

# High Nutrition Ingredients from Agricultural Food Waste



Industry Connection Hub Lunch Break Series -  
October



Rod Lewis  
Dr Malcolm Ball  
**Extracta Pty Ltd**

Dr Kameron Dunn  
**Queensland University of Technology**

# Fight Food Waste Cooperative Research Centre

## Project Agreement

### **Markets for product sale:**

There is a global market for high value food and dietary supplement products with scientifically proven health benefits for the management of metabolic diseases such as diabetes and chronic pain.

### **Quality Raw Material Supply:**

At the same time our food industry routinely discards the nutrient rich component of foods during processing.



## What problems do we solve

Over 25 per cent  
of all the food  
Australia produces  
goes to waste\*

Australia has  
few manufacturers  
for the Food as  
Medicine market

Importing costs  
for ingredients  
are high with  
extended delays

Pectin has not  
been  
manufactured  
in Australia for  
many years

Now  
manufacturers are  
demanding  
'Australian Made'

\* Fight Food Waste CRC | Fight Food Waste Cooperative Research Centre





## Why we started Extracta

- 1. Observed large quantities of waste fruit and veg in the Bundaberg region – up to 60 % discarded**
  - 2. Industry repeatedly throws away the ‘good stuff’ and sells the highly processed ‘bad stuff’**
  - 3. Realised that the Australian pectin industry has disappeared – outsourced to China mostly**
  - 4. Had major problems sourcing Australian ingredients with high nutrient levels and medical efficacy**
    - (We separately operate a ‘Food as Medicine’ business that requires high quality ingredients)**
- 
- Have first rate technical and scientific expertise within our group**
  - Had built many factories with varying technologies**
  - Have direct experience operating both factories, sourcing programs and logistics facilities**
  - Have excellent relationships with several Australian Universities**





## What we will do

- **Acquire**
  - **Blemished or unused produce**
  - **Processing waste is currently being discarded (eg fruit pulp / grape marc / sugarcane husk)**
- **Reclaim**
  - **Active nutrients from these crops and food processing waste**
  - **Minimise crop waste and disposal costs**
  - **Improve the sustainability of the agricultural sector**
  - **Convert by-products into value-added ingredients**
- **Sell directly**
  - **To the nutraceutical, food and cosmetic industries**
- **What we leave behind**
  - **Nothing**



## Inputs

*“We don’t use waste – we use fresh agricultural side streams – that are currently being wasted”*

### **Initially**

- **Grape marc (skins and seeds left over after the ‘crush’)**
- **Orange / citrus peels**
- **Apple pomace (fibre left over after apple processing)**
- **Bagasse (fibre content left after sugarcane crushing)**

### **Future**

- **Watermelon**
- **Apricot kernels**
- **Peach kernels**
- **???? – the list is endless . . . . .**



## Outputs



*Sugarcane Fibre*  
Contract to supply MediKane



*Pectin*  
Used in food and pharma.  
Obtained from waste products including:

- Apple Pomace and Citrus Peel - waste products of the juicing industry
- Grape skins - waste products of the wine industry



*Grape Seed Oil*  
Used as a natural skin health product and for food preparation. Made from Grape Marc - skins, seeds and stems left over from wine making.



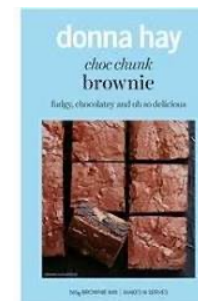
*Red & White Grape Marc Flour*

- Used in the baking industry
- Source of dietary fibre, iron, potassium, calcium and magnesium
- Powerful antioxidant (polyphenols) especially resveratrol

## Ready to use quality consumer products from other peoples leftovers

### Wineries, artisan local grocers

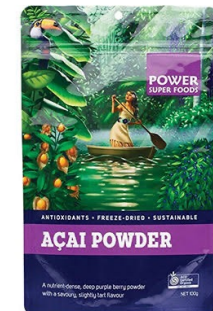
- **100% SUSTAINABLE ARTISAN Red and White Varietals Grape Flours 150g – RRP \$18**
- **ARTISAN Focaccia, Pizza and Dough Mix 500g – \$15**
- **Red Velvet Cup Cake Mix – RRP \$12**
- **Cabernet Brownie Mix – RRP \$12**





