



AMPALAYA

(Momordica charantia)

INDIGENOUS
VEGETABLES
OF THE
PHILIPPINES

No. 6 / 2018

AMPALAYA

*Momordica charantia***English names:**Bitter gourd, Bitter
cucumber, Balsam pear**Philippine local names:***Amargoso, Ampalaya*
(Tagalog, Hiligaynon),
Parya (Ilocano),
Palia, (Bisaya), *Pal-ya*
(Capiznon), *Sampaliya, Sampariya, Margoso*
(Hiligaynon, Capiznon), *Marigoso* (Bisaya);*Wild Ampalaya: Parya ti Bakir, Atap, Amo,*
Simaron (Ilocano)

AMPALAYA: MEET THE CUCUMBER'S BITTER HALF

Ampalaya is a perennial vine with distinct tendrils that grow up to 20 cm long. Leaves have 5 to 7 toothed lobes that are almost cut to the heart-shaped base. Its small yellow flowers grow up to about 3 cm in diameter. Fruit shapes vary between globular to oval with pointed ends, while sizes range from 3 to 11 cm long and 2 to 4 cm wide. All of them possess the characteristic prickles and ridges (called warts) that line the dark green Ampalaya fruit. You could think that the Ampalaya is the cucumber's "bitter version" as they look similar, if not for their skin textures. Ampalaya's scientific name gives reference to the "chewed up" appearance of its seed, since "Momordica" means "to bite" in Latin.

Ampalaya can be cultivated in various environments and soils but grows best in tropical or subtropical climates with well-drained sandy loam soils rich in organic matter. Perhaps because of its adaptability



and preference for warm environments, Ampalaya is popular among local markets in Southeast Asia especially in the Philippines.

There is the cultivated native variety in Ilocandia called *Amo* which has long fruits. Its leaves have 5-6 lobes with deeper teeth or serration.

“In Tarlac province, the native variety, *Ampalayang Kapa*, is so-called because one has to grope (*kapa*) around to feel out the fruits among the foliage. Their globular to obovate fruits are just right for *pakbet*, and are considered less bitter tasting than the popular hybrid variety that is also associated with *pakbet*.”

Ampalaya may also grow in the wild, especially native varieties. In Ilocandia, there is *Atap* or *Ampalaya ti Bakir* (literally, wild Ampalaya), whose leaves are preferred more over those of the popular hybrids. However, this wild Ampalaya's fruits have more intense bitter taste than the similar-looking hybrid. The leaves are distinguished from those of the commercial varieties by their thinner feel, and the rounded lobes that make their leaves look like a cat's footprint. The fruits also have more pointy warts.





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The Ampalaya has always been a popular indigenous vegetable remembered by many communities since way back. Its popularity has fueled research and development, resulting in the release and commercialization of several hybrids to meet the demand for specific traits and characteristics. The dominance of hybrid Ampalaya varieties has recently been noted in key vegetable-growing areas.





A BITTER VEGETABLE FOR BETTER HEALTH

Let's meet Ampalaya, in the vine. This bitter vegetable is also known to fight all sorts of ailments – from diabetes to skin disorders and fungal infections. It contains “charantin”, a vegetable insulin that lowers blood sugar levels, particularly benefitting those with diabetes. Half a cup of steamed Ampalaya a day is a home remedy for diabetes.

Aside from these, Ampalaya also helps alleviate anemia, and prevents leukemia, a type of cancer. The fruit is good for the spleen and liver, while the root is used in folk medicine to treat respiratory problems. It is a known remedy for headaches, wounds, burns, fever and many more.

Leaves of the bitter wild Ampalaya are also used as folk remedy to remove *subi-subu* (a type of birthmark in newborn babies called “Mongolian spot”), to prevent seizures in newborn babies. Small droplets are squeezed out of macerated fresh leaves directly into a baby’s mouth.

Did you know that Ampalaya is one of the most nutritious gourds? **Ampalaya leaves are rich in calcium, iron, phosphorus, vitamin B and vitamin C.**

DID YOU KNOW?

