

PROCESSING AND COMMERCIALISING in the primary industries

Ministry for Primary Industries
Manatū Ahu Matua



The primary industries bring billions of dollars to our economy each year and employ one-sixth of New Zealand's workforce. Many of these people add value to food and fibre products, or work with customers to understand market trends and support product development.

What kind of work is it?

Processing in the primary industries involves turning raw materials into finished products before packaging and marketing them. Commercialising is about creating innovative new products or improving existing ones, for example, fruit drinks, frozen fish meals, wool fibre, paper packaging and biofuel.

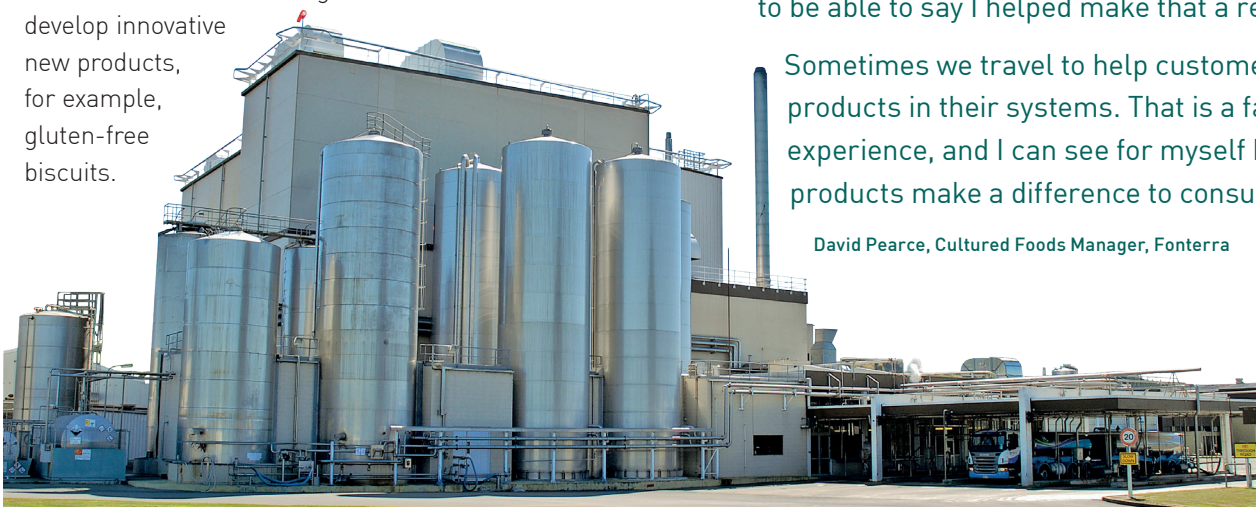
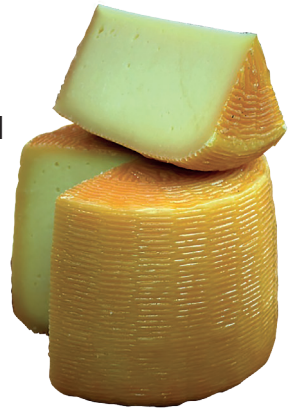
Scientists research how to add value to the materials we grow. They might create a wood-based plastic, develop milk with a higher level of protein, or develop a new type of fertiliser. Food technologists develop innovative new products, for example, gluten-free biscuits.

Engineers are involved too. A chemical and process engineer might create the systems that take milk through different parts of a factory while it's made into yoghurt. A mechanical engineer could develop the machinery needed to turn wood pulp into paper packaging.

"There is nothing more rewarding than seeing a process I have helped develop making a product that I can see being packed for sale. It is hugely satisfying to be able to say I helped make that a reality.

Sometimes we travel to help customers use our products in their systems. That is a fantastic experience, and I can see for myself how our products make a difference to consumers' lives."

