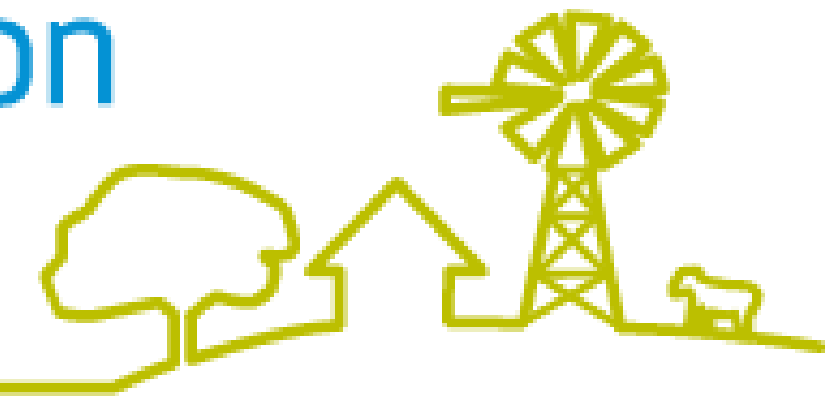


Primary Industries Education
Foundation Australia



NATIONAL AG WEEK 2023

DIGITAL LEARNING KIT

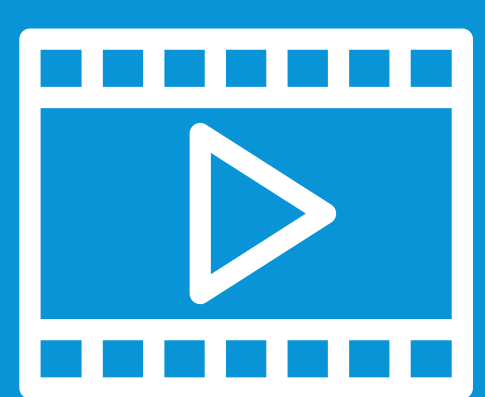
GROW YOU GOOD **THING** #AGDAYAU

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

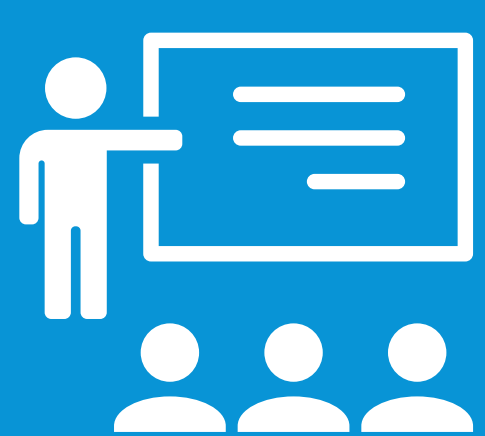
V9 Australian Curriculum Aligned



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)