THAT
100 GRAMS
OF
AMPALAYA
FRUITS
AND
LEAVES
PROVIDE:

| | | Fruits | | Leaves | |
|-----------------------------|-------------------|--------|--------|---------|---------|
| | | Fresh | Boiled | Fresh | Boiled |
| Water | g | 93.50 | 96.30 | 84.00 | 87.60 |
| Energy | kcal | 25.00 | 19.00 | 57.00 | 50.00 |
| Protein | g | 0.90 | 0.40 | 4.50 | 2.20 |
| Fat | g | 0.40 | 0.20 | 0.60 | 0.60 |
| Carbohydrate | g | 4.50 | 3.80 | 8.50 | 9.00 |
| Dietary Fiber | g | (1.80) | 0.40 | 1.50 | 0.30 |
| Ash | g | 0.70 | 0.30 | 2.40 | 0.60 |
| Calcium | mg | 42.00 | 33.00 | 339.00 | 74.00 |
| Phosphorus | mg | 38.00 | 13.00 | 78.00 | 25.00 |
| Iron | mg | 0.80 | 0.30 | 4.80 | 0.30 |
| β-carotene | micrograms | 200.00 | 95.00 | 3685.00 | 1205.00 |
| Total Vitamin A (RE) | micrograms | 33.00 | 16.00 | 614.00 | 201.00 |
| Thiamine | mg | 0.05 | 0.01 | 0.12 | 0.03 |
| Riboflavin | mg | 0.04 | 0.01 | 0.38 | 0.11 |
| Niacin | mg | 0.20 | 0.10 | 1.50 | 0.60 |
| Ascorbic Acid | mg | 40.00 | 15.00 | 90.00 | 14.00 |

Source: Department of Science and Technology - Food and Nutrition Research Institute (DOST-FNRI). PhilFCT Online Database www.i.fnri.dost.gov.ph/fct/library/show/333; www.i.fnri.dost.gov.ph/fct/library/show/335; The Philippine Food Composition Tables 1997. Page 29.



SWEET REWARDS FROM A BITTER VEGETABLE

The inconspicuous empty stalls or *talipapa* across the basketball court from the *barangay* hall is a trading post for indigenous vegetables from the far-flung village of Palugsi-Limmansangan in Bauang, province of La Union. For other communities far from markets, indigenous vegetables mainly represent readily-accessible food for the household, rather than a marketable commodity. In Palugsi-Limmansangan, they are also a source of cash flow for villagers.



Meet Concepcion Cervantes of Palugsi-Limmansangan. This small lady of 70 years has helped several households in her village make a living by buying local indigenous vegetables from her co-villagers to supply her cousin's vegetable stall at the Baguio City Central Market. Of course, she would be less aware of her contribution to her neighbors' livelihoods, as she has been keenly focused on raising her own brood of four.

Every morning, the trading post comes alive with deliveries of *saluyot* (*Chorchorus olitorius*), *malunggay* (*Moringa oleifera*), chilli pepper tops, papaya, and of course, Ampalaya vines. Women bearing bundles of Ampalaya vines atop their heads make their way down the village road on foot to the *talipapa*. The Ampalaya vines with leaves intact are delivered. On this day in August, these vines are from a widely cultivated and marketed hybrid Ampalaya popular for *pakbet*. However, in the dry season, *Ampalaya ti Bakir* vines are harvested from the wild and make it to the market as well.

Mrs. Cervantes prepares and assembles her shipment of indigenous vegetables, including the Ampalaya tops. The vines are packed loosely in large PE bags. At 10:00 AM, a jeepney transports her and her indigenous vegetables to Baguio City, picking up other traders and their products en route. Each passenger pays a rate for their cargo, in addition to their fare for the 1.5-hr trip through 55 kilometers travelled of mostly mountain roads.

"Why Baguio City when San Fernando City Market is only a half-hour trip through the national highway?" we asked. "Oh I would not know how to sell in San Fernando or any other market", was her blunt reply, and agreed to our hunch that her cousin in Baguio City Central Market was the main link.

After the passengers unload their cargo at the Baguio City Central Market, the jeepney returns as a passenger jeep. Mrs. Cervantes stays behind for a while to do business.

Some days, she is paid cash for her Ampalaya tops and other indigenous vegetables; sometimes, she gets a partial payment; while at other times, she has to come back another day to get paid.

