



Agribusiness at the College



Agricultural and Business Careers beyond the Farm Gate

Dr. Craig Preston, Director of Agribusiness, Mr. Brent Wolf



What is Agribusiness?

- Agricultural and Environmental Science focuses on activities and careers up **to** the farm gate, while Agribusiness focuses on activities and careers **beyond** the farm gate'.



Accreditation?

- NZQA-approved Level 2 and 3 subject with full university entrance (UE) and endorsable at Merit and Excellence

Rationale for the course?

- Primary Industries is how NZ earns a living
- Skill shortages (50 000 more needed by 2025)
- Government targets and graduate requirements for sector
- Agricultural and Horticultural Science numbers at senior secondary school are in decline (450 Level 3 **vs** 14000 Level 3 English/Biology etc)
- The brightest and the best are needed **now** – St Paul's and Beef & Lamb and DairyNZ started collaborating – pathways other than medicine/law/commerce for top students made known
- Public perception is poor. In other words we need to stop the assumption in young people that work in the Agri sector is long hours, poorly paid, unreasonably hard work, antisocial and boring, and for 'cabbage kids'

Delivery in the Centre of Excellence

The 2-year programme presents material focused on *four* learning strands:

- ***Agri-innovation***, the study of innovative (bio) technologies and farm management practices (innovation project) – **Dr Preston**
- ***Agri-science***, the study of scientific principles related to agriculture and horticulture and the acquisition of practical scientific skills – **Dr Preston**
- ***Agri-management and finance***, the study of buying and selling within the primary sector, and the running of successful Agri-businesses, cash flow etc – **Mr Wolf**
- ***Agri-marketing***, the study of successfully and appropriately marketing New Zealand primary products – **Dr Preston** and **Mr Wolf**

*Business/economics part is contextualized within the Agribusiness sector (actual businesses)

Year 12 Programme


Standards	Description	E/I	Credits
Future Proofing AS 2.1	Demonstrate understanding of future proofing to ensure business viability (Any business on the Central Otago Tour)	Internal	4
Science AS 2.2	Conduct an inquiry into the manipulation of organisms to meet future needs	Internal	4
Business AS 2.3	Organisational Structure of an Agribusiness	Internal	4
Cash Flow AS 2.4	Demonstrate understanding of cash flow forecasting for a business	Internal	4
Business Studies 2.2	Demonstrate understanding of how a large business responds to external factors	External	4

Year 13 Programme

	Standards	Description	Credits	E/I
	Future proofing AgriB 3.1	3.1 Analyze future proofing strategies to ensure long term viability of a business (Any business on the Nelson/Marlborough Tour)	4	Internal
	Capital expenditure AgriB 3.2	3.2 Analyze the effect of a strategic capital expenditure decision on a business	4	Internal
	Innovation AgriB 3.3	3.3 Analyze how a product meets market needs through innovation in the value chain	4	Internal
	Business Studies BS 3.2	Demonstrate understanding of strategic response to external factors by a business that operates in a global context	4	External
	Business Studies BS 3.4	Develop a marketing plan for a new or existing product BILTONG : produced, branded, packaged and sold)	6	Internal



Why choose Agribusiness?

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- Agribusiness is a two-year course with an identified *study* and *career* pathway (industry exposure through mentoring and university degrees)
 - Agribusiness aims to offer innovative, creative and hands-on teaching and activities to complement the assessment standard material (field trips and creative activities like beer, cheese, biltong making and dried fruit processing)





Beer/Biltong Making



Biltong and Cheese Making



Genetics

GENE
GTTAGTC GA

↓

GENE
GATAGTC GA

Changing the gene sequence. Taking the gene that codes for a decreased methane production and putting in other cows, so their offspring also produce less methane - Metabolism + genetics

B12

RED SEAWEED

ENZYMES

Feed - Seaweed

The cows eat the red seaweed. This can decrease methane production by up to 90%. The seaweed reacts with 74% B12, the gut meaning reduction in methane from

METHANOGEN

ENZYME

SUBSTRATE

WASTE PRODUCT

The inhibitors prevent archaea from producing as much methane because the enzymes react. As a co-triggers, inhibitors slow down the life processes of the archaea. Enzymes of the archaea.

