

farmer's weekly

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OKRA

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'IT'S ABOUT MUCH MORE THAN
HIGH-DENSITY GRAZING'



Okra: good for the body, great for the bottom line



FAST FACTS
Okra is a herbaceous and nutritious annual vegetable plant that grows to about 1m in height, depending on the cultivar.

It is a much-neglected crop worldwide, despite its alleged health benefits.

Okra has the potential to play a role in job creation and mitigating climate change, according to researchers at the Agricultural Research Council.

Okra is a valuable source of nutrients and has important medicinal properties too, according to **Abe Shegro Gerrano** and **Willem Jansen van Rensburg** of the Agricultural Research Council's Vegetables, Industrial and Medicinal Plants unit. Popular with subsistence farmers, it contributes to food security and good health, and helps provide much-needed income.

Current crop production systems promote the cultivation of staple food crop species, which results in so-called orphan crops being underutilised and unresearched. This is no less true of African orphan crops, and it is only recently that their value has begun to be appreciated by scientists and policymakers. These crops have much potential to provide food, feed, nutrition, health, income generation and job opportunities.

The orphan crop okra (*Abelmoschus esculentus*) has edible seed pods and is a valuable source of mineral nutrients. As such, it can contribute substantially to food and nutritional security in different parts of the world. It also has considerable genetic variability, which is important for breeding purposes.

Immature okra fruit is usually consumed as vegetables in the form of salads, soups and stews, and can be eaten fresh, dried, fried or boiled.

PRODUCTION PRACTICES

Okra, which is often called 'lady's finger', is thought to have originated in Ethiopia. It is one of a number of underutilised fruit vegetables grown in tropical and subtropical regions of the world, including South Africa.

Okra, which is produced from seed, is a herbaceous annual plant that can grow to about 1m in height, depending on the cultivar. The stems are either hairless or covered in small hairs. The leaves are heart-shaped and often lobed.

The flowers have yellow petals, and the fruit can be up to 25cm long and contain numerous seeds. Every part of the okra plant, namely the root, stem, leaf, flower, immature fruit and seeds, can be eaten.



Unfortunately, no formal market and seed system information is available for okra in South Africa, as it is eaten mostly by poor households and traded on the informal market.

The Food and Agriculture Organization of the United Nations estimates the turnover for okra in Africa was US\$106 million (about R1,5 billion) in 2018. It is gaining in importance among small-scale farmers in marginal crop-growing areas as an alternative fruit vegetable for food, income generation, and as a climate-smart crop.

OKRA HAS VITAL MACRO- AND MICROELEMENTS; ITS SEEDS ARE RICH IN PROTEIN, FAT, FIBRE, AMINO ACIDS, OIL AND SUGARS

In South Africa, okra is usually grown as a sole crop by communal farmers. Intercropping okra, however, can be an important farming method in a traditional production system to reduce the levels of insect pests and diseases, and to obtain higher yields. It can be intercropped with amaranth, cowpea, beetroot, and maize and other grains.

BENEFITS OF THE CROP

As mentioned, okra is a good source of minerals. It contains the following in order of concentration: potassium, calcium, phosphorus, magnesium, sodium, iron, aluminium, zinc, boron, manganese, and copper. It also has macro- and microelements that are important to human health (see Tables 1 and 2). The seeds are rich sources of protein, fat, fibre, amino acids, oil (20% to 40%) and sugars (see Table 3).



ABOVE:

The okra pod is known as 'lady's finger' in many parts of the world.

PHOTOS: PIXABAY

LEFT:

The flower is edible, as are all other parts of the plant.

BELOW:

There is no formal market for okra trade in South Africa, and the crop is grown mostly by subsistence farmers for self-consumption.

SUPPLIED

OPPOSITE PAGE:

The okra plant is thought to have originated in Ethiopia and is grown widely in Africa.

WIKIMEDIA COMMONS





ABOVE: Okra seeds are rich sources of protein, fat, fibre, amino acids, oil and sugars. The seeds can be used as feed for monogastric animals.

Table 1: Concentration of mineral elements (mg/kg) and total protein content (%) in immature pods of okra (dry basis) (figures rounded up)

K	Ca	P	Mg	Na	Fe	Al	B	Zn	Mn	Cu	Protein
22 592	5 748	4 003	3 507	475	333	122	34	38	24	8	15

Table 2: Concentration of mineral elements (mg/100g) and total phenolic (mg GAE/g) in the seeds of okra genotypes (figures rounded up)

K	P	Mg	Na	Fe	Zn	Mn	Cu	Total phenol reference
22 592	5 748	4 003	3 507	475	333	122	34	38

Table 3: Physico-chemical composition of seeds (%) and crude energy (figures rounded up)

Moisture	Fat	Fibre	Oil	Crude ash	Crude energy
6,35%	22% to 43%	26,34%	8,21%	4,63%	25,4 kcal/g

The seeds can also be used as feed for monogastric animals. In their immature form, the pods have a higher concentration of minerals, vitamins, carbohydrates, protein and fibre. The fruit is used for making soups and sauces with a gelatinous consistency. Sliced, dried okra fruit is common in Southern African markets.

It also contains polyphenol compounds that contribute to heart and brain health.

Some people drink 'okra water' (made from boiling the immature seeds in water) to obtain the nutrients in another way.

Eating okra may help control blood sugar, and the fruit is used as a food additive to treat gastric irritations.

MEDICINAL USE

Okra is rich in macro- and micronutrients such as magnesium, folate, fibre, and antioxidants, as well as vitamins A, B, C, and K1.

In addition to its obvious nutritional value, many claims have been made about okra's medicinal properties. Some say that it benefits pregnant women, and others have touted its anti-cancer properties. The plant is certainly rich in antioxidants and phytochemicals, which may reduce risk of serious diseases, prevent inflammation, and contribute to overall health.

INDUSTRIAL APPLICATIONS

Okra mucilage is used for industrial and medicinal applications in different parts of the world. Okra has also been used as a plasma replacement or blood volume expander, and has antidiabetic properties.

Fibre from the stem has industrial uses, such as in the reinforcement of polymer composites. The mucilage has flocculent properties, and its use in biodegradable food packaging is being investigated.

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