Matt Kealley

SENIOR MANAGER FOR MEMBERSHIP
ENGAGEMENT AND INNOVATION
CANEGROWERS, BRISBANE, QLD

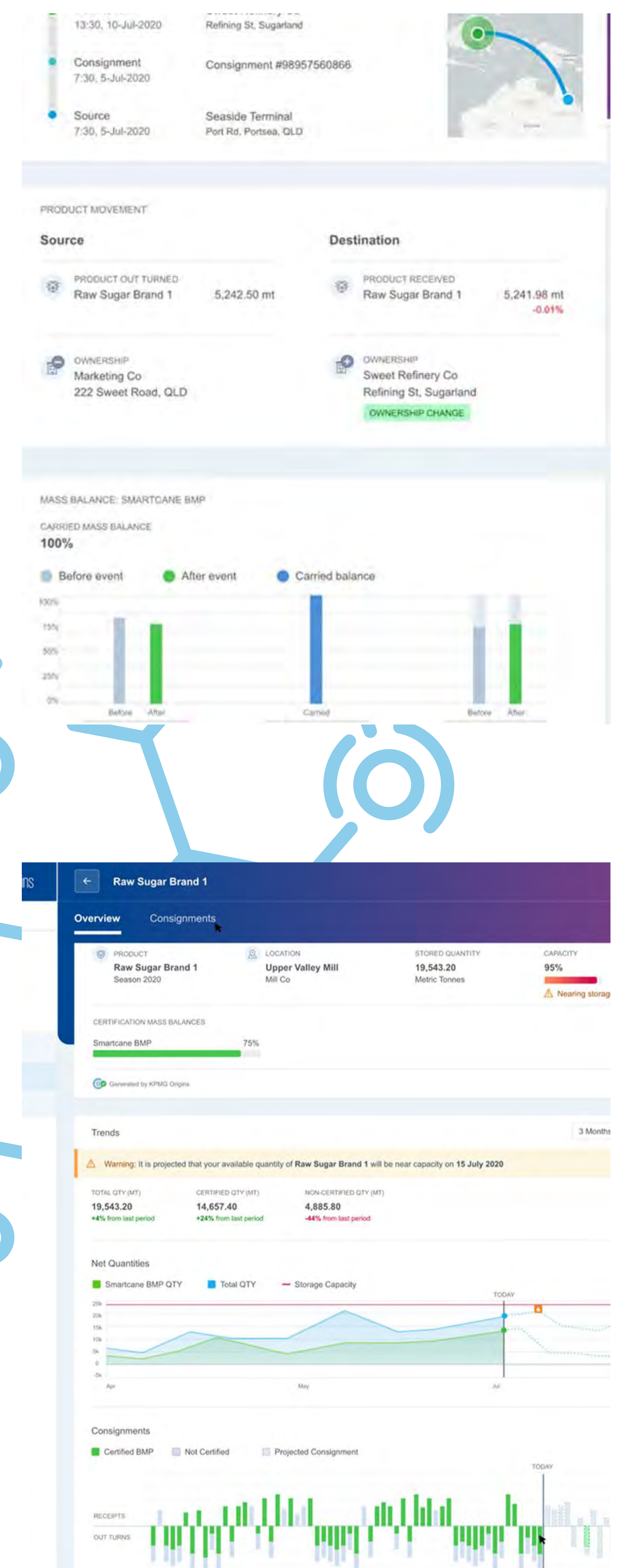


RESOURCE SUMMARY

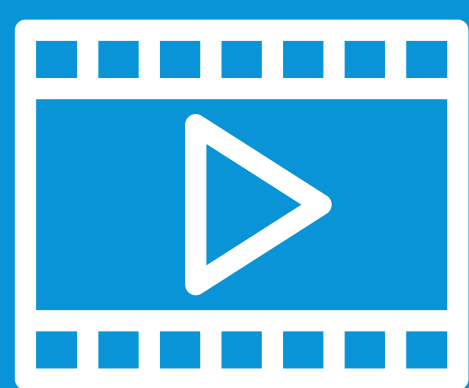
Learn about the digital traceability platform using blockchain technology in the sugar industry. This new technology allows product traceability across each major data collection point throughout the paddock-to-packet supply chain of Australian sugar. Blockchain is driven by the demand of food and beverage companies and consumers seeking to understand the sustainability of products across the supply chain.

The resource highlights that customers want confidence that the sugar they purchase is sourced from sugarcane growers who implement sustainable best management practices and reduce their environmental impact.

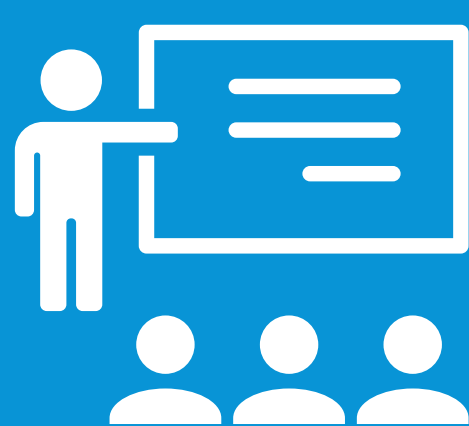
CANEGROWERS has implemented a Smartcane BMP program that assists growers in demonstrating best management practices across the farm. The need for IT consultants and computer programmers in this industry will support how data is collected and managed within blockchain technology.



ACCESS THE RESOURCES BY CLICKING
ON THE LINKS BELOW.



