

NATIONAL AG WEEK 2023

DIGITAL LEARNING KIT

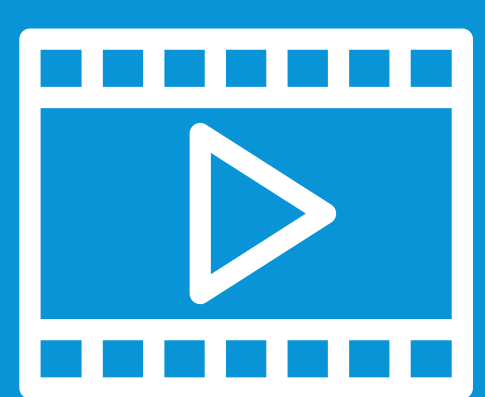
GROW YOU GOOD **THING** #AGDAYAU

Celebrate **STEM** and **Innovation** in
Food & Fibre Production

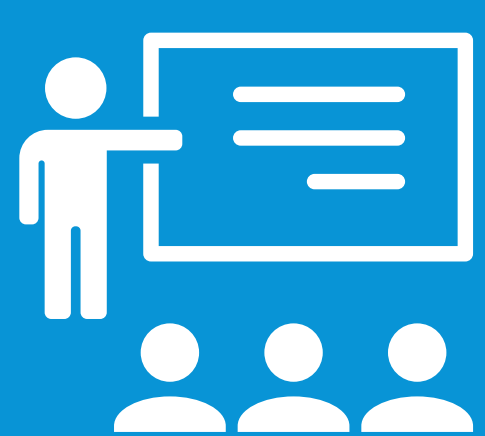
V9 Australian Curriculum Aligned



FEATURING:



**PRIMARY AND SECONDARY PRE-RECORDED FARMER
TIME VIDEOS**



**ACCESS TO TEACHING RESOURCES FOCUSED ON
TECHNOLOGY AND INNOVATION IN FOOD & FIBRE
PRODUCTION**



INTRODUCTION

THIS DIGITAL RESOURCE KIT IS DESIGNED FOR PRIMARY AND SECONDARY EDUCATORS.

Within the resource, teachers can access a series of short Australian Curriculum-aligned videos and accompanying student worksheets celebrating STEM and innovation in food and fibre production.

Five curriculum-aligned questions have been answered by inspiring stakeholders working in different industries within the Australian agricultural sector.

Access the videos to hear about the technologies and innovations helping them sustainably produce Australia's food and fibre. As students view the video resources, they can record their answers to PIEFA's Fast Five questions on the provided worksheets.

Facilitation of each of the activities within this resource will take approximately 30 minutes. Primary Industries Education Foundation Australia thanks our member organisations for collaborating on these resources.

For more food and fibre learning resources, visit www.primezone.edu.au





PIEFA'S FAST 5

Five curriculum-aligned questions have been asked to stakeholders working in the Australian agricultural sector. Learn about the technologies and innovations that are helping people sustainably produce Australia's food and fibre.

Access links and resources throughout this document to deliver a National Ag Week lesson.

PRIMARY QUESTIONS

1. What is the technology/innovation that you have introduced? *(How does it work? What is it used for?)*
2. How were tasks performed before this technology/innovation was available?
3. How does the technology/innovation meet the needs of people, improve sustainability or make a task easier when it is used?
4. What are some of the challenges of using this technology/innovation, and how could these be improved in the future?
5. What will the future of primary industries (food and fibre) be like?

SECONDARY QUESTIONS

1. Describe the technology/innovation and its use in the food and fibre industry.
2. Compare how an operation was performed in the past (before the technology/ innovation) with the present and explain why using this technology/innovation is preferable.
3. Describe how the technology/innovation targets at least one aspect of sustainable production (economic, social or environmental) and identify its potential implications and impacts.
4. Identify the training or experience required to operate/use this technology/innovation *(Identify the career pathway)*.
5. Why should students explore a career in primary industries?



