

Fruit Juice and Jam

Adding Value to locally grown fruits by turning them into juices and jams and then selling the produce in your community at a profit!

START UP COSTS: \$500 (jams) - \$3,000 (fruit juices)

PROFITABILITY: \$450 p/month based on production of 500 500ml bottles p/month (passion fruit juice)

NEEDED: Start-up for capital investment, raw fruit surplus, access to markets

BARRIERS: Start-up costs, technical knowledge required, need of market

Introduction



Passion Fruit Pulp

This guide will introduce you to making fruit juices and jams. Fruit is available in almost everywhere in the world. In much of the world it is eaten as it grows. There are however, a huge number of benefits by 'adding-value' to the fruit locally. You can use almost any fruit, such as pineapples, mangoes, bananas or limes, and using simple procedures turn them into processed juices and jams. Inside is an introduction to producing your own juices and jam – enjoy!

What types of Fruit Processing are available to me?

1) Juices

A wide range of drinks can be made using extracted fruit juice or fruit pulp. The two focused on here are: (1) those drunk straight after opening – either pure fruit juice or diluted with some water that cannot be stored and (2) fruit concentrate, which is much stronger, can be used little by little from a bottle, is diluted by adding water and can be stored between use. Importantly, option (1) needs a reliable clean water supply near production too!



Finished Jams

2) Jams & Chutneys

Often eaten with bread at breakfast or lunch, jams or preserves are solid gels made from fruit pulp, sugar and pectin (which can be made from fruit skin and pulp) that are finding an increased market in many countries, particularly in more affluent urban areas. Almost all fruits can be made into Jams or Chutneys – some favourites include orange, mango and guava.

Should I make fruit juice and/or jam?

There are three factors that will decide whether or not processing of fruit is for you:

- 1) The demand for a particular fruit as fruit juice or jam (this is vital);
- 2) The quality of the raw material, i.e. whether it can withstand processing;
- 3) Regular supplies of the raw material at low or no cost.



Homemade
Passion Juice

Advantages of Fruit Processing:

1) Adding Value

Raw fruits often have little economic value, especially when the harvesting season is the same as everyone else's! By making it into juice, you are adding value to the product, which allows you to sell it at higher price and make a higher profit in the process.

2) Long Lasting

Both Jams and Juices can last for extremely long periods of time if stored correctly. In many countries fruit harvesting is still based on seasons, and so usually a particular fruit is consumed at 1 or 2 times a year. By preserving the fruit as jams and juices customers can enjoy these fruits all year round – and by selling them outside of harvest time they will fetch a much better price than the raw fruit!

3) Transferrable and Lifelong skills

Involving students in the process gives them clear identifiable skills that they can carry with them throughout life - even if the products are only used to feed the family (rather than for generating income). Once learned, making juices and jams is a relatively straightforward procedure.

Jams

Cost: Medium-Low

Difficulty: Medium-High

Fruit Suitability: Mango, Passion Fruit, Pineapple, Berries, Lime, Guava, Orange



Making Jam

The preservation principles of jam and other preserve production are quite complex, but in essence involve the correct combination of acidity, sugar level and pectin (which is in the fruit pulp and skin). All three must be correct to obtain a satisfactory product. To control acidity, citric acid is used, which is available from many shops and pharmacies. Accurate scales are needed to weigh out the ingredients, and a stove required to boil the jam. Once boiled, it should be left to cool before being packaged in clean glass jars, ready for sale!

More detailed information can be found at www.teachamantofish.org.uk

Juice

Cost: High

Difficulty: Medium-High

Fruit Suitability: Passion fruit, Lime, Lemon, Pineapple, Guava, Orange, Mango



Manual Juice Machine

There are a huge number of different ways to make fruit juices. How you make it depends on the variety chosen and must be done carefully to suit local tastes. Juices drunk straight after opening are easy and simple to make. Those used little by little from bottles – which means they are stored between use - require preservatives to ensure a long shelf-life after opening.

