PLANT FACT SHEET

Basella alba L.

GENUS *Basella* **FAMILY** Basellaceae

COMMON NAMES Indian spinach

EDIBLE PARTS AND USES

Edible parts: Leaves, Tender stems, Vegetable

The young shoots and leaves are eaten cooked. They are somewhat slimy.
In soups and stews the mucilage can be used as thickening.
The purple colour of fruit is harmless and is used to colour vegetables and agar-agar. Some lemon juice added to the dye enhances the colour.
The leaves can be eaten raw in salads or cooked like a vegetable. They are also dried and stored. When fresh they can be stored for 4-5 days.
The seeds can be crushed to use as an edible dye for jellies.
The leaves are used to make tea.

DESCRIPTION

An annual or perennial climbing herb with thick fleshy leaves. The vine is smooth and juicy and can be 10 m long. It branches freely. The vine and leaves can be red or green. The leaves are fleshy and pointed at the tip. They can be 8-18 cm long and 8-10 cm across. They are carried alternately along the vine. Leaves can be heart shaped or oval. It has white, pink or red flowers in short spikes which are in the axils of the leaves. Flowers have both sexes. The fruit are round and soft. They can be red, white or black and are 6-8 mm across. The seeds are round and black. They are 3 mm across. (Often the ones with heart shaped leaves are called Basella cordifolia, the ones with a red stem Basella rubra and the short day flowering dark green kind called Basella alba.)

HABITAT

A tropical plant. It occurs mostly in the tropical lowlands and is best below 500 m but will grow up to about 1600 m. in the equatorial tropics. It will grow quite well in the temperature range 15-35°C. It does not like water-logging but can survive 4-12 weeks drought once well established. It requires adequate water during the growing season. It grows well in a variety of soils. The best pH is 5.5-7.0. It cannot tolerate salty conditions. Flowering does not occur when day lengths are over 13 hours. It is found throughout the Philippines in waste places. It can grow in arid places. In XTBG Yunnan. At ECHO.

PRODUCTION

Cultivation

It can be sown from seeds or cuttings. Seeds germinate in a few days. Normally sticks are provided for support or it is allowed to grow over fences and stumps. If seeds are used, 3 kg of seed will sow one hectare and they are best sown in a nursery and transplanted. A spacing of 1 m is suitable. Plants grown from seed are more productive than from cuttings. When cuttings are used, 20-25 cm long cuttings are suitable. Where the plant grows over light soil it can root at the nodes and continue growing continually. Partial shade, rich fertile soil and adequate moisture favour abundant leaf production. It is responsive to nitrogen fertiliser. Light shade gives bigger leaves. It requires a trellis to climb over. Frequently picking off the bud encourages branching.

Harvesting and Seed Production

It is 4-6 weeks until the first harvest. It grows reasonably well on poor soils and is fairly resistant to pest and disease. Leaves will only store for one day at 20-30°C. Yields of 40 kg of leaves from a 10 metre square bed is possible over 75 days. Leaves are plucked from the vine.

NOTES

Chemical composition (after Hooper): Water = 92.00% (fresh). Fat = 6.87% (dry). Albumenoids = 20.42% (dry). Carbohydrates = 32.90% (dry). Fibre = 11.55% (dry). Ash = 28.27% (dry). Nitrogen = 3.27% (dry). Phosphoric acid = 1.32% (dry). Silicates = 6.70% (dry). The nutritive value of the leaves and young shoot is very high in terms of minerals and vitamins. It is gently laxative and slightly medicinal.

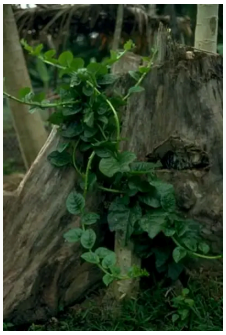
PICTURES



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)

REFERENCES

Indian spinach references

Abbiw, D.K., 1990, Useful Plants of Ghana. West African uses of wild and cultivated plants. Intermediate Technology Publications and the Royal Botanic Gardens, Kew. p 40

Abukutsa-Onyango, M.O., 2004. Basella alba L. [Internet] Record from Protabase. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. < http://database.prota.org/search.htm>. Accessed 14 October 2009.

Achigan-Dako, E, et al (Eds), 2009, Catalogue of Traditional Vegetables in Benin. International Foundation for Science.

Aher, S. R., 2023, Traditionally Used Wild Edible Plants from Dist. Washim (M.S.) India. Bulletin Monumental Vol. 24: Issue 8 p 72f

Ali, A. M. S., 2005, Homegardens in Smallholder Farming Systems: Examples from Bangladesh. Human Ecology, Vol. 33, No. 2 pp. 245-270

Altschul, S.V.R., 1973, Drugs and Foods from Little-known Plants. Notes in Harvard University Herbaria. Harvard Univ. Press. Massachusetts. no. 938

Ambasta S.P. (Ed.), 2000, The Useful Plants of India. CSIR India. p 68

Anderson, E. F., 1993, Plants and people of the Golden Triangle. Dioscorides Press. p 203

Andrare, G. M. M., et al, 2023, Plantas Alimenticias Nao Convencionais (PANC) Nos Levantamentos Etnobotanicos do Brazil. Novos Cadernos NAEA v. 25 No. 2 p 203

Ara, R. I. T., 2015, Leafy Vegetables in Bangladesh. Photon eBooks. p 17

Arinathan, V., et al, 2007, Wild edibles used by Palliyars of the western Ghats, Tamil Nadu. Indian Journal of Traditional Knowledge. 6(1) pp 163-168

Backer & Bakh. f. 1963-1968. Flora of Java.

