



## PLANT FACT SHEET

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# *Ananas comosus* (L.) Merrill

GENUS *Ananas* FAMILY Bromeliaceae

COMMON NAMES Pineapple

### EDIBLE PARTS AND USES

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**Edible parts:** Fruit, Shoots, Vegetable

The fruit is eaten fresh or used for juice. The fruit can also be sliced and cooked with ham.

The fruit is used in ice cream, jams and juices.

The young heart leaves can be eaten. They are cooked in curry dishes.

Unripe fruit are also cooked and eaten.

The flower spikes are peeled and sliced and steamed as a vegetable or added to stews.

The rind of the fruit is used for drinks.

### DESCRIPTION

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A perennial herb with a rosette of long, thick, spiky leaves up to 1 m high & spreading 1-1.5 m. The leaves are arranged in spirals. Some kinds have thorns along the edges of the leaves. The plant produces suckers both near the base of the stem and also higher up the stem near the fruit. These are called slips and these, and the suckers, are broken off and used for planting. The main plant dies after producing a fruit but the suckers keep growing. The plant produces a flower and fruit at the end. The fruit is made up of about 150 berry-like fruitlets that are almost fused together. There is a small crown of leaves on top of the fruit. The fruit can be 25 cm long and weigh 0.5-4 kg. The two main kinds of pineapples are the rough leafed variety which has spines on the leaves and produces a smaller but sweeter fruit. The other kind is the smooth leaf kind with spineless leaves and larger fruit. There are several cultivated varieties.

### HABITAT

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It is a tropical plant. They grow from sea level up to 1800 m altitude near the equator. It can survive brief periods down to freezing but cold retards growth, delays fruiting and causes fruit to be more acid. A friable well drained soil with high organic matter is best. Plants cannot stand water-logging. It can survive drought but adequate soil moisture is necessary for good fruit production. Pineapples need an annual average temperature between 17.2°C and 26.9°C. Growth ceases below 20°C. In the equatorial tropics this is mostly between sea level and 1800 metres altitude. Pineapples need well drained and fertile soil. They suit an acid soil and can develop rots in soils where lime has been added. The soil acidity can be between pH 3.3 and 6.0. The best range is pH 4.5 to 5.5. Soils which are not sufficiently acid can be treated with sulphur. It suits hardiness zones 9-10. In Yunnan.

## PRODUCTION

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### Cultivation

The suckers and slips can be used for planting as well as the top of the fruit. The time to maturity is the fastest for the suckers near the bottom of the plant and slowest when the top of the fruit is planted. Therefore use suckers that grow from the stem near the ground, for earliest yield. Other suckers or the top of the fruit can be used. Pineapples can grow well under shade. Pineapple flowering hormone can be used for fruit production with thorny varieties and calcium carbide for smooth kinds. Fruiting is less seasonal in the highlands than in the lowlands. Pineapples can be planted with 35,000 to 43,000 plants per hectare or 3 or 4 plants per square metre. If plants are spaced more widely they produce more suckers. Fruits become more acid where plants are closely spaced. If too many suckers are left growing from the main plant then smaller fruit will be produced. They can grow in partial shade and in this situation the plants are normally more green. The red colouring of pineapple leaves is due to a deficiency of the nutrient nitrogen. This shows up more quickly in plants in full sunlight. When the plant is sufficiently large it responds to changes such as less nutrients available or less water available, and starts to produce a flower, then a fruit. The number of hours of sunlight as well as reducing temperature and reduced sunlight also help the flowers start to form. The result of this is that flowering and fruiting is often seasonal. This can easily be changed by using a fruiting hormone which allows fruit to be produced at times to suit the grower.

Pineapples can grow in semi-arid conditions and this is because the leaves can store some water. They also tend to lose only small amounts of water evaporating through their leaves. But with plenty of water they can grow well. The roots are very sensitive to water logging. Therefore the soil must be well drained. Pineapples do not cover the soil well so it is good to use a mulch of plant material to help weed control, provide some nutrients and to stop soil erosion.

