



HONEYBUSH TEA

Production Guideline



agriculture,
forestry & fisheries

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PART I: GENERAL ASPECTS

1. Classification.



Botanical name: *Cyclopia intermedia*
Common name: Honey bush tea/ Bushtea
(English) Heuningtee, Bergtee, Boertee,
Bossiestee (Afrikaans)

The plant is a shrub of the Fabaceae family (*Leguminosae*) that grows in the fynbos botanical zone (biome). Honey bush plant probably owes its name to the yellow, honey-scented flowers that cover the bushes during spring. All the 23 known honey bush species belong to the genus *Cyclopia* and each have a characteristic distribution in nature. Some species prefer sandy, coastal plains, while others flourish on cool and moist mountain slopes.

Most of South Africa's honeybush crop comes from people harvesting wild-growing honeybush, especially *Cyclopia intermedia* ("bergtee"). A small, but growing number of farmers grow specific species, such as *Cyclopia subternata* ("vleitee") and *Cyclopia genistoides* ("kustee", also known as coastal tea) commercially. The indigenous shrub, belonging to the Cape fynbos biome, grows in the coastal districts of the Western and Eastern Cape Provinces, from Darling to Port Elizabeth, being bounded on the north by the Cederberg, Koue Bokkeveld, Klein Swartberg, Groot Swartberg and Kouga mountain ranges.

2. Origin and distribution

Honeybush tea is an indigenous herbal tea to South Africa, which has a pleasant taste and flavour. The tea grows wild in the Western and Eastern Cape Provinces in areas ranging from Piketberg to Port Elizabeth. The use of honey bush tea was first documented in 1705. In 1772 a Swedish botanist recorded that he found "honigtee" during one of his field trips in the Cape. The earliest record of the early Cape colonists using it as a medicinal plant dates back to 1830.

The scientist reported in 1881, after scientific research that the herbal tea was caffeine free. During the 1930s honey bush tea was harvested in the Kouga. 'Caspa Tea' is the oldest example of honey bush tea packaging which dates back to the 1960s.

In 1992 scientists started looking into the propagation and cultivation of honey bush in Kirstenbosch. Further research took off at the Infruitec-Nietvoorbij Research Institute of the Agricultural Research Council (ARC) in Stellenbosch where honey bush research was looking at farming and quality aspects.

The first time that honey bush was harvested from a commercial plantation was in 1996, and during the same year a standardised method for processing was developed at the ARC and Stellenbosch University. Small-scale and emerging farmers got involved in 1998. Also in 1998, the first organic honey bush was produced and researchers at the ARC produced the first green honey bush tea. They also started collaborating with scientists at the University of the Free State and the Medical Research Council to investigate the composition and cancer-fighting properties of honey bush. It was only in 1992 that the honey bush was first investigated for cultivation. Research initiated by the South African National Biodiversity Institute (SANBI) and funded by the Agricultural Research Council (ARC) saw the first commercial plantation of honey bush being established in 1996.

3. Production levels

South Africa's honey bush industry is still very young and produces an average 394 tons per annum (dry tea), but it is not the same each year. Most of this crop is exported to countries such as the Netherlands, Germany, the UK and the USA. Currently, 82% of honeybush tea is wild-harvested and only 18% cultivated. Approximately 30 000 ha of honey bush tea are still harvested in the wild areas. The cultivated tea comes from a few farmers who have established successful honey bush plantations, as well as a handful of community-based projects around Haarlem, Ericaville, Groendal and Genadendal.

There are approximately between 60 to 120 hectares of honey bush tea under cultivation; however, generally the tea is harvested from the natural mountainous veld. There are ten commercial growers of Honey bush tea who contribute 20 % of the annual production. Some of the plantations under cultivation are managed by the Haarlem and Ericaville communities, who have ten and five hectares respectively.

4. Major production areas in South Africa

Honey bush tea grows in the wetter Eastern Cape mountains and spreads down along the Langeberg and Swartberg mountains into the Western Cape towards the coast as far as Bredasdorp. It is estimated that there are approximately 30 000 ha of mountainous land, including the Tsitsikamma, Kouga, Baviaans, Langeberg and Swartberg mountain ranges, where wild honey bush grows sporadically within the greater fynbos biome.

5. Cultivars

There are lots of species of honey bush tea found in the wild, of which mainly four or five are in widespread homes or for commercial use. These are:

- *Cyclopia Intermedia*, known as 'bergtee' (mountain tea), found between Port Elizabeth and the edge of the Langkloof.
- *Cyclopia Genistoides*, known as 'kustee' (coastal tea), found mostly in the Western Cape near Yzerfontein and Darling and also thriving in the South Cape if cultivated.
- *Cyclopia Maculata*, grown in the Outeniqua area near George.
- *Cyclopia Sessiliflora*, known as 'Heidelberg-tee', named after the town Heidelberg in South Africa, where it grows in the local mountain range.
- *Cyclopia Subternata*, known as 'vleitee' (marshland tea) or 'valleitee' (valley tea).