AUSTRALIAN CURRICULUM CONTENT

PRIMARY

Foundation

- Explore how familiar products, services and environments are designed by people (ACgTDEFK01)
- Explore the ways people make and use observations and questions to learn about the natural world (ACgSFH01)

Year 1- 2

- Identify how familiar products, services and environments are designed and produced by people to meet personal or local community needs and sustainability (ACgTDE2K01)
- Explore how plants and animals are grown for food, clothing and shelter (ACgTDE2K03)
- Describe how people use science in their daily lives, including using patterns to make scientific predictions (ACgS1H01)
- Describe how people use science in their daily lives, including using patterns to make scientific predictions (ACgS2H01)

Year 3- 4

- Examine design and technologies occupations and factors, including sustainability, that impact on the design of products, services and environments to meet community needs (ACgTDE4K01)
- Describe the ways of producing food and fibre (ACgTDE4K03)
- Consider how people use scientific explanations to meet a need or solve a problem (ACgS3H02)
- Consider how people use scientific explanations to meet a need or solve a problem (ACgS4H02)

Year 5- 6

- Explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environments (ACgTDE6K01)
- Explain how and why food and fibre are produced in managed environments (ACgTDE6K03)
- Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions (ACgS5H02)
- Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions (ACgS6H02)



AUSTRALIAN CURRICULUM CONTENT

SECONDARY

Year 7-8

- Analyse how food and fibre are produced in managed environments and how these can become sustainable (ACgTDE8K04)
- Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures (ACgTDE8K02)
- Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments (ACgTDE8K01)
- Examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations (ACgS7H03)
- Examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations (ACgS8H03)

Year 9-10

- Analyse how people in design and technologies occupations consider ethical, security and sustainability factors to innovate and improve products, services and environments (ACgTDE10K01)
- Analyse the impact of innovation, enterprise and emerging technologies on designed solutions for global preferred futures (ACgTDE10K02)
- Analyse and make judgements on the ethical, secure and sustainable production and marketing of food and fibre enterprises (ACgTDE10K04)
- Investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering (ACgS9H02)
- Examine how the values and needs of society influence the focus of scientific research (ACgS9H04)
- Investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering (ACgS10H02)
- Examine how the values and needs of society influence the focus of scientific research (ACgS10H04)