[PRIMARY VIDEO](#)
[SECONDARY VIDEO](#)



[PRIMARY WORKSHEET](#)
[SECONDARY WORKSHEET](#)

Phil-Anthony Patane

**NORTHERN DISTRICT MANAGER AND
AGRICULTURAL MACHINERY SPECIALIST
SUGAR RESEARCH AUSTRALIA, INGHAM QLD**

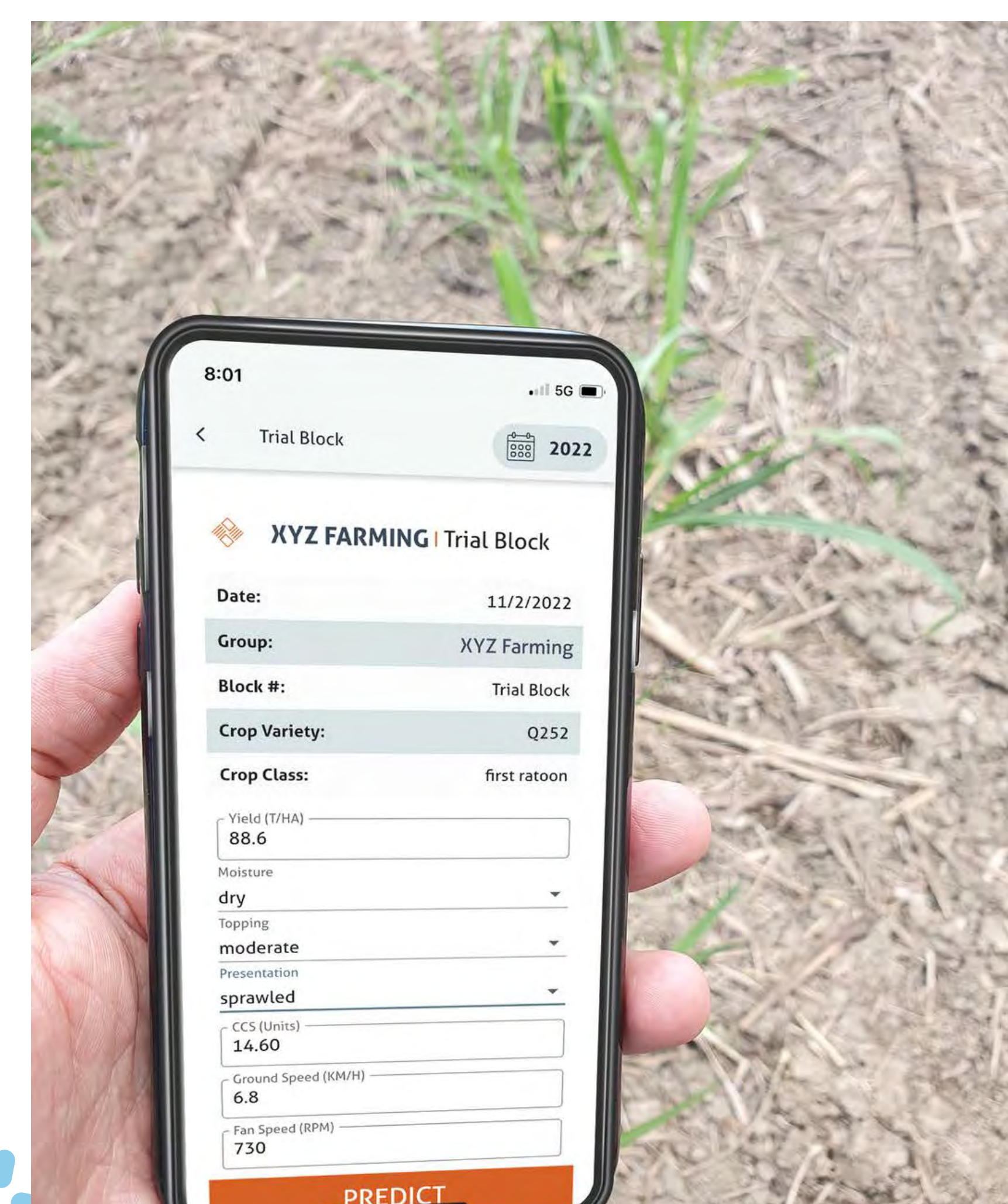


RESOURCE SUMMARY

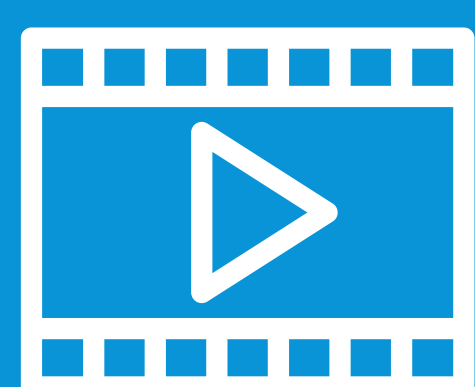
Learn how Harvest Mate uses industry data and agronomic and economic analysis to inform decision-making during sugarcane harvesting operations. Harvest Mate is a web-based portal and app developed by Sugar Research Australia and the Queensland Department of Agriculture and Fisheries (DAF). This innovative tool allows sugarcane growers and harvesting contractors to capture additional sugarcane and sugar yield from the paddock.