## Ready to use quality consumer products from other peoples leftovers

- Pure Grape Powder 100g - \$25
- ORGANIC Grape Powder 100g - \$35, 200G \$60
- Grape & Berry Blend 200g - RRP \$45
- Food As Medicine Smoothie Range for Gut, Immunity, Inflammation, Collagen etc - RRP \$45
- Grape Hydration Powder 12 sachets - RRP \$24



## Ready to use quality consumer products from other peoples leftovers

- **Grape Toothpaste 100ml – RRP \$6 \ 75 tabs RRP \$14**
- **Mouth Wash travel 20 sachets – RRP \$22**
- **Oral Rinse 250ml – RRP \$13**
- **Grape Ice cream / sorbet 1 litre – RRP \$12**



## Value Proposition

### **For suppliers of raw materials:**

- Provides a service to utilise discarded fruits and vegetables
- Utilise their process waste streams
- Reducing or eliminating the cost of disposal

### **For Extracta customers:**

- Provides source of Australian made high-quality sustainable ingredients
- Eliminates importing costs, delays and risks

### **For the community:**

- Re-establishing a lost manufacturing industry
- Increasing exports of Australian products
- Improving sustainability in Australian manufacturing

### **For shareholders:**

- Involvement in a sustainable business well supported by government
- Low risk business with excellent returns
- IPO opportunity



## Achievements to date

- **Raised funds of over \$560,000**
  - Commitments for further \$225,000
- **Secured two Australian government grants:**
  - Fight Food Waste Cooperative Research Centre – \$1.15 Million
  - Industrial Transformation Training Centre grant – \$1 million
- **Partnerships with:**
  - Queensland University of Technology (QUT)
  - Macquarie University
- **Commercial trading relationships established with:**
  - Supply contract with the MediKane
    - Long-term supply of four ingredients – first customer
  - Husk Distillery – supply of raw materials
  - Tamburlaine Organic Winery
    - Production facility in Orange
    - Supply of raw materials
  - Coastal Feeds Tweed Heads – Materials handling and logistics
  - Australian Life Sciences – Blend, Fill & Pack wholesale/retail products
- **Operating Sites:**
  - Pilot plant site located at QUT
  - Equipment is being purchased and installed
  - Coastal Feeds – Materials handling / production site
- **Sales & Marketing**
  - Appointed full-service marketing organisation – ICON Visual
  - Appointed experienced sales agent
  - Appointed international B2B distributor – T3 International
- **Purchase commitments**
  - Obtained from Australian pectin and tartaric acid users
- **Paths to market, customers identified**
  - Confirmed for 75% of year 1 and 2 sales



extracta

# Fight Food Waste – CRC program



# Fight Food Waste Cooperative Research Centre

## Project Agreement

---

**Project Title:** High Nutrition Ingredients from Agricultural Food Waste

**Project Code:** Project 2.2.5

**Project Leader:** Kameron Dunn, Queensland University of Technology

---



## Intent and Objective of the CRC program

### **Intent**

Foster high quality research to solve industry problems through industry-led and outcome-focused collaborative research partnerships between industry and researchers.

### **Objective**

The objective of the CRC Program is to improve the competitiveness, productivity and sustainability of Australian industries, especially where Australia has a competitive strength, and in line with government priorities.



## **FFW CRC Project Objectives**

- 1) Produce high nutrition ingredients that have been identified by the commercial partner as desirable for their next generation products (produced from grape marc and apple waste);
- 2) Ensure that the food waste input is utilised completely with no residual food waste;
- 3) Design a modular process that can be expanded to other input streams and produce other high nutrition products such as pectin. It is expected the project will eliminate 100,000 tonnes of waste annually.





## QUT Partnership and Role



- **Manage the research project so that it achieves its objectives**
- **Submit regular reports on project progress and achievements**
- **Evaluate and assess suitable equipment for testing**
- **Select, install and commission pilot plant equipment for testing**
- **Oversee the required R&D as we upscale and try new processes**



