

A close-up photograph of two red okra (ladyfinger) vegetables on a dark stem. The okra are a deep, vibrant red color and have a slightly bumpy texture. They are positioned vertically, with one slightly behind the other. The background is a soft, out-of-focus green, suggesting a garden or field setting. The lighting is natural, highlighting the texture of the okra.

# RED OKRA: A PROTECTIVE FOOD

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# INTRODUCTION

Red okra (*Abelmoschus esculentus* (L.) Moench) so called as 'Lady finger'. In various sites it is known by its unique name but in India it is commonly known as 'Lal Bhindi'. It belongs to family Malvaceae and having the highest chromosome number ( $2n=130$ ) among the vegetable crops. Vegetables are the major source of vitamins, minerals and dietary fibres etc. Okra is a one of the popular vegetable crop ranks 1st in production by India throughout the world. It is well known that nowadays diseases spread all over on the globe due to malnutrition. There is a specific need to induce some additional health conscious compounds that helps to enhance the good growth of living being and shows protective effect against illness. In addition, with operations of agriculture scientists and researchers they become successful in introducing a compound 'Anthocyanins' to green okra pods and changes the colour of pods to dark red.



## ANTHOCYANINS

Anthocyanins are the compounds which belongs to flavonoid group of phytochemicals. Additionally, these are water soluble colored pigments that relates with phenolics group. Usually responsible for colours such as red, blue and purple in most of the vegetables and fruits. Color of pigment totally dependent on factors i.e. pH, light, structure and temperature.



# PROTECTIVE EFFECTS OF RED OKRA

Okra serves as good nutritional vegetable food and it can be consumed as raw, cooked or boiled. Edible part of red okra is its dark red coloured pod. It consists of several minerals include potassium 303 mg, calcium 81 mg, phosphorus 63 mg, magnesium 57 mg, iron 0.8 mg present in per 100 g. Some of the major health benefits which described okra as a protective food source are-

❁ **Antidiabetic Properties:** According to World Health Organization around 422 million people suffers from diabetes in the world and it gradually increases every year. Okra seems to reduces the glucose level in the blood with its mucilage extract. This resulting in reduction in hyperglycemic or also called as High Blood Sugar.

❁ **Antioxidant Activity:** Antioxidants are the molecules that fight with free living radicals present in human body that results in harmful effects if radicals increases from their optimum level. Immature pods are used in servings in diet these immature pods contains number of seeds which consists of polyphenol (29.5%) which acts as a antioxidant property.

❁ **Anticancerous Effects:** As per World Health Organization statistics, about 10 million people died in 2020 due to various type of cancer i.e. lungs cancer, breast cancer, colon & rectum cancer, stomach cancer and liver cancer. Flowers of okra contains several amount of flavonoids and phenols that works against tumor growth and possess an anticancer property.

❁ **Anti-obesity:** According to World Health Organizations, more than 1 billion people suffers from obesity and it cause



damage to severe organs such as heart, liver, kidneys, joints and reproductive parts. Okra compounds help to reduce body fat and result in healthy weight gain instead of fatty weight gains.

❁ **Antimicrobial:** Red okra compounds possess antimicrobial activities especially against a wide range of pathogens and microorganisms. Protect the cell wall, cell wall membrane and its intercellular functions from disruption by microorganisms.

❁ **Immunity Booster:** Immune systems of living organisms have a unique role which acts as a protection cover to prevent diseases. Phytochemicals that are present inside okra work to boost immunity and make susceptible to fight against diseases. Phytochemicals are the compounds which generally help to create resistance against fungi, bacteria and infections etc.

❁ **Food additives:** Various processed foods which are highly nutritious such as colored jams, confectionaries and beverages etc. are colored using extracted anthocyanins. Red okra is rich in anthocyanin compounds which can be used to extract pigment and make nutrients rich processed food for living beings.

❁ **Appetizer:** Red okra possesses pharmaceutical properties which are highly useful for making appetite medicine and helps to enhance the appetite. This can be used as a good appetizer.

❁ **Eye Functions:** Due to the presence of anthocyanins, red okra helps in improving the visual functioning of those who suffer from tension glaucoma. Additionally, it shows a good impact on night vision.

❁ **Cardiovascular Functions:** The regular consumption of red okra helps to improve the platelets functioning as well as lipid profile in the body which is due to the presence of a rich source of anthocyanins.

❁ **Anemia Recovery:** Red okra is found to be a good diet source for people who suffer from a lack of haemoglobin in the body and meet the iron requirement in the human body.

❁ **Healthy Pregnancy Period:** It is found to be beneficial for the good progress of fetus growing in the womb. Amount of folate present in red okra is acceptable for brain development of fetus.

## SHELF LIFE OF RED OKRA

At room temperature red okra have a shorter period of shelf life. Consume the red okra same day to avoid decay otherwise it needs to be stored at optimum storage conditions to maintain their nutritional content, texture and aroma. Generally, it over-matures within a night and loses all its hardness and colour. Storage of okra requires 12.5°C temperature in ventilated packages to reduce spoilage, weight loss and provide a longer shelf life.

## CONCLUSION

In conclusion, Red okra is a good source of enormous nutrients and possesses rich amounts of health benefits. In comparison to green okra, red okra has an extra compound which is beneficial to prevent a number of health diseases. Moreover, red okra is better in taste and flavor after cooked. In addition, it proves to be highly beneficial for growers due to the price of red okra that is almost doubled than green okra in the market.