



Fact Sheet – Flavour Extraction

What is the product?

Aromatic compounds can be used as natural flavourings by the food processing industry. Products that are commonly processed include herbs, fruit peels and coffee. Aromatic compounds are collected using a new technique known as Spinning Cone Column (SCC) technology. This produces essences, base compounds and concentrates which can then be used to impart flavour and aroma to manufactured drinks, dairy products, soups, sauces, dips and many other items.

What is the benefit to vegetable growers?

Vegetable wastes and whole vegetables with strong flavours and aromas are excellent candidates for this process. These could include:

- ★ Celery
- ★ Parsley and other herbs
- ★ Capsicums
- ★ Chillies
- ★ Shallots
- ★ Leeks
- ★ Onion and garlic

Economic viability

There is currently no information on the economic viability of this technology in Australia. However the method is already being applied in other countries; Sensus, located in California, specialises in vegetable (especially tomato), herb and botanical extracts. The extracts are used in drinks, canned vegetables, dairy-based dips, soups, sauces, cheese, yoghurt and salsa.

Flavourtech, the company that originally developed the technology, is located in Griffith, NSW. The company specialises in providing innovative processing solutions to the Food & Beverage and Pharmaceutical industries.

There is currently strong demand for natural flavours and aromas to replace artificial compounds made in the laboratory. Some of these compounds have been implicated in studies of food allergy and intolerance. They have also been associated with behavioural and developmental problems in some children, although this issue remains unresolved.

There appear to be opportunities, therefore, to explore use of this technology by the vegetable industry.

Materials and equipment required

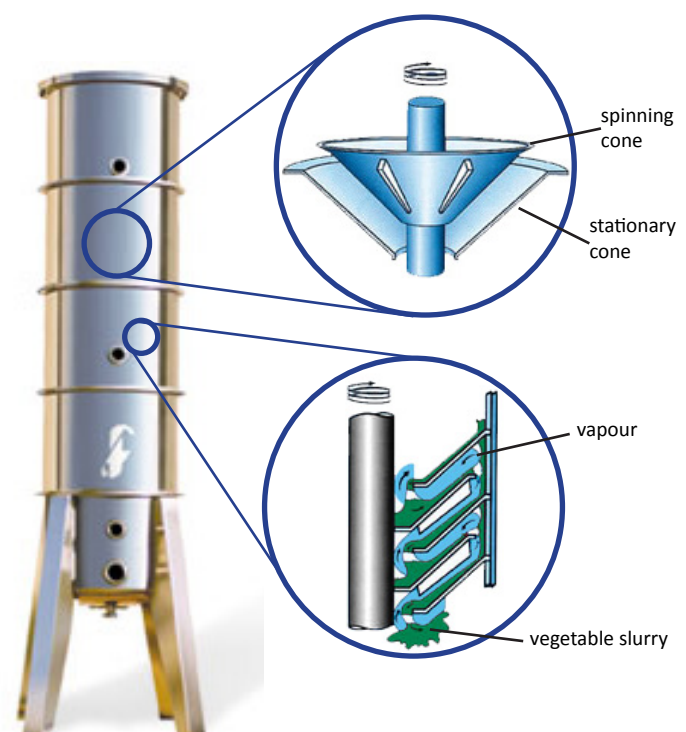
Developed in Australia, the Spinning Cone Column (SCC) is a fast, efficient and cost-effective method for capturing and preserving volatile flavor components from all kinds of liquid or slurry substances, at high speeds and at low temperatures.

The SCC is essentially a vertical stainless steel cylinder in which steam removes a vapor stream of volatile compounds from liquids or slurries.

SCCs range from about 30cm diameter and 2 metres high to a very large cylinder 1m diameter and 5m high.

Internally the SCC contains two series of inverted cones. Attached to the inside wall of the column is a series of fixed cones. Attached to the rotating shaft is another series of cones, parallel to the fixed cones in such a way that they alternate vertically: one fixed, one rotating.

The slurry, added at the top, moves up and down through the series of cones until it eventually exits at the base of the column. As it does so, steam is forced over and through it. This vapour traps volatile compounds as they are released by the rapidly moving slurry. On exiting through the top of the cylinder the vapour passes through condensers, becoming a highly concentrated liquid.



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