PLANT FACT SHEET

Durio zibethinus Murray

GENUS *Durio* **FAMILY** Malvaceae

COMMON NAMES Durian

EDIBLE PARTS AND USES

Edible parts: Fruit, Seeds, Leaves

The flesh around the seeds is eaten. Fruit need to be eaten within 2 days of falling from the tree. Fruit should only be opened at time of eating as the flesh goes sour. The unripe fruit can be cooked as a vegetable. Fruit are also processed for ice-creams and desserts.
The seeds are edible, usually cooked.
The young leaves and shoots can be cooked and eaten.
The raw fruit is used as a vegetable or in soups.

DESCRIPTION

A large evergreen tree up to 30-50 m high and with buttresses. The bark is dark red-brown and rough and peels off irregularly. The leaves are alternate and oval. They are about 10 to 15 cm long and 3 to 5 cm wide. The upper surface is smooth and shiny and the midrib is sunken. The lower surface is covered with silver scales. The flowers are on the older branches and form bunches of flowers where the lower flower stalks are longer. They have 3 to 30 flowers on a main stalk up to 5 cm long. The fruit are green to yellow, fat and up to 25 cm long by 20 cm wide. They have sharp spines over the surface. The seeds are completely covered with a yellowish soft very sweet seed covering. The fruit drop unopened. As the fruit ripens it splits open naturally into 3-5 sections which have large seeds embedded in a yellow coloured pulp. The seeds are oval and 4-5 cm long by 2.5-3.5 cm wide.

HABITAT

A tropical plant. A tree of the humid tropics preferably below 300 m altitude but they may grow up to about 800 m above sea level in the equatorial tropics. Trees are mainly within 15° latitude of the equator. They need plenty of soil moisture and a rich soil. For a tropical tree it can tolerate cooler temperatures down to 23°C and can tolerate temperatures up to 46°C. A rainfall of over 2000 mm evenly distributed throughout the year is best. A drier period during flowering is beneficial. Poorly drained or sandy soil are not suitable. It can grow well in acid soils with pH 5-6.5. In the Philippines they occur from Davao to Butuan and central Mindanao. It suits hardiness zone 12.

PRODUCTION

Cultivation

Trees grow readily from seed. Seeds need to be fresh. Seeds germinate in about 3 days and can be transplanted in about 4 weeks. Seeds do not breed true. Trees fruit about 7 years after planting. Trees can be grown by budding or grafting. A spacing of at least 14 m between plants is needed. Grafted trees seldom reach 20 m height. Heavy mulching near the trunk can help patch canker (Phytophthora palmivora) to develop.

Trees should be pruned and shaped for uniform branching and by topping to reduce excessive growth and give optimum production.

Harvesting and Seed Production

Grafted trees can produce in 4-5 years but seedling trees take 10 years. Flowers are cross pollinated by bats. Normally flowers cannot self pollinate. Flowers open in the afternoon and fall by next morning. Up to 50 fruit can be produced per tree per year. Between 0 and 400 fruit can grow on one tree and this varies with season. Fruit can be up to 3-5 kg weight. Fruiting is seasonal. Fruit take between 90 to 130 days from flowering to maturity depending on variety.

NOTES

There are about 20 Durio species. The family has been Bombacaceae. Also put in the family Durionaceae. Fruit are high in folates 400µg/100. In the subfamily Bombacoideae.

PICTURES



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)



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REFERENCES

Durian references

AAK, 1980, Bertanam Pohon Buah-buahan. Penerbitan Yayasan Kanisius, Jogyakarta. p 73

Alexander, D.M., Scholefield, P.B., Frodsham, A., 1982, Some tree fruits for tropical Australia. CSIRO, Australia. p 21

Ambasta, S.P. (Ed.), 2000, The Useful Plants of India. CSIR India. p 186

Arora, R. K., 2014, Diversity in Underutilized Plant Species - An Asia-Pacific Perspective. Bioversity International. p 69

Ashton, M. S., et al 1997, A Field Guide to the Common Trees and Shrubs of Sri Lanka. WHT Publications Ltd. p 71

Barwick, M., 2004, Tropical and Subtropical Trees. A Worldwide Encyclopedic Guide. Thames and Hudson p 159

Berry, S. K., 1980, Cyclopropene fatty acids in some Malaysian edible seeds and nuts: I. Durian (Durio zibethinus, Murr.) Lipids, Volume 15, Number 6 / June

Blench, R., 2004, Fruits and Arboriculture in the Indo-Pacific Region. Indo-Pacific Prehistory Association Bulletin 24. (Taipei Papers Volume 2) p 37

Bodkin, F., 1991, Encyclopedia Botanica. Cornstalk publishing, p 366

Bremness, L., 1994, Herbs. Collins Eyewitness Handbooks. Harper Collins. p 52

Burkill, I.H., 1966, A Dictionary of the Economic Products of the Malay Peninsula. Ministry of Agriculture and Cooperatives, Kuala Lumpur, Malaysia. Vol 1 (A-H) p 887

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.