Preservation is achieved by a combination of natural acidity, pasteurisation and packaging in sealed containers. Once the juice has been prepared, it needs to be pasteurised. Pasteurisation requires the juice to be heated at around 90°C for 1-10 minutes prior to filling into bottles. This can be achieved by heating the juice in a stainless steel pan over a gas flame (firewood can be used if the temperature can be moderated). Once bottled it is ready for sale!

When making juice, it is also useful to have a lockable room with cooking facilities and drinking water available. In the room you do not want window sills or rafters where dust, insects and bird droppings can collect. *See the boxed text for two recipes for Passion Fruit Juice (drunk on opening) and Passion Fruit Concentrate (can be stored)*

Passion Fruit Juice:

- + 5 ripe Passion fruit
- + sugar (to taste)

Cut open ripe passion fruit, scoop out flesh into blender. Add 3 times amount of water and run blender for 1 minute. The seeds will separate from the juice. Pour mixture through cloth/sieve to catch seeds. Add 3 times more water again, and sugar to taste. Pour into bottles. Will make 2 ½ litres of juice.

Passion Fruit Concentrate:

- + 12 Passion fruit- pulp
- + 3 1/2 cups sugar- if too sweet add less next time
- + 3 cups water
- + 15g magnesium sulphate
- + 10ml citric acid

} Preservatives

In a pot bring to the boil sugar and water, remove from heat, add citric acid and magnesium sulphate, stir to dissolve. Lastly add the fruit pulp, let cool completely and pour into storage container. Let cool before use. Pour 10ml into a glass and add water to flavour! Will make 4-5 litres of concentrate.

Costing: Passion Fruit Juices (not concentrate)

The figures below are a rough estimate of the costs of making your first batch of 1,000 bottles of Passion Fruit Juice (not concentrate). Figures are estimates in US dollars – your start-up and operating costs could vary dramatically, so research your own situation first. The biggest problem with selling juice remains demand from the market. If demand is high, then you will be able to recover your initial investment after around 2,000 bottles have been sold.

Note: Jam figures have not been included, but start-up costs can be assumed at around \$500.

Figures: Passion Fruit Juices (not concentrate)

| Start-up Costs | | | |
|-----------------------------|-----------|----------|----------------|
| Item | Unit Cost | Unit (s) | Total Cost |
| Start-up Costs: | | | |
| Fruit Extraction Machine | \$900 | 1 | \$900 |
| Blender | \$150 | 1 | \$150 |
| Other Equipment | \$150 | 1 | \$150 |
| Utensils | \$40 | 3 | \$120 |
| Bag/Bottle Sealer | \$200 | 1 | \$200 |
| Contingency Fund (10%) | | | \$180 |
| Total Start up Cost: | | | \$1,700 |

\$0.90 profit per bottle of juice.
2,000 bottle production to recoup investment.

| 1,000 passion fruit juice 500 ml bottle production | | | |
|--|-----------|----------|----------------|
| Item | Unit Cost | Unit (s) | Total Cost |
| Other ingredients | | | |
| Packaging | \$0.50 | 1,000 | \$500 |
| Passion Fruits | \$0.50 | 1,000 | \$500 |
| Sugar (per bottle) | \$0.20 | 1,000 | \$200 |
| Other ingredients | - | - | \$200 |
| Machinery running costs | \$0.50 | 1,000 | \$500 |
| Labour | \$0.20 | 1,000 | \$200 |
| Total Operational Cost: | | | \$2,100 |
| Fruit Juice (500ml) | \$3.00 | 1,000 | \$3,000 |
| TOTAL REVENUE | | | \$3,000 |
| TOTAL PROFIT | | | \$900 |

Further Information

For more detailed info on how to make particular juices or jams see Practical Action: (<http://practicalaction.org/practicalanswers/>) and CTA www.anancy.net/index.php?destination=collection&specific=collect&spec_coll=23&subtheme_id=87&language=english).

For information on other income generation ideas please visit the Teach a Man to Fish (www.teachamantofish.org.uk) website.