### Harvesting and Seed Production

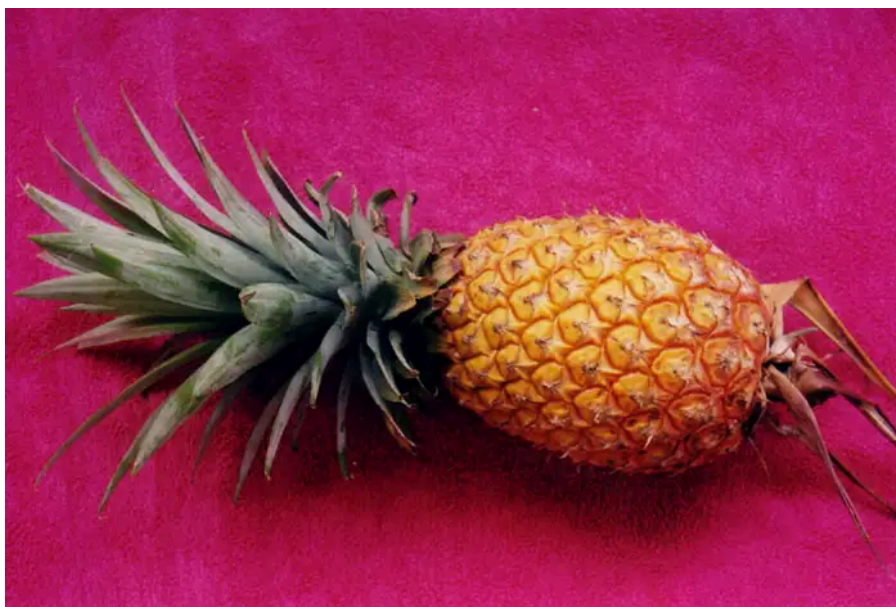
Plants usually produce for about 4 years. Fruiting is less seasonal in the highlands than in the lowlands in the tropics. The growth rate for pineapples gets slower as the temperature gets less. So plants grown in the highlands or at higher latitudes take longer to get ready for harvest. It takes 60 days from when the flower starts to form until it appears. Then there are 5 months until the fruit is ready for harvest. The time from planting to harvesting ranges from 11 months up to 32 months depending on temperature. The fruit are smaller, poorer shape and more acid where the temperatures are lower or there is less sunlight.

## NOTES

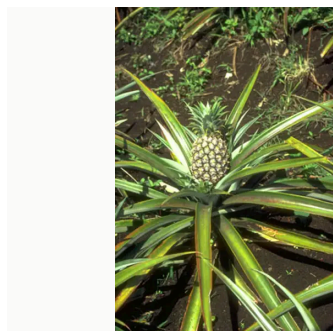
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There are 7 *Ananas* species. It contains a chemical called Bromelain which breaks down protein and is also antibacterial. It has antioxidant and antitumoral properties and is cardioprotective.

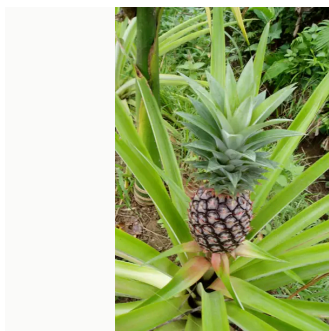
## PICTURES



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)



Credit: Food Plants International (Bruce French)