David Pearce, Cultured Foods Manager, Fonterra



FOOD TECHNOLOGIST
Arielle Hiscox Fonterra

WORK Arielle supports a team making highly valuable lactose for use in medications, and identifies ways in which the factory can perform better
PATH Palmerston North Girls' High School, final year: Biology, Chemistry, Economics, Physics Statistics
Massey University (Palmerston North): Degrees in Chemistry and International Business; Master's degree in Dairy Science & Technology



LABORATORY TECHNICIAN
Rachel Melrose
Poultry Vet Services

WORK Rachel tests poultry and poultry products for the presence of microbes such as salmonella
PATH Marian College (Christchurch), final year: Biology, Chemistry, Maths
University of Canterbury: Degrees in Biology and Japanese
Ara Institute of Canterbury: Postgraduate diploma in Lab Technology



INNOVATION MANAGER
Matt Mays
Sealord

WORK Matt manages a team of food technologists to develop innovative new fish products
PATH Pakuranga College, final year: Biology, Calculus, Chemistry, Physics, Statistics
Massey University (Palmerston North): Degree in Food Technology



SCIENTIST
Jamie Bridson
Scion

WORK Jamie uses biological materials from the forestry industry to create new products such as biodegradable plastics
PATH Rodney College, final year: Biology, Calculus, Chemistry, Geography, Physics
University of Waikato: Degree in Chemistry and Biology; Master's degree in Chemistry



MECHANICAL ENGINEER

Rafat Khan
Waratah

WORK Rafat designs new or improved equipment for logging and harvesting timber

PATH Avondale College, final year: Calculus, Chemistry, Music, Physics, Statistics; AUT: Degree in Mechanical Engineering
University of Auckland: Master's degree in Engineering Management



PROCESS ENGINEER

Chris Horan
Oji Fibre Solutions

WORK Chris solves problems with boilers, kilns and other processes used in developing paper products, and works out ways to improve how the mill operates

PATH Pukekohe High School, final year: Calculus, Chemistry, English, PE, Physics
University of Canterbury: Degree in Chemical & Process Engineering



SENIOR ANALYST

Anna Van Vuuren Ravensdown

WORK Anna works in a quality and environmental lab, ensuring fertilisers have the correct chemical components and monitoring their effects on the environment

PATH Christchurch Girls' High School, final year: Biology, Calculus, Classics, Economics, Physics; University of Canterbury: Degrees in Biology and Management Science; SIT: Certificate in Environmental Management (in progress)



PROCESS TECHNOLOGIST

Brooke Clark
Fonterra

WORK Brooke works in a dairy plant which makes milk powder and whey powder, helping solve problems and improve the way the plant runs

PATH Pukekohe High School, final year: Biology, Calculus, Chemistry, Physics, Statistics
University of Auckland: Degree in Chemical & Materials Engineering

Is there a future in it?

Yes! People will always need food, textiles and timber products. This sector is growing and looks set to be even bigger in the future as the world's population increases. We need to focus on increasing the value of our products as an increasing number of people overseas look to New Zealand for safe, high quality food and materials.

For New Zealand companies to stay competitive in the global market, we need creative, innovative people with technology, engineering or science skills. There are many opportunities for people with the right expertise – whether you're working for a large company or starting your own business.



university. Starting salaries, for people with a technology, engineering or science-related

diploma or degree usually range from \$40-\$60,000, depending on qualification level and experience. Find out what and where you can study, using the online Course Finder at www.futureintech.org.nz/search.cfm.

“Science and technology are playing an ever increasing role in food, as we seek to provide more sustainable options and grow the value of our exports in global markets. There are many opportunities: from assessing and monitoring fish stocks, to developing new fishing technologies, to the science of food formulation.”

Steve Yung, CEO, Sealord

Find out more....

Read stories about people working in the Processing and Commercialising sector of the primary industries – and learn how they got there – at www.futureintech.org.nz

What qualifications will I need?

Depending on the role, you may need a certificate, diploma or degree from a polytechnic or



Vocational Pathways



Primary Industries



Manufacturing & Technology

New Zealand Government



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