Stuart Griffin

DAIRY PRODUCER

GRIFFINTINE DAIRY

WESTBURY, WEST GIPPSLAND

DISCOVER AUSSIE DAIRY

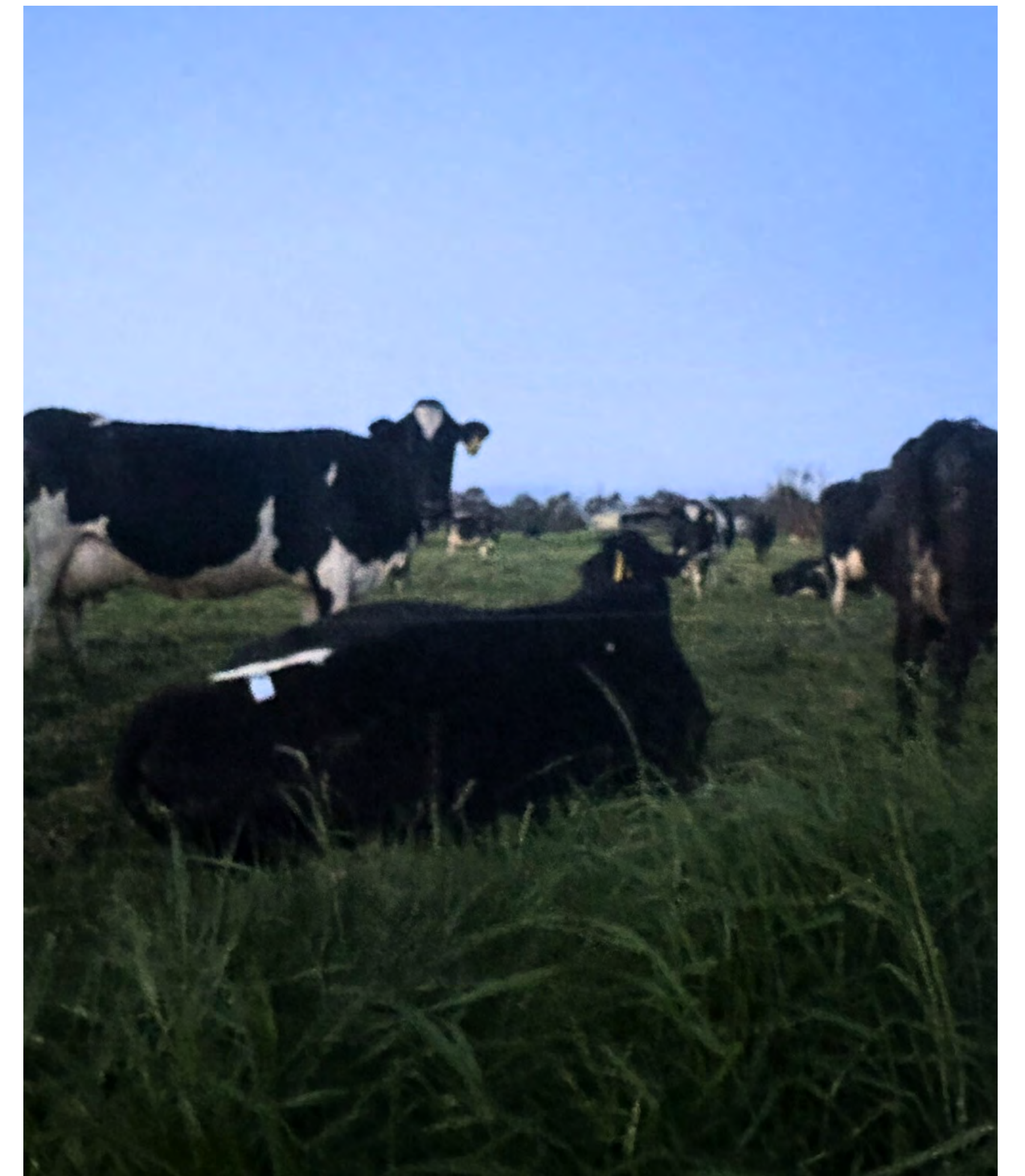
RESOURCE SUMMARY

Learn about emerging virtual fencing technology and its potential to improve precise and controlled grazing with the aim of growing more pasture and producing more milk on dairy farms.

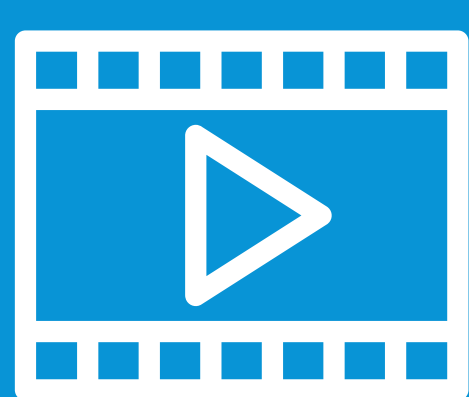
Hear about how virtual fencing remotely maps and controls livestock grazing behaviour without the use of traditional fixed fences and infrastructure. GPS sensors and wireless technologies control the movement and exact location of stock in real time.

Parcels of land can be grazed at varying rates based on environmental conditions and cattle can be excluded from sensitive areas of the farm at different times of the year to protect the farm landscape from issues such as erosion and run-off. This technology's benefits include reducing fenceline maintenance and labour costs on farms, leading to more efficient grazing and environmental management.

The future of agriculture will involve more technology, automation, and robotics. Farms have become highly skilled, technical, and complex businesses managing various components to meet the needs of a growing population. You name any job, and Stuart could tell you how it applies to agriculture.