Balkrishna, A., et al, 2022, Indigenous Uses of Plants among Forest-dependent Communities of Seijosa, Arunachal Pradesh. International Journal of Economic Plants 2022, 9(1):064-080

Bandyopadhyay, S., et al, 2012, A Census of Wild Edible Plants from Howrah District, West Bengal, India. Proceedings of UGC sponsored National Seminar 2012

Baro, D., Baruah, S. and Borthukar, S. K. 2015, Documentation on wild vegetables of Baksa district, BTAD (Assam). Scholars Research Library. Archives of Applied Science Research, 2015, 7 (9):19-27

Bernholt, H. et al, 2009, Plant species richness and diversity in urban and peri-urban gardens of Niamey, Niger. Agroforestry Systems 77:159-179 (As rubra)

Bircher, A. G. & Bircher, W. H., 2000, Encyclopedia of Fruit Trees and Edible Flowering Plants in Egypt and the Subtropics. AUC Press. p 54 (Also as Basella cordifolia)

Borrell, O.W., 1989, An Annotated Checklist of the Flora of Kairiru Island, New Guinea. Marcellin College, Victoria Australia. p 58

Brouk, B., 1975, Plants Consumed by Man. Academic Press, London. p 139

Brown, W.H., 1941, Useful plants of the Philippines. Department of Agriculture and Natural Resources. Vol 1 Manila.

Brown, W.H., 1920, Wild Food Plants of the Philippines. Bureau of Forestry Bulletin No. 21 Manila. p 56 (As Basella rubra)

Burkill, H. M., 1985, The useful plants of west tropical Africa, Vol. 1. Kew.

Burkill, I.H., 1935, A Dictionary of the Economic Products of the Malay Peninsula. p 251-253

Call, C. A., et al, 2004, Participatory Rural Appraisal in the Upland Ecosystem of Mt Malindang, Misamis Occidental, Philippines. Biodiversity Research Programme for Development in Mindanao.

Chauhan, D., et al, 2014, Diversity of leafy vegetables used by tribal peoples of Chhattisgarh, India. Int.J.Curr.Microbiol.App.Sci (2014) 3(4): 611-622 (As Basella rubra)

Chanda, M., et al, 2018, Assessment of Traditionally Used Wild Edible Plants and Its Impact on Health and Livelihood among the Ethnic Communities of Tripura. Asian Journal of Agricultural and Horticultural Research. 2(3): 1-13

Chao, Pi-Yu, et al, 2014, Antioxidant Activity in Extracts of 27 Indigenous Taiwanese Vegetables. Nutrients 2014, 6, 2115-2130

Chin, H. F., 1999, Malaysian Vegetables in Colour. Tropical Press. p 13 (As Basella rubra)

Creasy, R., 2000, The Edible Asian Garden. Periplus p 54

Cruz-Garcia, G. S., & Price, L. L., 2011, Ethnobotanical investigation of 'wild' food plants used by rice farmers in Kalasin, Northeast Thailand. Journal of Ethnobiology and Ethnomedicine 7:33 (As Basella rubra)

Dangol, D. R. et al, 2017, Wild Edible Plants in Nepal. Proceedings of 2nd National Workshop on CUAOGR, 2017.

Dansi, A., et al, 2008, Traditional leafy vegetables and their use in the Benin Republic. Genet Resour Crop Evol (2008) 55:1239–1256

Dobriyal, M. J. R. & Dobriyal, R., 2014, Non Wood Forest Produce an Option for Ethnic Food and Nutritional Security in India. Int. J. of Usuf. Mngt. 15(1):17-37

Dutta, U., 2012, Wild Vegetables collected by the local communities from the Churang reserve of BTD, Assam. International Journal of Science and Advanced Technology. Vol. 2(4) p 119

Eilu, G. & Bukenya-Ziraba, R., 2004, Local Use of Climbing Plants of Budongo Forest Reserve, Western Uganda. Journal of Ethnobiology 24(2): 307-327

Encke, F., et al. 1984. Zander: Handworterbuch der Pflanzennamen, ed. 13.

Full reference list (160 more) at https://www.echocommunity.org/en/resources/a0644eed-ea1e-459d-b438-97a37f5ac4a6

PROVIDED BY **Food Plants International**

French, B.R. & Maynard, A.R. Food Plants International Database. Food Plants International

LICENCE CC BY-NC-SA 3.0

ONLINE FACT SHEET https://www.echocommunity.org/en/resources/a0644eed-ea1e-459d-b438-97a37f5ac4a6