While we wondered how this small – and rather stoic-faced – lady managed all these for almost 50 years, she humours the curious by crediting her husband’s support in the task of loading her heavy cargo. As she continued her story that began with her cousin’s offer in 1971, family and a friend showed up to lend a hand in preparing her cargo.

Who would think that this quiet lady has been almost single-handedly bringing the famous city of Baguio bundles of healthy Ampalaya exclusively from the far-away village of Palugsi-Limmansangan and some cash back to her village? Now, she has earned her sweet reward, as the proud mother of two engineers, a graduate of Hotel and Restaurant Management, and one more soon to graduate from college.



THE FRUIT FLY AND OTHER (BITTER) ENEMIES OF THE AMPALAYA

From sowing to harvesting, there are many factors that ensure a healthy and abundant harvest. A factor that could make or break a great harvest is the presence of pests, with the Ampalaya’s most formidable pest being the destructive fruit fly.

Adult fruit flies do not feed on the growing Ampalaya but instead, lay eggs on them, damaging the plant. The maggots will then feed on the fruit which eventually leads to the poor quality fruits.

The fruit fly is not the only pest that can attack Ampalaya. You should also watch out for epilachna beetles, caterpillars, aphids and mites. It is best to use non-chemical methods to prevent pest infestation. Burying and burning of infected fruits help to prevent the spread of pests, while young fruits can be protected with paper bags or light traps and poison baits.



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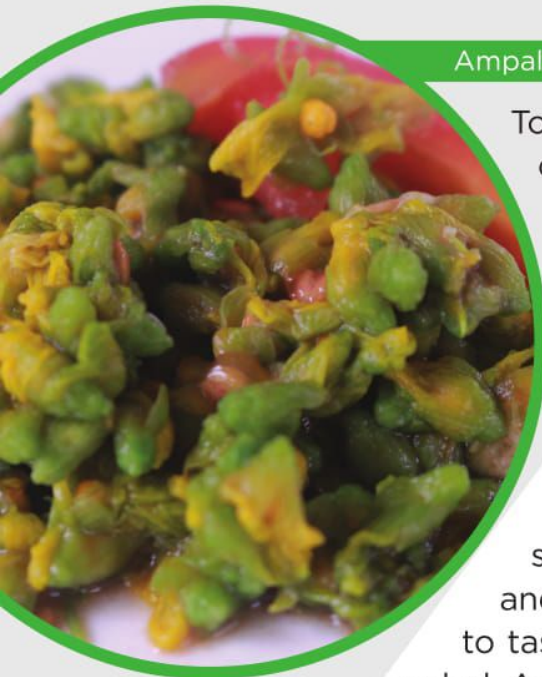
BITTER MEALS, ANYONE?



The fruits, young leaves and even the flowers of Ampalaya are utilized as vegetables - and there are many ways to prepare this bitter vegetable. If you prefer to lessen its bitterness, it may be blanched or soaked in salt water first. The bitter taste is more intense in wild Ampalaya, but its leaves are more preferred by the locals as a vegetable over the leaves of the more abundantly grown hybrid varieties.

Ilocana prepares *Dinengdeng* with Ampalaya in New York

Ampalaya fruits are highly identified with *pakbet*, along with locally available indigenous vegetables – whether Ilocano, Bisaya or some other regional version of *pakbet*. Then, there is, of course, the popular Ampalaya *con carne*; but possibly, the most common preparation in a modern-day home is sautéed Ampalaya with scrambled egg.



Ampalaya flower salad

Tops provide leafy greens in sautéed mungbean or other beans, as well as in a fish dish, or in *tinolang manok*. Ampalaya leaves also make their way to the traditional leafy soup dish *dinengdeng* or *inabraw* (Ilocano) or *laswa* (Ilonggo). Some go as far as to add Ampalaya leaves to the Ilonggo classic *tinuom*, a soupy, steamed chicken dish wrapped in banana leaves.

As a side dish, Ampalaya salad is prepared by simply mixing thin slices of the fruit with ginger and onions in vinegar, sprinkled with salt and pepper to taste. Ampalaya flowers can also be prepared as a salad. Ampalaya leaves, on the other hand, may be slightly blanched and served with tomatoes, onions, *bagoong* (fish sauce). Leaves or fruits are also mixed with mushroom, “black” string beans and ginger in a dish flavoured with *bagoong* or fermented fish paste.