Hear about how a sugarcane harvester operates to ensure optimal practices are met during harvest. Agronomic and harvest conditions are entered into the software, which uses algorithms to predict whether a change in harvester settings or on-ground practices could increase yields and a net benefit to the grower.

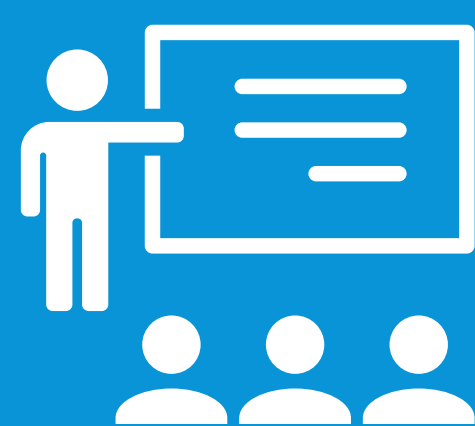
An opportunity for future development is to be able to program the harvesting machine to feed data into Harvest Mate directly, therefore supporting decisions in identifying optimal practices to increase revenue on the farm.



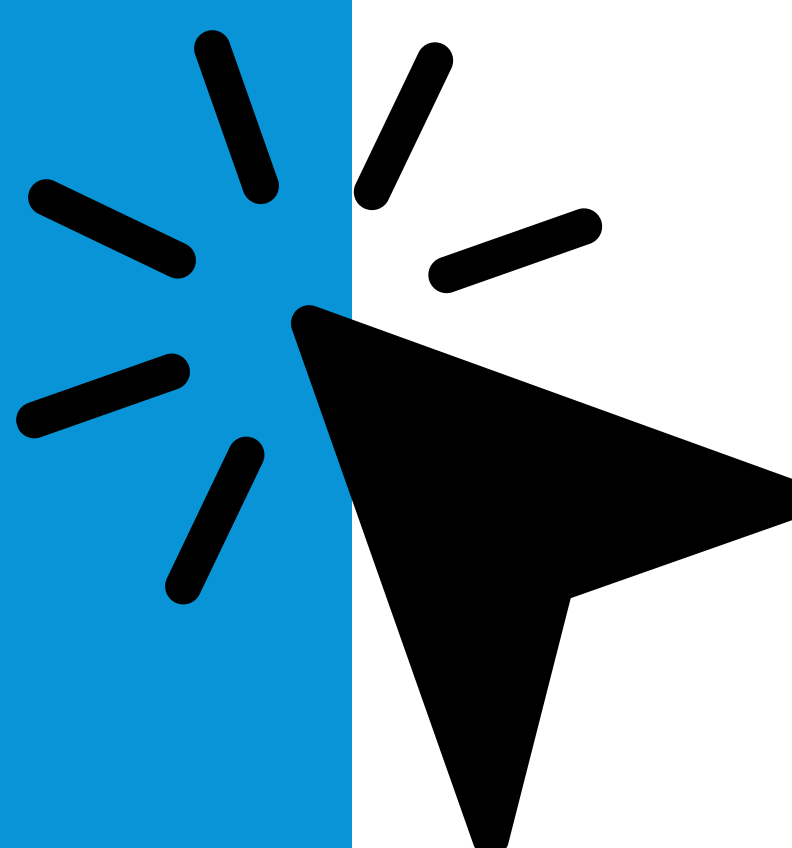
**ACCESS THE RESOURCES BY CLICKING
ON THE LINKS BELOW.**



[PRIMARY VIDEO](#)
[SECONDARY VIDEO](#)



[PRIMARY WORKSHEET](#)
[SECONDARY WORKSHEET](#)



SRA acknowledges the invaluable research contribution by economists from the Queensland Department of Agriculture and Fisheries (DAF) for the development of this tool, as well as funding from DAF for its delivery.

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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