extracta

**Status / Go live**



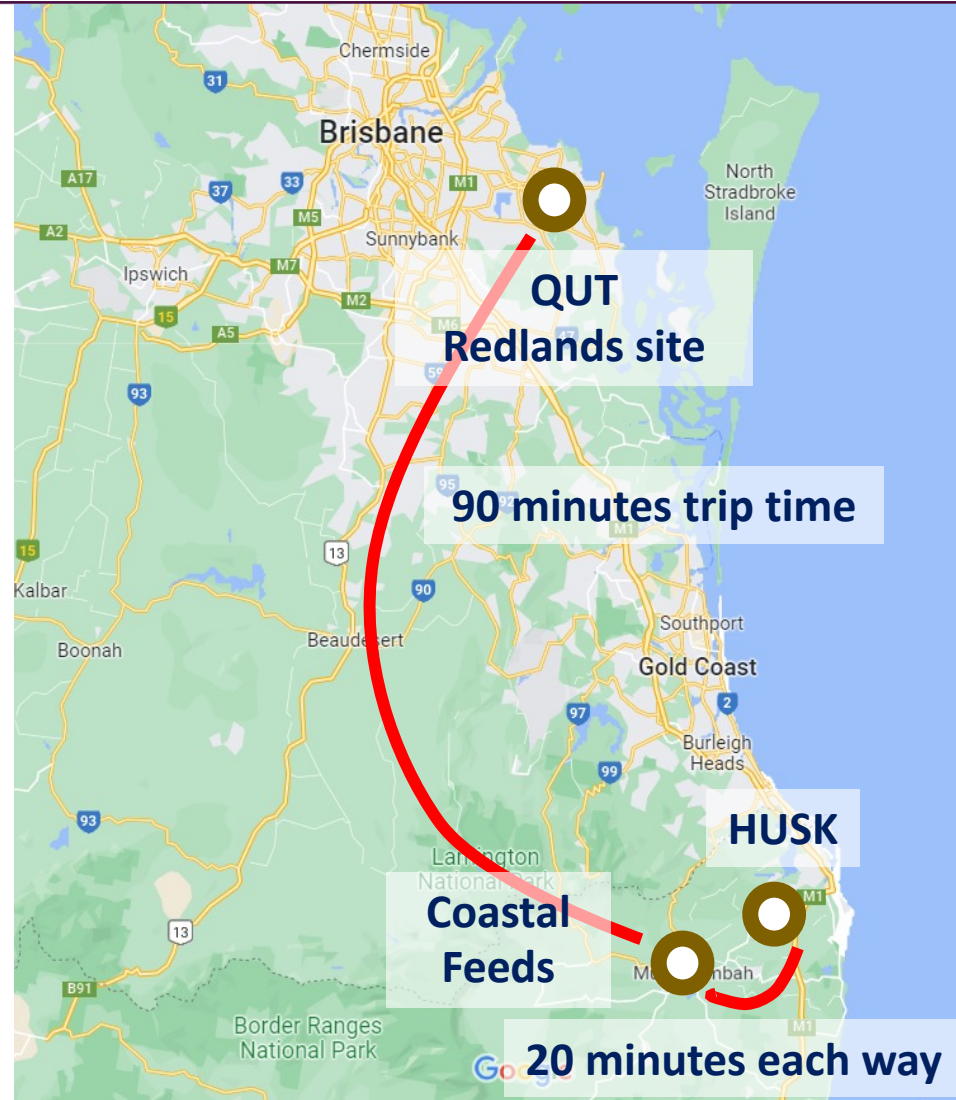
## Partners

- **Fight Food Waste CRC – Grant funding**
- **Queensland University of Technology (QUT) – R&D pilot plant**
- **Tamburlaine Organic Winery – manufacturing site/ supplier**
- **Macquarie University – Phase II higher margin products**
- **Coastal Feeds – Tweed Heads**



## Sites / supply / logistics / retail packing

- **First Site – Commissioning – QUT Redlands**
- **Supply of sugarcane bagasse – HUSK Distillers**
- **Logistics – Coastal Feeds Tumbulgum NSW**
- **Commercial site – Coastal Feeds**
- **Second processing – Tamburlaine Cudal NSW**
- **Supply of grape marc – Tamburlaine**
- **Supply of orange peel**
  - Coastal Feeds
  - Via Tamburlaine
- **Supply of apple pomace**
  - Cudal area
- **Blend / Fill and Packing – Australian Life Science**
  - Caringbah – NSW



## Supply of first ingredient: Husk Distillery



## Coastal Feeds Interstage storage

- **Site available September 2022**
- **Operation:**
  - **Pick up bagasse at Husk Distillers**
  - **Cross dock at their local site**
  - **Ship to QUT Redlands**
  - **Post processing – ship to Extracta warehouse**



