are consumed after germination. The most important point to consider is buy good quality seeds and choose suitable growing mediums that are free of contamination with harmful bacteria such as Salmonella and E. coli to avoid ill health effects. The most common growing mediums are peat, perlite and vermiculite. Single-use growing mats produced specifically for growing microgreens are considered very sanitary.

MICROGREENS IN DIET:

They can be incorporated into a variety of dishes including sandwiches, wraps, salads, soups, and dips for adding crunch. They can be blended into smoothies or juiced or added to milk shakes. Wheatgrass juice is a popular juiced microgreen. Another option is to use them as garnishes on pizzas, soups, omelettes, curries and other warm dishes.

GROWING MICROGREENS AT HOME:

Microgreens are easy and convenient to grow as they do not require much equipment or time. They can be grown all through the year both indoors or outdoors. The main requirements include good quality seeds, ideal growing medium, such as a container filled with potting soil or homemade compost. Proper lighting either sunlight or ultraviolet lighting, ideally for 12–16 hours per day.

INSTRUCTIONS:

- Fill a container with soil, making sure you do not over-compress it and water lightly.
- Next, sprinkle the selected seeds of choice on top of the soil as evenly as possible.
- Then lightly moist the seeds with water and cover the container with a plastic lid.
- The trays are to be checked daily and sprinkle water as needed to keep the seeds moist.
- In 2 to 3 days after the seeds germinated, the plastic lid may be removed to expose them to light.
- They can be watered once a day while your microgreens grow and gain colour.
- After 7–10 days, the microgreens are ready to be harvested.