Some species can be cultivated whereas others have resisted all attempts at cultivation and must be harvested in the wild. *Cyclopia Intermedia* (Mountain tea) is one of the teas that is harvested in the Kouga mountains where it grows naturally.

6. Description

6.1 Mature plant

Honey bush tea is a long-lived perennial plant. The life span of the bush is around 15 years and then after that it should be replaced.

FLOWERS

The plant has single-flowered inflorescences and sweetly scented, bright yellow flowers. During the flowering period the bushes are easily recognised in the field as they are covered with distinctive, deep-yellow flowers, which have a characteristic sweet honey scent. *Cyclopia intermedia* flower in September/October.

LEAVES

The honey bush tea plant is easily recognised by its trifoliate leaves. Leaf shape and size differ among the species, but most have thin, needle-like to elongated leaves.

STEM

Honeybush tea plants have woody stems. A much-branched woody shrub with golden yellow stems, it grows to about one metre.

SEED

The plant has hard-shelled seeds. The brown seeds are formed in small pods that turn brown. The pods dry and split open within a few weeks as the seed ripens.

6.2 Essential part

The entire plant (leaves, stem and twigs).

7. Climatic requirements

7.1 Temperature

Different honey bush tea species prefer different temperatures and climate conditions. Honey bush needs to be planted in full sun. It prefers the cooler, wetter, misty conditions on the southern slopes of the mountains, and is also found in very specific habitats such as on mountain slopes, marshy areas, and coastal bands, depending on the species.

7.2 Water

Seedlings should be watered for the first two weeks. After that the plants are only watered in excessively dry conditions.

8. Soil requirements

Honey bush species prefer well-drained, sandy to sandy loam-type soils with a low pH (below five), low phosphorus and low nematode (roundworm) counts.

PART II: CULTIVATION PRACTICES

1. Propagation

Sowing in seedling trays, via seeds or cuttings, should take place between summer and autumn, and the young seedlings are grown in a nursery before being planted out during the winter, preferably before the end of August. Seeds can also be planted directly into the ground in the fields (without using seedling trays), but need a 20 seconds boiling water treatment to enable the seed to germinate in the soil. When the 20 seconds are over, the water is drained and the seeds planted. Both propagation practices are used with success.

2. Soil preparation

It is extremely important to prepare soils properly for honey bush cultivation. Soil preparation begins by clearing lands formerly used as pastures of all existing fynbos and alien vegetation, then works the soil to a depth of between 45 to 50 cm with a ripper. During soil preparation phosphorus should be applied using rock phosphate, at a rate of 500kg/ha (this is depending on soil quality and soil analysis).

3. Planting

The seeds are sown after the first winter rains at a density of 4 000 to 6 000 plants/ha on ridges about 10 to 15 cm high, to help ensure a well-drained root zone. Sowing is done by hand or with a modified vegetable planter. The seed should be planted about 1 cm below the surface instead of just sowing it onto the surface. After planting, no irrigation, fertiliser or chemical control should be applied. At planting, the seeds are inoculated with Rhizobium for optimum plant growth. Honey bush is a legume and thus requires inoculation to promote Nitrogen fixation. Planting seedlings usually takes place during the months of August and October.

4. Fertilisation

No fertilisers, pesticides or fungicides have been used in the entire production process of honey bush tea.

5. Irrigation

Irrigation practices are only used for seedlings in nursery plant trays. If the seeds are directly planted in the ground, no irrigation is needed, as they are planted during the winter when rain irrigates the soil enough for growth to take place.

6. Pest control

Mice often eat the seed pods, which can have a negative effect on the amount of seed pods that are harvested. Thus, justifying falcon and owl perches/stands in the honey bush tea field to encourage natural prey-hunter behavior to take place instead of interfering with chemicals

7. Disease control

If plants are more susceptible to roundworm (nematodes) they often die or their growth is severely compromised. If this is the case, the plant is not harvested for

tea or their seed pods, for the seeds within. Thus continuing a long term breeding program where only disease free plant material are used and multiplied.

8. Weed control

It is critically important to eradicate weeds before planting because once the honey bush has been planted; weeds can only be controlled by manual weeding. Before planting, recommended weed herbicides can be sprayed, to kill off as many weeds as possible. After planting, weeds and other fynbos plants can be controlled by using a slasher.

9. Other cultivation practices

CUTTING

This is the common method of cutting materials before “fermentation”. All the tea that is harvested is cut by the cutting machine. The cutting machine chops the tea into small pieces varying from 1 to 7 mm pieces that are fermented or immediately dried, as in the case of green tea.