# Processing – QUT Redlands



## Processing – Blend, Pack & Fill: Australian Life Sciences Pty Ltd

- Established ongoing commercial relationship
- Have full TGA licence and Food licence
- Can pack a range of retail and bulk packs
- Powder, liquid, capsules, gels

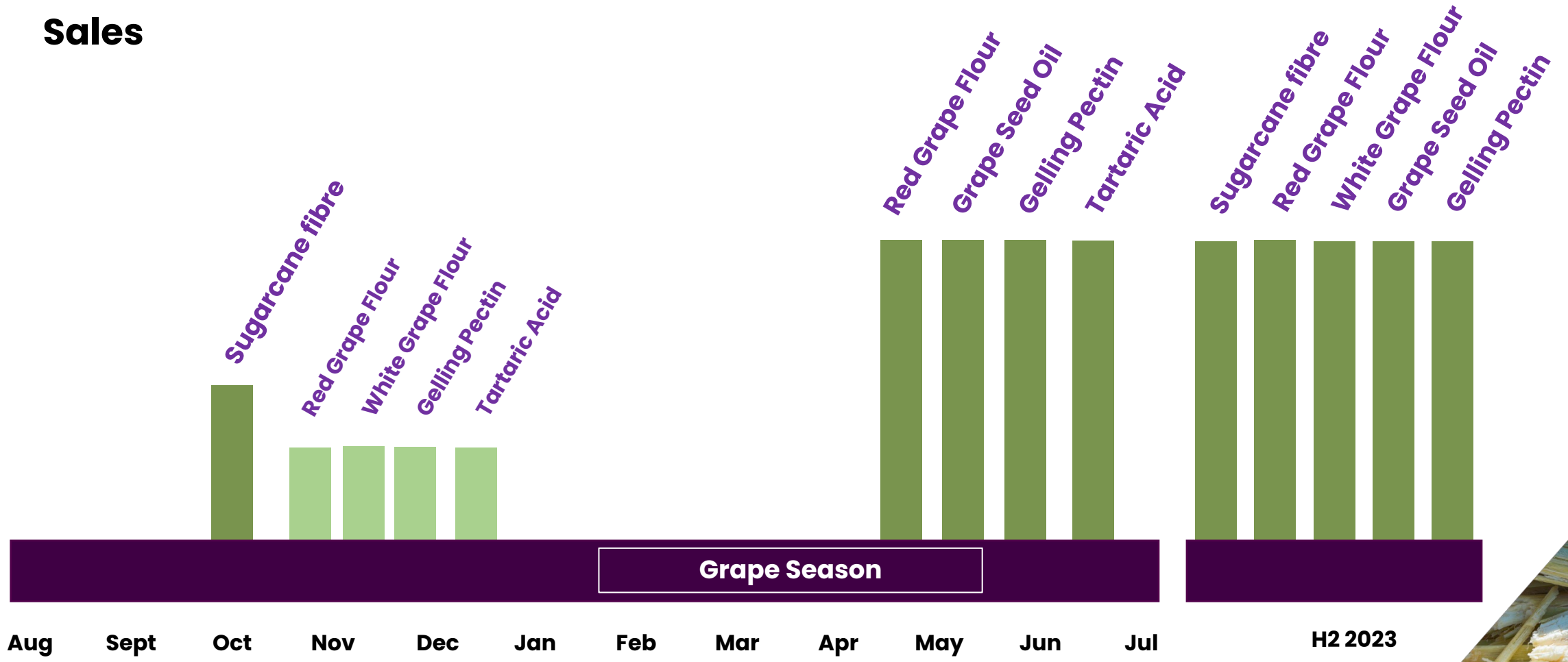
## Warehousing – WDS Riverwood, NSW

- Receive and store bulk products
- Receive wholesale and retail packs
- Assemble customer orders
- Despatch
  - Nationally
  - Internationally





# Sales





extracta

**Recovers nutrients from food and agricultural side streams at low cost:**

**Produces high value ingredients for food, nutraceutical and cosmetic industries,  
for sale to global markets.**

**For more information please contact:**

**Rod Lewis - CEO**  
[rlewis@extracta.com.au](mailto:rlewis@extracta.com.au)

**+61 401 719 833**

**Dr Malcolm Ball - CSO**  
[mball@extracta.com.au](mailto:mball@extracta.com.au)

**+61 425 284 864**