GROWING BITTERNESS, HARVESTING BLESSINGS

Although wild Ampalaya (*Ampalaya ti Bakir*) is mainly valued for its leaves/tops, there are native varieties cultivated for their fruits as well. To grow ampalaya, provide trellises or poles for the vines to climb up. Hills are roughly spaced half a meter apart, with rows about 1.5 meters apart. Sprouts will begin to appear about 5 to 7 days after sowing. Flowers will start to appear 45 to 55 days from sowing and will continue up to 6 months during the cropping season.



Insects such as bees carry pollen from one flower to another, helping in the fertilization process needed for Ampalaya to develop fruits.

The green Ampalaya fruits can be harvested two weeks after the plant's flowering period (anthesis) using a pair of scissors or a knife to cut the stalk of the fruit before it is fully ripened so that fruiting will continue for a longer period.

The skin of the Ampalaya fruits tends to bruise easily, so it is advised that these are sold immediately after harvesting. If not, they can be stored up to three days in bamboo baskets cushioned with newspapers or banana leaves between the layers of fruits.

Like *Ampalaya ti Bakir*, Tarlac's *Ampalayang Kapa* leaves are also sold commercially especially in the dry season. However, unlike *Ampalaya ti Bakir* that grows uncultivated in the wild at the onset of rains, *Ampalayang Kapa* is commonly cultivated, particularly along dried riverbeds. They are cut and bundled like *saluyot* and other indigenous vegetables. Farmers set seeds aside for the next planting.





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BUT WHY IS THE AMPALAYA SO BITTER?

It is common knowledge that Ampalaya is the poster vegetable for bitterness. When someone says “Ampalaya”, the next word that you’ll think of is “bitter”. The two words go together like the best of friends. We call someone an “Ampalaya” when they are bitter and full of recriminations. In the theater scene, there’s a popular episodic play entitled “Ampalaya Monologues” that features ‘hugot lines’ about love, heartache and bitterness as experienced by different characters. Children dread seeing Ampalaya on the dining table. It is also prominently featured in the list of the most hated vegetables among many Filipinos.



Despite the folk lore that the vegetable became bitter because it was not included in the popular folk song *Bahay Kubo*, Ampalaya actually gets its bitter taste from a non-toxic alkaloid called momordicine, a chemical compound that is also the source of the vegetable’s medicinal properties. Thus, there is no reason to dread this vegetable; but there is every reason to learn to love it.

So, go ahead and brave the bitterness; there’s a healthy life ahead with Ampalaya.

ADDITIONAL REFERENCES

AMPALAYA (*Momordica charantia*)



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Focus group discussions

Barangay San Agustin and Barangay San Marcos
Municipality of San Nicolas, province of Ilocos Norte

Barangay Sumader
Batac City, province of Ilocos Norte

Barangay Dinwede East
Municipality of Cervantes, province of Ilocos Sur

Barangay Alilem Daya and Barangay Anaao
Municipality of Alilem, province of Ilocos Sur

Barangay Palugsi-Limmansangan
Municipality of Bauang, La Union province

Barangay Lacong and Barangay Lipay Proper
Municipality of San Gabriel, province of La Union

Barangay Agpay
Municipality of Burgos, province of La Union

Barangay Sto. Niño
Municipality of Maddela, province of Quirino

Barangay Bagumbayan-Ilajas and Barangay Buhay
Municipality of Alimodian, province of Iloilo

Barangay Dusacan and Barangay Jamog Gines
Municipality of Leon, province of Iloilo

Barangay San Jose
Municipality of Tapaz, province of Capiz

Barangay Lucero and Barangay Molit
Municipality of Jamindan, province of Capiz

Barangay Sta. Rosa
Municipality of Lopez, province of Quezon

Barangay Ilayang Palale and Barangay Lakawan
Municipality of Tayabas, province of Quezon

Barangay Datal Dlanag
Municipality of T'boli, province of Cotabato

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These small pamphlets are intended to spark renewed interest in the conservation, use, production and promotion of Philippine indigenous vegetables that have always been part of Filipino food culture and are key to household food and nutrition security.



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