

Novel Farm Development Trial with Cape Gooseberry



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The information in this report is accurate to the best of the knowledge and belief of the author(s) acting on behalf of the ARGOS Team. The author(s) have exercised all reasonable skill and care in the preparation of information in this report.

¹ <http://www.ngaitahu.iwi.nz>

² <http://www.argos.org.nz>

³ <http://www.frst.govt.nz>

Introduction

This brief report gives an overview of the He Whenua Whakatipu field trial with Cape Gooseberries and subsequent attempts to create novel developments from the fruit of the plant in 2010. Unfortunately, due to cultivation problems and seasonally cold weather there was only a very limited amount of Cape Gooseberry fruit available for novel development and as such a full range of experimentation could not be carried out.

Cape Gooseberry Background

Family: Solanaceae

Species: Physalis peruviana l.

Common names:

Cape Gooseberry, Goldenberry, Husk Cherry, Peruvian Ground Cherry, Poha and Poha Berry.

Origin:

The cape gooseberry is native to Brazil, but long ago became naturalized in the highlands of Peru and Chile and has become identified with all of these regions. It was being grown in England in 1774 and was cultivated by early settlers at the Cape of Good Hope before 1807. Soon after introduction to the Cape the plant was carried to Australia where it quickly spread into the wild. Seeds were taken to Hawaii before 1825 and the plant is naturalized on all the islands at medium and somewhat higher altitudes.

Description:

The cape gooseberry is a soft-wooded, perennial, somewhat scrambling plant reaching up to a meter in height. Under good conditions it can grow much taller, but will need support. The purplish, spreading branches are ribbed and covered with fine hairs.



The heart-shaped leaves are around 5 to 15cm long. The leaves are slightly “velvety” when compared with the narrower and smoother leaves of the tomatillo, while being very similar to the tomatillo, but it is then smaller and narrower and does not have the same scent.



The bell-shaped, nodding flowers form in the leaf axils. They are yellow in colour with dark purple-brown spots in the throat, and cupped by a purplish-green, hairy calyx. Fruit buds are produced after 12 to 13 stem internodes are formed.



After the flower falls off, the calyx expands, forming a straw-coloured husk much larger than the fruit enclosed, which take 70 to 80 days to mature. The fruit is a berry with smooth, waxy, orange-yellow skin and juicy pulp containing numerous very small yellowish seeds. As the fruits ripen, they begin to drop to the ground. The unripe fruit is said to be poisonous to some people. Cape gooseberries are self-pollinated, but pollination is enhanced by a gentle shaking of the flowering stems or giving the plants a light spraying with water (as is sometimes the practise with glasshouse tomatoes).

I was unable to take any good pictures of this as the spring and summer seasons had been so cool that it was not possible for any of the plants to properly develop ripe berries. I had to harvest the berries semi-ripe and hold them at 20 degrees for 2 weeks before they were “acceptably ripe” for further experimentation with processing into new products, and even after artificial ripening I was still not happy with their flavour (as compared to other years).

Cultivation Observations and Recommendations

The Cape Gooseberry plant material was obtained from some of my own plants at home. I had taken cuttings in late May the previous year and had them overwintered in a glasshouse. It is here I believe I made my first mistake as first year seedlings are much more vigorous and so would have produced ripe fruit earlier. The cuttings were planted out on gentle sloping land that is north-facing and very sheltered) on the 1st of November 2009. The first flowers were observed around mid-January and the plants continued to flower the whole way through to mid-June. The first and only picking was done on the 26th of April from 6 plants and 250 grams of fruit was collected (and some of those were not even fully ripe).



My second mistake was that I had given them good horticultural care and a fairly rich diet, whereas in hindsight it turns out that they do much better in marginal soil with total neglect. When cultivated in the way carried out for this trial, whitefly and aphids can become major pests. When this pest infestation gets mixed (as it did this year) with heavy rains while the fruit is ripening then there is the potential for the *Penicilium* and *Botrytis* moulds to wreak havoc.

If this crop was to be considered for commercial production it would be highly recommended that an area of marginal land at an elevation between 300 to 1000 meters gets sown in mid-spring and then left to grow wild until the ripe fruit can be picked in the autumn. This area should become naturally smothered with the plants and will require hardly any maintenance or up-keep. In this way it should become naturalised so that it can be “wild harvested” whenever required. I believe this may fit with a hunter gatherer society like South Island Maori. Care would need to be taken with a trial of this sort to ensure that it does not become

another wild pest plant, but having been in New Zealand for a relatively long time already with no indication of this naturally occurring then this is an unlikely scenario.

Novel Development Value Added Application

Due to the problems associated with using cuttings instead of seedlings resulting in the plant growth not being as vigorous as it could have been and coupled with a cold spring and summer this meant that this was a very poor season for the production of Cape Gooseberries. As such, I had very little fruit to experiment with to try and add value through further processing. As previously mentioned the first and only picking was in late April, even though I had hoped to have subsequent harvests. I decided to macerate the only fruit that could be harvested with gin in a glass jar (seen below).



I can think of many other potential applications, but without the raw product it was not possible for me to experiment with different recipes in order to develop good tasting products. However, here a few of my thoughts on potential options:

- Cape gooseberries cooked with apples and/or ginger make a very distinctive dessert as the flavours would combine in an original way (a bit like pear, camembert and walnuts).
- The fruits are also an attractive sweet when dipped in chocolate or other glazes or pricked and rolled in sugar. We used to do these with a caterer for the royal house (Ludovic) in Belgium (1992). These culinary delights were artistically displayed on large round mirrors.
- The high pectin content makes cape gooseberry a good preserve and jam product that can be used as a dessert topping.
- The fruit also dries into tasty "raisins".

It is clear that many restaurateurs find these little “golden berry” an absolute treat to use as garnish on many desserts and some beverages. However, they have a problem in that no-one is currently commercially supplying these. This is a potential niche market that a small, but very lucrative business could be set-up to take advantage of in supplying these berries to high value cuisine restaurants all over New Zealand. It would require further trials to establish efficient growth parameters for the soils and temperate climate of the South Island.