

# AGRIFUTURES EXPORT FODDER HAY AGRONOMY FORUM OUTCOMES

24 August 2022, Adelaide

## Forum rationale and process

The current National Hay Agronomy research project (PRJ-011029) is drawing to a close and a consensus on future hay agronomy research priorities for the export fodder industry is needed.

The objective of the AgriFutures Hay Agronomy Forum, held 24 August 2022, was to engage with the export fodder industry and develop the key research priorities (outcomes/objectives) for hay agronomy over the next 5 years.

The Forum outputs were:

- Agreement on the key priorities (outcomes/objectives) for hay agronomy research over the next 5 years;
- Indicative strategies and activities to achieve those outcomes/objectives; and
- Key targets for each outcome/objective.

The Forum also provided a prioritisation of objectives so as to give an indication of resource allocation. The outputs from the Forum will now be used to develop the scope of a call for research proposals.

## AgriFutures Export Fodder RD&E Plan

AgriFutures Australia released its latest [AgriFutures Export Fodder RD&E Plan \(2021 – 2026\)](#) in September 2021. It is comprised of 4 priorities (objectives) with numerous strategies associated with each priority. The four priorities are shown below (with suggested budget allocation in parenthesis).

### **Priority 1: Production of high-quality export-grade fodder (50%)**

Objective: To increase the productivity and profitability of high-quality export-grade fodder.

### **Priority 2: Continued access to export markets (20%)**

Objective: To build the adaptive capacity of the Australian export fodder industry to retain and grow export markets.

### **Priority 3: Supporting innovation across the supply chain (15%)**

Objective: To increase innovation for improved productivity and profitability across the Australian export fodder supply chain.

### **Priority 4: Increased adoption of R&D outputs by industry (15%)**

Objective: To facilitate the increased adoption of R&D outputs and innovations to drive profit across the Australian export fodder industry.

The existing National Hay Agronomy (NHA) research project makes up a component of Priority 1 and comprises three inter-related areas of work (objectives). They are:

1. Agronomy
2. Plant Growth Regulators
3. Pathology

## Forum Outputs

### **Looking to success by 2027**

What does success look like for hay agronomy in 2027?

The outcomes of the Forum suggested that success looks like:

- Hay is a profitable option for farmers; with returns comparable to alternative enterprises, especially grain growing
- Hay is a component of a profitable sustainable farming system
- There is consistency of supply of hay to exporters
- There is solid demand for hay making equipment, indicating a profitable sector
- Customer needs are clearly articulated to, and understood by, exporters and hay growers
- Australian hay is seen as a desirable product in export markets
- There is a thriving market
- There is compiled knowledge on hay quality and animal production
- The problems associated with rain damaged hay and other production risks are reduced (shorter cut, cure, bale time)
- There are up to date guidelines for farmers to produce high quality hay, including weed management strategies
- Remote sensing is being used successfully for prediction of yield, harvest timings, quality and to identify and reduce in paddock variation
- Reduced cost of production
- Reduced chemical inputs (lower frequency of MRL breaches)
- Improved understanding on key hay pathogens (e.g. Red Leather Leaf)
- Greater understanding of the role of row spacings

### **Hay agronomy SWOT**

<p><u>Strengths</u></p> <ul style="list-style-type: none"> <li>• Capable, experienced growers</li> <li>• Hay provides rotational advantages for cereal growing</li> <li>• AgriFutures Research and Development Program</li> <li>• Good researchers</li> <li>• Frost management</li> <li>• There is demand for Australian product</li> </ul>	<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> <li>• Some researchers not experienced with export fodder requirements</li> <li>• Some private research with confidential results</li> <li>• Lack of direction for industry</li> <li>• Variety of customer needs</li> <li>• Weather variability</li> <li>• No industry consensus on feed tests</li> <li>• Weather variability</li> <li>• Labour intensive</li> </ul>
<p><u>Opportunities</u></p> <ul style="list-style-type: none"> <li>• Better define quality (customer requirements)</li> <li>• Better define market segments (now and in 10 years)</li> <li>• Increase yield</li> <li>• Promote oaten hay as a good product</li> <li>• Leverage off other crops / products (GRDC)</li> </ul>	<p><u>Threats</u></p> <ul style="list-style-type: none"> <li>• Increasingly variable weather</li> <li>• Climate change</li> <li>• Changes to diet / rations</li> <li>• Differences of opinion</li> <li>• Profitability of other crops</li> <li>• Other weed control methods</li> <li>• Ability to maintain markets</li> <li>• Ability to maintain researchers</li> </ul>