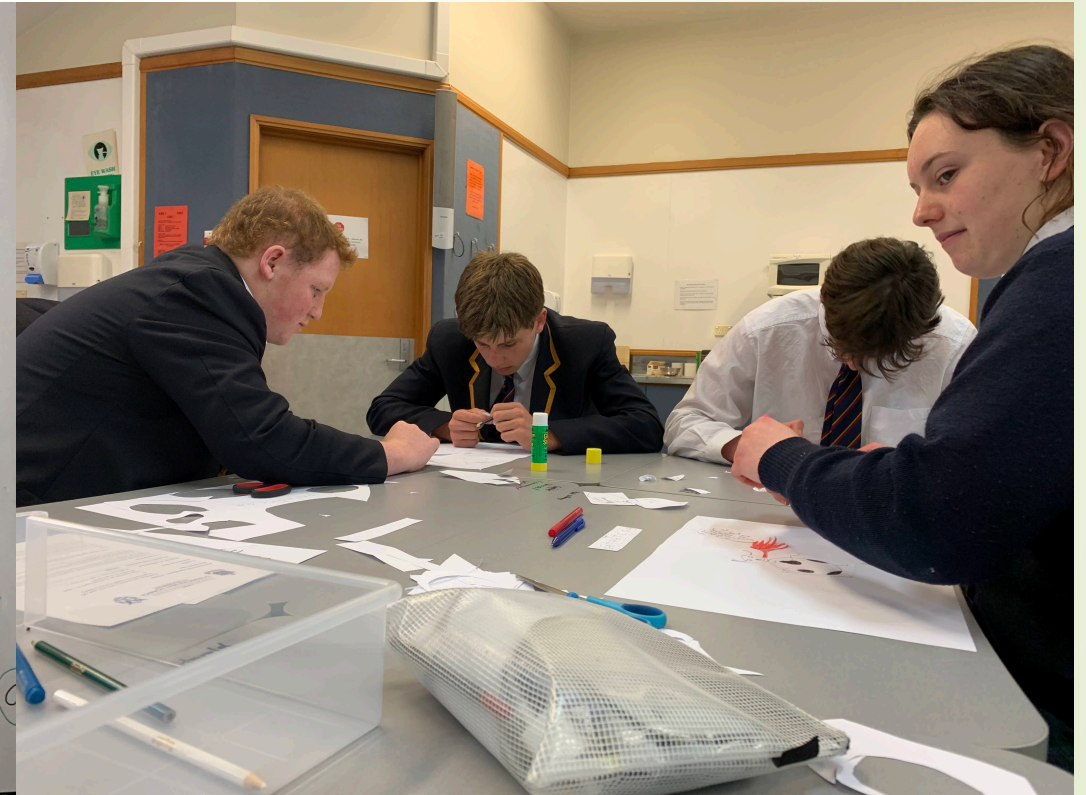
METHANOCYTOXIN

ANTIBODIES

METHANOGEN

Research developed by researching on cow saliva

* Antibodies target the archaea and lessen the production of a methane or kill the archaea completely - becomes food to surface proteins of the methanogen.





2Ha for Regenerative Farming





Why choose Agribusiness?

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- Agribusiness offers students the opportunity to engage in innovative thinking and projects (term 3 of Year 1 and innovation challenge – this year a recycling and composting project for JMC)

Class of 2020



Class of 2021



Class of 2021



Class of 2019



Class of 2019





The CENTRE *of* EXCELLENCE SCHOOL

FOR AGRICULTURAL SCIENCE
AND BUSINESS®



Partners

- **Otago University** – two **scholarships** and two course options
- **Other partners:** *Silver Fern Farms, Mt Difficulty, Dung Beetle Innovations, Linnburn Station, Wynyard Saffron Estate, Cardrona Distillery, Darling's Apple Orchard, Wright's Honey*

Additional Costs

- **Year 12:** Textbook (\$30), Field Trips X 2 (\$60), Central Otago Tour (3 days - \$250-00) = +- **\$350-00**
- **Year 13:** Workbook (\$25), Field Trips X2 (\$60), Nelson/Marlborough Tour (4 days - \$450 – \$600) = +- **\$750-00**

ANY
QUESTIONS
?

'Innovate or Perish'