10. Harvesting

10.1 Harvest maturity

According to traditional methods tea is harvested in early autumn or late spring -depending on the flowering period of the species. Tea can also be harvested in spring during the flowering period or just after flowering so that the producers can first harvest seed from selected plants. However, with the increasing demand of honey bush tea, harvesting period can be extended to late summer. The tea is harvested once a year, after which the plants are left to grow naturally until the next harvest.

10.1 Harvesting method

Honeybush tea is harvested by hand. A sickle or pruning-shears can also be used for harvesting tea. At harvest time, the shoots (leaves, stem and twigs) of the plant are cut and gather the honey bush branches in bundles. Also different harvesting practices are used:

- Harvesting of only the young growth;
- Cutting of the bush as low as possible from the ground;
- Cutting it approximately 0.33 m from the ground.

PART III: POST-HARVEST HANDLING

1. Sorting

The entire bushel of tea is pushed through the cutting machine. The sorting of the different cuts of tea is only done after the drying process has been completed.

2. Processing

FERMENTATION (OXIDATION)

There are currently two distinct methods used for honey bush tea fermentation which are: fermentation in a curing heap and fermentation at elevated temperatures or using a baking oven.

HEAP FERMENTATION

The common method of honey bush tea fermentation is the use of curing heap, especially when large quantities of tea are produced. A round oval shaped heap of approximately 4 to 5 metres in diameter and 2 meters high formed from 1.5 to 2.5 tons of green honey bush material. The heap is left for three days to allow spontaneous heat generation and fermentation.

During the fermentation period, the material changes from green to dark-brown and develops a sweet aroma. If a sweet, honey-like aroma is present and the material has a dark-brown colour, the heap is spread open in a thin layer and allowed to dry in the sun.

STEAM FERMENTATION

Processing starts with finely chopped honeybush. The material is placed in fermentation tanks, where it ferments at 70°C for two days and three nights. A small amount of water is added to kickstart the fermentation. Depending on the moisture in the plant, more water is then added as required. Processed material therefore varies between 6 mm and 3 cm length. It is believed that the final product's appearance is improved by sun drying.

DRYING

After fermentation, the tea is dried on outdoor drying racks exposed to the sun. Also a commercial dryer can be used when outdoor conditions are unsuitable. The tea normally takes 1 to 2 days to dry, but this depends on the thickness of the layer as well as the prevailing weather conditions.

3. Grading

The tea is graded according to the application:

- Super fine (mostly used for string-and-tag tea bags);
- Regular fine (mostly used for swimming tea bags or loose tea application);
- Coarse (mostly used for loose tea application).

4. Packing

Tea can be packaged, either in bulk as loose tea or in small quantities under their own label, i.e. Agulhas Honeybush Tea. Only 10% of tea produced in their processing facility is packaged and sold under their own brand name; the rest is sold in bulk to local and international tea buyers.



5. Marketing

Approximately five brands of packed honeybush tea and/or blends are distributed nationally in retail outlets by National Brands, Unifoods and Trophy distributors. Big multinational and local companies such as Lipton, Freshpak and Five Roses have launched honey bush under their own brand names. Other smaller brands are distributed to farm stalls and local Spar supermarkets. Spar and Woolworths are the first supermarket chains to launch their in-house honey bush brands. There are 15 tea brokers who export Rooibos and honey bush teas and four retail product brokers who include packed honeybush tea as part of a basket of other products exported.

There are also three Honey bush processors who export directly in bulk and value-adding processors who export directly in bulk. Other industry export and investment facilitators are Wesgrow, TISA and the WC Department of Economic Affairs and Tourism. Future customers of Honeybush tea are UK, Japan, Germany and Switzerland.

PART IV: PRODUCTION SCHEDULES

ACTIVITIES	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Soil sampling												
Soil preparation												
Planting												
Weed control												
Harvesting												
Marketing												

PART V: UTILISATION

It is used to make a beverage and a medicinal tea. The leaves of Honey bush are commonly used to make herbal teas. Honey bush extracts can potentially be used in the food and beverage industry as flavourings in ready-to-drink beverages such as ice tea, fruit juice blends and sweets. Honey bush tea is potentially used by the cosmetic and pharmaceutical industries and can also be used to fight cancer, headaches, depression, cardiovascular problems, high cholesterol a host of other ailments. The seeds can be used to make tea oil.

PART VI: REFERENCE

DENENE ERASMUS. 2012. *Honeybush Tea: a taste of success*. Farmers weekly, April 06, 2012. <http://www.farmersweekly.co.za/article.aspx?id=17003&h=Honeybush-Tea:-a-taste-of-success>.

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