- A decoction of the fruits is used for the treatment of diarrhea, dysentery, and acute inflammation and irritation of the stomach, bowels, and kidneys.
- Seeds can be used as a tonic and stimulant and to relieve cramps or spasms.
- Roasted, seeds are used to induce sweating.

Pakbet Bikolano

Ingredients

1 medium size milkfish
10 pieces yardlong bean, sliced
6 pieces okra, cut lengthwise
2 medium size eggplants, cut into cubes
1 medium size bitter gourd, cut lengthwise
1 medium size sweet potato, cut into cubes
5 pieces winged beans, cut lengthwise
6 medium size tomatoes, sliced
1/2 cup fermented fish sauce

Procedure

- Slice the milkfish and put in a hot pan.
- Add all the vegetables in the pan, put first the vegetables that cannot be easily cook.
- Add the fermented fish sauce.
- Cover the pan and let it boil for 15 minutes.
- Remove from pan and serve hot.

Other ways of food preparation

- Young immature fruits are consumed raw, cooked, or fried, as a vegetable. When cut, the fruits exude a slimy substance that is used as a thickener for soups, stews, and sauces.
- Fruits are the main ingredient of a popular soup called "Créole Gumbo" (southern United States).
- Young, tender fruits are also sliced, dipped in egg and corn meal batter, and fried.
- Okra fruits can also be sautéed with corn kernels, onion, and sweet peppers.
- Fruits can also be steamed, baked, boiled, or stewed.
- Okra makes a good substitute for eggplant in many dishes.
- Fruits can also be canned, frozen, pickled or dried.
- Dried fruits are sliced, fried and made into a crunchy snack food (India).
- Okra leaves, flowerbuds, and calyces are cooked as greens.
- Leaves can also be dried, ground into powder, and stored for future use.
- Leaves are also used as a flavoring.
- Seeds are cooked or ground and made into bread, tofu, or tempeh.
- Roasted okra seeds make an excellent coffee substitute.

AVRDC
The World Vegetable Center
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Know Your IVs

Okra

Introduction

Okra or *Abelmoschus esculentus* belongs to the Mallow family (e.g., cotton, hibiscus). Although mainly grown for its immature fruits, okra has multiple and integral uses. It is either cultivated in home gardens or as a monocrop on commercial farms. Okra is a promising export crop to Japan and the Middle East.

Local Name

English — *okra, lady's finger, gumbo*
Bangladesh — *dhedosh*
Cambodia — *pôôt barang*
Indonesia — *okra, kopi arab*
Laos — *khüa ngwàng*
Malaysia — *kacang bendi, sayur bendi, kacang lender*
Philippines — *okra, saluyot a bunga, haluyot*
Thailand — *krachiap-khieo, krachiap-mon, bakhua-mun*
Vietnam — *d[aaj]u b[aws]p, b[uj] b[aws]p, m[uw] [ows]p t[aa]y*

Biodiversity

The exact origin of okra is unknown, although West Africa and Ethiopia have been cited in reports as possible centers of origin. It is believed that okra has been long cultivated by the Egyptians since the 12th century B.C. It is now widely distributed throughout the tropics and subtropics. It is most popular in India, West Africa, and Brazil, and is quite common in the Philippines, Malaysia, Thailand, and Vietnam.

Okra is a herbaceous annual with thick, branched, semi-woody stems that can reach up to 4 m. It has large, lobed, rough, bristly leaves and showy pale yellow flowers with a purple center. Immature pods are said to have a unique texture and sweet taste. The flavor of ripe pods are said to be a cross between asparagus and eggplant.

- Fruits varies from very pale green, green to greenish-purple and purple.
- Hairy capsules measure 5-35 cm long with a diameter of 1-5 cm.
- Fruits may have prominent ridges or smooth.
- It contains numerous, globe-shaped black seeds about 3-6 mm in diameter.

Cultivation

- Soften hard seed coat by soaking in water.
- Plant seeds in furrows 30 cm apart or at rate of 5 kg/ha.
- Plant seeds 10 cm apart in the row.
- Fruits are ready to harvest as early as 7 weeks after sowing.

Nutritional value

Nutrition Value (per 100 g edible portion)	
Water	90 g
Protein	1.8 - 2.4 g
Fat	0.1 - 1 g
Iron	1 g
Carbohydrates	7 - 8.2 g
Phosphorus	5 g
Calcium	7 - 12 g
Fiber	0.7 - 1 g
Potassium	2.5 g
Vitamin A	240 520 IU
Niacin	0.1 g
Ascorbic Acid	2 - 3 g
Energy value	145 kJ/100 g
Antioxidant (by ABTSM) water	109 µm/g (Medium)

Okra is a good source of vitamins A, B and C, calcium, and iron. It is especially rich in calcium compared to tomato and eggplant. It is also a good source of dietary fiber. Okra is a fat-free, low-calorie food that is ideal for weight loss diets. Okra seeds are high in protein.

Utilization

Aside from its use as food, okra can also be utilized in many ways.

- Leaves are used as cattle feed.
- Stem fibers are used to produce cord, paper, and textiles, and as a substitute for jute.

Okra is also said to have a number of medicinal applications.

- The roots, which are rich in mucilage, are used to soothe inflamed or injured skin, as a plasma replacement, and as a cure for syphilis.
- Leaves can be made into a soothing plaster that relieves skin irritations.
- A decoction of the immature fruits is said to relieve urinary disorders and soothe irritated skin. It may also be used to treat respiratory and oral ailments, and gonorrhea.

References

"*Abelmoschus esculentus*." Plants for a Future-Species Database. 20 October 2002. Plants for a Future. 8 November 2004 <http://www.scs.leeds.ac.uk/cgi-bin/pfaf/arr_html?Abelmoschus+ esculentus&CAN=COMIND>

AVRDC Vegetable Genetic Resources Information System (AVGRIS). 2005. AVRDC-The World Vegetable Center, Shanhua, Tainan,Taiwan.Website: http://203.64.245.173/avgris/

Christman, S. "*Abelmoschus esculentus*." Floridata. 9 September 2003. Floridata.com L.C. 8 November 2004 <http://www.floridata.com/ref/A/abel_esc.cfm>

Cook, WM. H. 1869. "The Physiomedical Dispensatory." Medherb. North American Institute of Medical Herbalism Inc. 8 November 2004 <http://medherb.com/cook/html/ABELMOSCHUS_ ESCULENTUS.htm>

Ehler, J. "Okra *(Abelmoschus esculentus* also *Hibiscus esculentus)*." Hub-UK. 2001. David Jenkins. 8 November 2004 <http://www.hub-uk.com/cooking/tipsokra.htm>

Facciola, S. 1990. Cornucopia, A Source Book of Edible Plants.

Indigenous Vegetables of Southeast Asia. AVRDC— The World Vegetables Center. http://203.64.245.173/sea_iv/

Siemonsma, J.S. and Kasem Piluek (eds.). 1993. PROSEA 8: Vegetables. The Netherlands: Pudoc, Wageningen. 1994. 412 p.

Yang Ray-Yu, Samson CS Tsou, Tung-Ching Lee, Wan-Jan Wu, Peter M Hanson, George Kuo, Liwayway M Engle and Po-Yung Lai. Distribution of 127 edible plant species for antioxidant activities by two assays. J Sci Food Agric 86:2395-2403. 2006.