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## REFERENCES

- AAK, 1980, Bertanam Pohon Buah-buahan. Penerbitan Yayasan Kanisius, Jogjakarta. p 10
- 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 42
- Anderson, E. F., 1993, Plants and people of the Golden Triangle. Dioscorides Press. p 202
- 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 204
- Baidu-Forson, J.J., et al, 2014,. Assessment of agrobiodiversity resources in the Borotse flood plain, Zambia. CGIAR Research Program on Aquatic Agricultural Systems. Penang, Malaysia. Working Paper: AAS-2014-12.
- 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, 2009, Wild edible plants of Koch Bihar district, West Bengal. Natural Products Radiance 8(1) 64-72
- Bennett, B. C., 1990, Useful Plants of Amazonian Ecuador. US Agency for International Development. Fifth Progress Report. New York Botanical Gardens. p 40
- Bernholt, H. et al, 2009, Plant species richness and diversity in urban and peri-urban gardens of Niamey, Niger. Agroforestry Systems 77:159-179
- Bianchini, F., Corbetta, F., and Pistoia, M., 1975, Fruits of the Earth. Cassell. p 170
- Bircher, A. G. & Bircher, W. H., 2000, Encyclopedia of Fruit Trees and Edible Flowering Plants in Egypt and the Subtropics. AUC Press. p 26 (Also as *Ananas debilis*)
- Blench, R., 2004, Fruits and Arboriculture in the Indo-Pacific Region. Indo-Pacific Prehistory Association Bulletin 24. (Taipei Papers Volume 2) p 34
- Bodkin, F., 1991, Encyclopedia Botanica. Cornstalk publishing, p 79
- Bodner, C. C. and Gereau, R. E., 1988, A Contribution to Bontoc Ethnobotany. Economic Botany, 43(2): 307-369
- Bremness, L., 1994, Herbs. Collins Eyewitness Handbooks. Harper Collins. p 146
- Brickell, C. (Ed.), 1999, The Royal Horticultural Society A-Z Encyclopedia of Garden Plants. Convent Garden Books. p 111
- Brown, D., 2002, The Royal Horticultural Society encyclopedia of Herbs and their uses. DK Books. p 120
- Brown, W.H., 1920, Wild Food Plants of the Philippines. Bureau of Forestry Bulletin No. 21 Manila. p 34

- Burkill, H. M., 1985, The useful plants of west tropical Africa, Vol. 1. Kew.
- 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 149
- Chatterjee, A. S., 1997, Fruit Trees in Cambodian Home Gardens. Trainers' training manual. Home garden series No.3 p 29
- Chiang Mai University Vol. 4 , 1964, bio1080uu, Table 6 p 51
- Chin, H.F., & Yong, H.S., 1996, Malaysian Fruits in Colour. Tropical press, Kuala Lumpur p 22
- Chowder, T., et al, 2014, Wild edible plants of Uttar Dinajpur District, West Bengal. Life Science Leaflets. 47:pp 20-36  
<http://lifesciencesleaflets.ning.com>
- Cobley, L.S. (rev. Steele, W.M.) 2nd Ed., 1976, An Introduction to the Botany of Tropical Crops. Longmans. p 178
- Coe, F. G. and Anderson, G. J., 1999, Ethnobotany of the Sumu (Ulwa) of Southeastern Nicaragua and Comparisons with Miskitu Plant Lore. Economic Botany Vol. 53. No. 4. pp. 363-386
- 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 40
- Cull, B.W., 1995, Fruit Growing in Warm Climates. Reed. p 175
- Cundall, P., (ed.), 2004, Gardening Australia: flora: the gardener's bible. ABC Books. p 149
- D'Ambrosio, U., & Puri, R. K., 2016, Foodways in transition: food plants, diet and local perceptions of change in a Costa Rican Ngäbe community. Journal of Ethnobiology and Ethnomedicine (2016) 12:3 p 22
- Darley, J.J., 1993, Know and Enjoy Tropical Fruit. P & S Publishers. p 100
- Duarte, M. C., et al, 2022, Diversity of Useful Plants in Cabo Verde Islands: A Biogeographic and Conservation Perspective. Plants 2022, 11, 1313 p 10
- Facciola, S., 1998, Cornucopia 2: a Source Book of Edible Plants. Kampong Publications, p 61
- FAO, 2024, Compendium of forgotten foods in Africa - A companion publication for Integrating Africa's forgotten foods for better nutrition. Accra. <https://doi.org/10.4060/cc5044en> p 30
- Flowerdew, B., 2000, Complete Fruit Book. Kyle Cathie Ltd., London. p 144
- Fowler, D. G., 2007, Zambian Plants: Their Vernacular Names and Uses. Kew. p 15
- French, B., 1986, Food Plants of Papua New Guinea, Asia Pacific Science Foundation p 205
- French, B.R., 2010, Food Plants of Solomon Islands. A Compendium. Food Plants International Inc. p 204
- Fu, Yongneng, et al, 2003, Relocating Plants from Swidden Fallows to Gardens in Southwestern China. Economic Botany, 57(3): 389-402

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