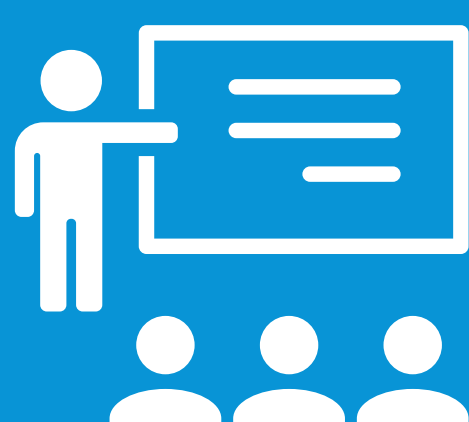


**ACCESS THE RESOURCES BY CLICKING
ON THE LINKS BELOW.**



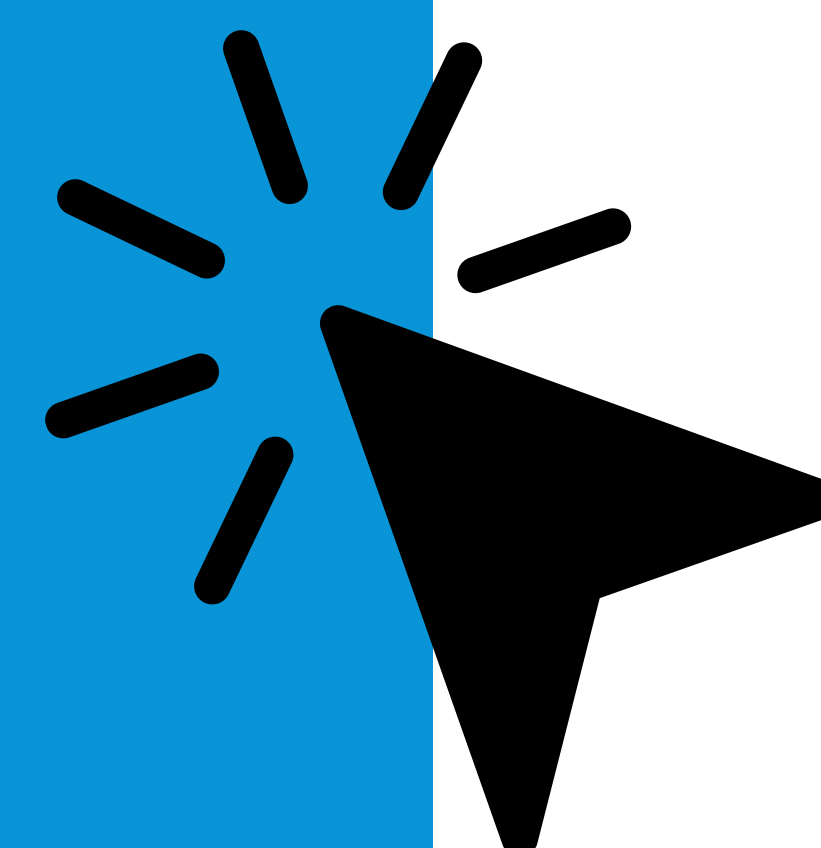
[PRIMARY VIDEO](#)

[SECONDARY VIDEO](#)



[PRIMARY WORKSHEET](#)

[SECONDARY WORKSHEET](#)



Dr Dinesh Venkatachalam

**FOUNDER AND DIRECTOR
ETA PURIFICATION**

DISCOVER AUSSIE DAIRY

RESOURCE SUMMARY

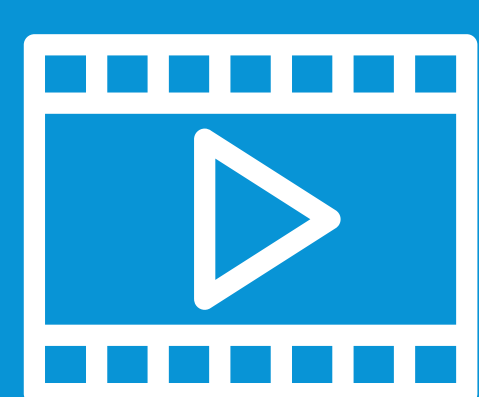
Learn about Dr Dinesh Venkatachalam's role in designing innovative solutions for global preferred futures in the dairy industry.

Through the implementation of water purification and organic seaweed feed supplements, Dr Venkatachalam is working to improve the economic, environmental, and social sustainability of dairy production systems. The introduction of the seaweed supplement into the diet of the cows on a dairy farm helps them convert fodder into vital nutrients, reducing methane emissions while improving milk yield and farm profitability.