### Key outcomes sought from hay agronomy over next 5 years

Participants of the Forum identified key outcomes to be achieved from hay agronomy research over the next five years and ranked these based on priority. Forum participants individually 'ranked' key the outcomes then these scores were combined into an overall score. Below are the outcomes identified and rankings:

Outcome	Score
1. Increase hay yields by at least 10% whilst maintaining quality	117
2. Reduce curing time by 20% to reduce production cost and risk	92
3. Quantify customer quality requirements and communicate related agronomy impacts to farmers	34
4. Develop remote sensing technologies to reduce crop variability and improve yield	12
5. Maintain disease surveillance and communicate management guidelines to farmers	3

**While such rankings are indicative only, it does reveal a strong preference by the group for:**

- **Yields to increase by at least 10% while maintaining quality**
- **Curing time to reduce by 20% to reduce risk**
- **Compile customer requirements and relate them to agronomic impacts**

### Outcomes and strategies

Forum participants formed groups to develop strategies and activities to achieve the stated outcome. Not all outcomes were developed in detail as preference was given by the groups to increasing hay yields and reducing curing time.

Outcome 1: Increase hay yields by at least 10% whilst maintaining quality	
Outcomes and strategies	Possible strategies and activities
	Map paddocks and identify agronomy tactics to reduce yield variability
	Reduce nutrients into the grain to identify methods to increase yield
	Examine range in flowering time across varieties and different environments and impact on yield
	Increase tillering to reduce stem width (breeding or agronomy challenge)
	Undertake literature review on seeding rates, sowing dates, row spacings and impacts on yield
	Undertake literature review on impact of N application on yield versus quality
	Fungicides to reduce weather damage in windrows
	Increase water use efficiency (DM per mm growing season)
	Enhanced weed management
	Examine soil health and bio stimulants from other industries
	Develop integrated agronomic guidelines for growers
	Identify key quality grades
Possible KPI's	
Increase yield by at least 10%	
Target \$1,500 per Ha gross	
Guidelines for increasing yield and maintaining quality	
Increase water use efficiency	

<b>Outcomes and strategies</b>	<b>Outcome 2: Reduce curing time by 20% to reduce production cost and risk</b>	
	Possible strategies and activities	Employ methods to draw moisture from crop faster (mechanical (conditioners), chemical (spray))
		Focus on row space and cutting height to decrease curing time
		Understand influence of variety on curing time
		Conduct independent trials on windrow treatments
		Develop guidelines for windrow management and the influence on colour
		Improve paddock evenness to reduce variability of drying time
		Determine environmental influences on hay quality (sun versus moisture for yellowing)
		Develop methods to limit detrimental microbial activities in windrow
		Understand cost externalities for growers (fuel, fertilizer, machinery etc)
	Possible KPI's	Reduce curing time by 20% (some say 30% to 40%)
		Curing time to less than 7 days
		Reduce unsaleable export hay by 50%
		Provision of regionally specific Best Management Practice guidelines for curing
	<b>Outcome 3: Quantify customer quality requirements and communicate related agronomy impacts to farmers</b>	
	Possible strategies and activities	Market research on customer requirements
		Synthesise customer requirements to key agronomic actions
	Possible KPI's	Guidelines on implications of customer requirements
	<b>Outcome 4: Develop remote sensing technologies to reduce crop variability and improve yield</b>	
	Possible strategies and activities	Identify remote sensing technology's ability to assess crop variability
Map paddocks and identify agronomy tactics to reduce yield variability		
Possible KPI's	Use of remote sensing technologies	
<b>Outcome 5: Maintain disease surveillance and communicate management guidelines to farmers</b>		
Possible strategies and activities	Explore disease resistance of key pathogens	
	Better disease management to maintain quality and increase yield	
	Seed dressings and treatments to control soil borne diseases (review grain-based methods)	
Possible KPI's	Guidelines on disease best management practices	

### Other considerations

#### Gaps

- Many of the strategies and activities suggested highlight a lack of a long-term vision for the industry
- Clarity around customer requirements and what characteristics need to be measured in hay to meet those requirements.

#### Communication of progress of hay agronomy research

- Annual report on progress to industry
- Empower exporters to communicate directly with growers by providing extension outputs
- Include updates on the AgriFutures website.