

From farmer to pharma: adding value to agricultural waste

PRIMARY INDUSTRIES

Waste from Australian agriculture will be turned into high value products such as cosmetics and pharmaceuticals following a partnership between researchers and industry.



Developed over the past year and officially launched today in South Australia, the A\$11 million Research Consortium Program for Agricultural Product Development will be hosted at the [University of Adelaide's Waite Campus](#).

It brings together 18 partners to develop high-value products from agricultural waste, including nine South Australian-based companies from the agriculture and food

sector and a further nine national and international academic institutions and industry partners.

Research Consortium Lead Investigator Professor Vincent Bulone said up to 40 per cent of South Australia's primary production harvest could end up as waste, left to rot in the field or turned into low value products such as compost or animal feed.

"But all of this food waste contains compounds that have high-value potential applications," he said.

"Some can act as prebiotics or anti-oxidants; some have anti-inflammatory or anti-microbial properties; others, in particular carbohydrates, provide mechanical strength and texturising properties in food, lubricants, cosmetics and structural materials.

"We plan to increase the value of agricultural waste and create new post-farmgate industries worth over \$100 million a year to South Australia."

Projects underway include:

- Isolating and identifying anthocyanins from apples and berries for use in skincare formulations and other health-promoting products;
- Testing cellulose molecules from waste Brussels sprout stalks and other biomass as replacements for glass fibres in filtration systems and plastic materials, and;
- Extracting vitamin D, beta-glucans and chitosan from mushroom waste for use in nutraceuticals and sunscreen materials.

Research partners in the project include the University of Adelaide, University of South Australia, CSIRO and Sweden's Royal Institute of Technology where Professor Bulone is a former director of the KTH Advanced Carbohydrate Materials Consortium.

The consortium has been supported with a \$4 million South Australian Government grant through the Research Consortia Program.

"Our research will cover the entire value chain from our local growers to manufacturers of food products and beverages, skincare products, and green materials," said Professor Bulone.

"The focus on applied product development and its web of local, national and international partners will create spin-off companies and jobs to commercialise new, high-value products from existing waste streams."

The other consortium partners are: Filsell's Orchards Pty Ltd, Raw Nation Wholefoods Pty Ltd, AE Cranwell & Sons, Ashton Valley Fresh, JVJ Co Pty Ltd, Vanquish Technologies, SA Mushrooms, Coopers Brewery Ltd, Potatoes South Australia Inc, CarbOzide Pty Ltd, Agilent Technologies Australia Pty Ltd, Plant & Food Research, Ingredion Inc (USA), Carlsberg Group A/S (Denmark).

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