Chai, P. P. K. (Ed), et al, 2000, A checklist of Flora, Fauna, Food and Medicinal Plants. Lanjak Entimau Wildlife Sanctuary, Sarawak. Forestry Malaysia & ITTO. p 166

Chatterjee, A. S., 1997, Fruit Trees in Cambodian Home Gardens. Trainers' training manual. Home garden series No.3 p 48

Cheifetz, A., (ed), 1999, 500 popular vegetables, herbs, fruits and nuts for Australian Gardeners. Random House p 190

Chiang Mai University Vol. 4 , 1964, bio1080uu, Table 6 p 50

Chin, H.F., & Yong, H.S., 1996, Malaysian Fruits in Colour. Tropical press, Kuala Lumpur p 3

Coronel, R.E., 1982, Fruit Collections in the Philippines. IBPGR Newsletter p 6

Cosiaux, A., 2014, Local uses of tree species and contribution of mixed tree gardens in Saleman. Village near Manusela National Park, Seram Island, Maluku (Indonesia) CIFOR working paper 137. p 35

Croft, J.R., in Henty, E.E., (Ed.), 1981, Handbooks of the Flora of Papua New Guinea, Melbourne University Press, p 13

Cundall, P., (ed.), 2004, Gardening Australia: flora: the gardener's bible. ABC Books. p 518

Darley, J.J., 1993, Know and Enjoy Tropical Fruit. P & S Publishers. p 43

Engel, D.H., & Phummai, S., 2000, A Field Guide to Tropical Plants of Asia. Timber Press. p 80

Etherington, K., & Imwold, D., (Eds), 2001, Botanica's Trees & Shrubs. The illustrated A-Z of over 8500 trees and shrubs. Random House, Australia. p 270

Facciola, S., 1998, Cornucopia 2: a Source Book of Edible Plants. Kampong Publications, p 50

Feld, D., 2021, A Systematic Checklist of Food Plants, including Herbs and Spices, and with an Index. p 9

Flowerdew, B., 2000, Complete Fruit Book. Kyle Cathie Ltd., London. p 156

French, B.R., 1986, Food Plants of Papua New Guinea, A Compendium. Asia Pacific Science Foundation p 265

French, B.R., 2010, Food Plants of Solomon Islands. A Compendium. Food Plants International Inc. p 254

Garner, R.J., and Chaudhri, S.A., (Ed.) 1976, The Propagation of Tropical fruit Trees. FAO/CAB. p 321

Hariyadi, B., 2008, The Entwined Tree: Traditional Natural Resource Management of Serampas, Jambi, Indonesia. Ph. D thesis. Univ. or Hawaii. p 444

Hazarika, B. et al. (2020). An overview of the unexplored underutilized fruit crops of Assam, India. Journal of Applied and Natural Science, 12(3): 442 - 453

Hearne, D.A., & Rance, S.J., 1975, Trees for Darwin and Northern Australia. AGPS, Canberra p 54

Hedrick, U.P., 1919, (Ed.), Sturtevant's edible plants of the world. p 283

Heywood, V.H., Brummitt, R.K., Culham, A., and Seberg, O. 2007, Flowering Plant Families of the World. Royal Botanical Gardens, Kew. p 128

Hibbert, M., 2002, The Aussie Plant Finder 2002, Florilegium. p 90

Hidayat, S., 2016, The use by local communities of plants from Sesaot Protected Forest, West Nusa Tenggara, Indonesia. BIODIVERSITAS. Volume 18, Number 1, January 2017 Pages: 238-247

Hu, Shiu-ying, 2005, Food Plants of China. The Chinese University Press. p 544

Jardin, C., 1970, List of Foods Used In Africa, FAO Nutrition Information Document Series No 2.p 134

John, L., & Stevenson, V., 1979, The Complete Book of Fruit. Angus & Robertson p 126

Kebler, P. J. A., & Kidiyasa, 1994, Trees of the Balikpapan-Samarinda area of East Kalimantan, Indonesia. The Tropenbos Foundation, Wageningen, The Netherlands. p 61

Kulip, J., 2003, An ethnobotanical survey of medicinal and other useful plants of Muruts in Sabah, Malaysia. Telopea 10(1) p 89

Lembaga Biologi Nasional, 1977, Buah-Buahan, Balai Pustaka, Jakarta. p 34

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