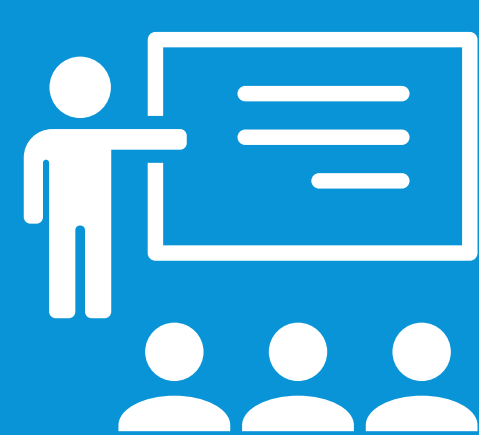
Hear about the process of harvesting seaweed for use in cattle feed supplements and the exciting impacts and implications this innovation has on dairy farms worldwide.



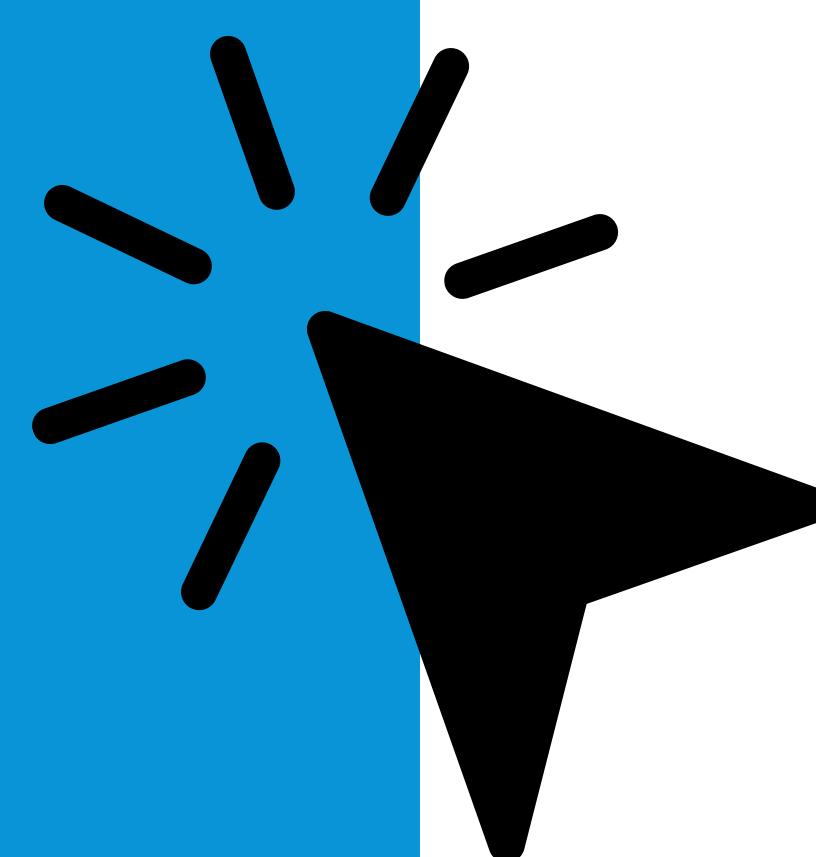
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[SECONDARY VIDEO](#)



[SECONDARY WORKSHEET](#)



ATTRIBUTION, CREDIT & SHARING



This resource was produced by Primary Industries Education Foundation Australia (PIEFA) in collaboration with our member organisations. Primary Industries Education Foundation Australia's resources support and facilitate effective teaching and learning about Australia's food and food industries. We are grateful for the support of our industry and member organisations for assisting in our research efforts and providing industry-specific information and imagery to benefit the development and accuracy of this educational resource.



While reasonable efforts have been made to ensure that the contents of this educational resource are factually correct, PIEFA and our member organisations do not accept responsibility for the accuracy or completeness of the contents and shall not be liable for any loss or damage that may be occasioned directly or indirectly from using, or reliance on, the contents of this educational resource.

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