

A photograph of three carrots with green tops, resting on a rustic wooden surface. The carrots are of various shapes and sizes, some with multiple roots. The image is framed in a circular shape.

Transformation of surplus/waste tomatoes and capsicums (stage one)

The challenge

One-third of the world's food production amounting to 1.3 billion tonnes is currently lost or wasted annually. Wastage occurs due to a range of factors including disease and damaged, strict quality standards of shape and appearance, packaging and marketing processes, and consumer behaviour. Also influencing levels of waste is a lack of coordination between different players in the supply chain, infrastructure, off-cuts, and over-production.

The valuable resources in food waste, more particularly horticultural waste (fruit and vegetable), can be recovered and made into new products that include processed foods, nutraceuticals, complementary health care and cosmeceuticals. Innovative processing methods/technologies can be applied to produce fruit and vegetable extracts and dried powders containing nutritional and bioactive components. Utilising discarded streams from these crops not only improves industry profitability but also helps to improve food security.

Tomato and capsicum are two major horticultural crops in Australia and more particularly in Queensland. Australia produces about 480,000 tonnes of tomatoes and 76,000 tonnes of capsicums per annum, of which Queensland contributes 50 – 65% of the total production. The Bowen Gumlu Growers Association has a significant contribution to the Australian horticulture industry with about \$190m worth of tomatoes and \$77m worth of capsicums (~42% of national production) produced each year. About 30-40% of the total produce worth ~\$300m is lost or wasted due to various reasons and is currently discarded.

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Our plan

The project aims to value add to more than 40,000 tonnes of tomato and 10,000 tonnes of capsicum waste generated every year in the Bowen & Gumlu region. The Bowen Gumlu Growers Association want to utilise surplus/waste tomato and capsicum produce grown in Australia and more particularly grown in north Queensland. Processing the raw material will create high-value nutrition and bioactive rich powders, and liquid extracts that can find applications in food, health and feed industries.

The Queensland Government's Department of Agriculture and Fisheries is partnering with Bowen Gumlu Growers Association and the Whitsunday Regional Council for this project. Stage one will establish proof of concept protocols that will allow scale-up and commercialisation of technologies in stages two and three. This will occur subject to obtaining desired results in stage one. New and existing processing technologies will be employed to produce high-value human and animal food/nutritional products.

Use of appropriate technologies to process surplus/waste produce into higher-value products can help to reduce the waste in this sector by at least 70%. This will not only mitigate the crop wastage but also saves resources utilised in the production and will reduce carbon footprint.

Project Leader

Dr Ram Mereddy
Queensland Department of Agriculture and Fisheries

Timeline

June 2020 - December 2020

Participants



**Queensland
Government**

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