

The Benefits of Berries and Agro-Processing

Part 2

Theresa Siebert
Agricultural Research Council
Natural Resources and Engineering

Production of berries in general is increasing in South Africa. This is largely due to the release of commercial cultivars that have become accessible to South African growers and the expanding export market. Berry fruits are highly perishable and have a short shelf life. Thus, edible quality is closely tied to freshness of the fruit. For this reason, care must be taken in harvesting, storage, and marketing of fresh berries. In this second article on the processing of berries, the focus is on some processing options for gooseberries, and redcurrants.

BERRY PROCESSING OPTIONS:

Gooseberries:

Gooseberries are best adapted to areas with cool moist summers. The yellow gooseberries have the richest flavour for dessert. The red berries are generally more acidic. The fruit is used for tarts, pies, sauces, chutneys, jams, and dessert, also for preserving in bottles. Good quality gooseberry wine very closely resembles champagne.

- Gooseberry juice may be manufactured from fresh or frozen gooseberries. Gooseberry juice is mainly used in juice blend since there is a limited demand



for pure gooseberry juice. Gooseberries for juicing should be harvested at full size, but before turning colour. Pure fruit juice contains no additives, but several other ready-to-drink products can also be manufactured. Unsweetened gooseberry juice consists of natural juice prepared from gooseberries of good quality and which contains no additives other than permitted preservatives, colorants, acidifying agents, natural essence, ascorbic acid, and carbon dioxide. Sweetened fruit juice may contain up to 5 % natural sweeteners or any permitted artificial sweetener in the desired quantity. Various other products including nectars, squash and gooseberry flavoured drinks are manufactured by the addition of sugar or other permitted sweeteners, acids, artificial colours, and flavours and permitted preservatives.

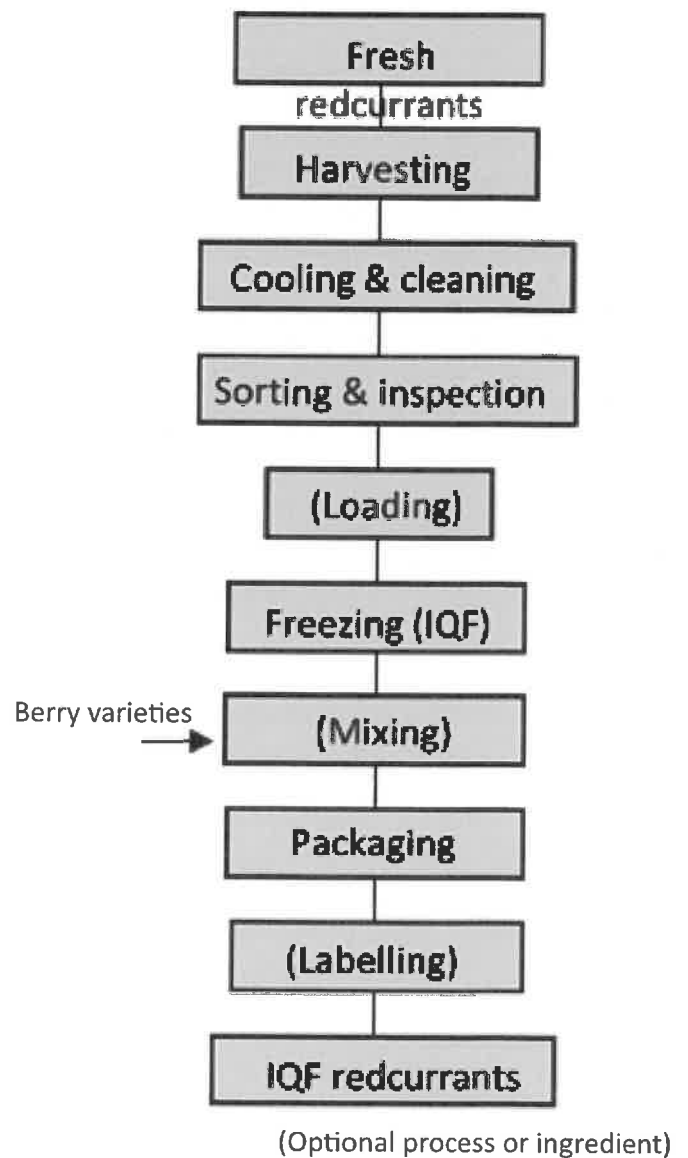
- Gooseberry puree is the crushed and pasteurised liquid prepared from fresh gooseberries. The fruits should be harvested at full size but not over mature. The majority of the fruit should have turned colour while retaining their firmness. The puree can be used in confectionery products, beverages, sauces, flavourings, and fillings as well as fruit juices. Some of the skin, seeds and other components of the original fruit may be separated from the puree, depending on the final use of the product. The puree is preserved by frozen storage.

Redcurrants:

- Redcurrant jam is produced from fresh or frozen redcurrants harvested at the mature ripe stage to ensure maximum flavour, colour, and pectin development. The freezing of the red currants prior to processing eases the workload on the farm during harvesting season. Once the harvesting season has passed, the frozen currants converted into jam at a manageable rate. Processing of fresh red currants is only practical on small scale or where the production team and processing team function separately. Jam is legally required to be:

1. smooth or contain tender pieces of fruit,
2. have a colour and flavour typical of the product concerned and

3. free from defects, insect infestation, foreign or bad tastes or flavours, discoloured particles and peel or skin,
 4. free from any signs of crystallisation, burnt shreds, grit, foreign matter,
 5. free from pips or seeds, except jam made from fruit which is normally consumed with pips or seeds.
- Fresh redcurrants are individually quick-frozen (IQF) to produce a product that maintains its individual identity and gives the perception of “fresh fruit”. This makes it ideal for inclusion into muffins and other bakery products as well as fillings. Frozen redcurrants can also be incorporated into a mixture of other IQF berries/ currants. The IQF method preserves the cell structure, texture, colour, flavour, and aroma of the currants best:



- Redcurrant jelly is produced by the concentration and gelling of unsweetened redcurrant juice or syrup. Jelly consists of either the juice or aqueous extracts of one or more types of fruit that has been clarified by filtration or other means and may contain permitted food additives and sweeteners. Jelly should have:
 1. a colour and flavour typical of the product concerned,
 2. be transparent or clear, free from suspended fruit particles,
 3. and be free from insect infestation, foreign or bad tastes or flavours, any signs of crystallisation, peel or skin, grit, foreign matter, and pips or seeds.

Requirements for different styles of jelly:

1. Jelly should contain at least 35 parts of whole fruit, pieces of fruit; fruit pulp or fruit puree, excluding sweeteners. These quantities are calculated after deduction of the mass of water used in preparing the aqueous extracts, with a soluble solids content of at least 60 %.
2. Extra Fruit Jelly should contain at least 45

parts of whole fruit, pieces of fruit, fruit pulp or fruit puree, excluding sweeteners. These quantities are calculated after deduction of the mass of water used in preparing the aqueous extracts, with a soluble solids content of at least 60 %.

3. Reduced Sugar Jelly should contain at least 35 parts of whole fruit, pieces of fruit, fruit pulp or fruit puree, excluding sweeteners. These quantities are calculated after deduction of the mass of water used in preparing the aqueous extracts, with a soluble solids content of at least 30 % but not more than 55 %.

Redcurrant juice is the crushed and pasteurised liquid derived from fresh or frozen redcurrants which can be used as a beverage or in confectionery products, beverages, sauces, flavourings, and fillings. A wide range of juice and related products can be manufactured, including cloudy and clarified redcurrant juice.

Inquiries: siebertt@arc.agric.za

