A practical conversation on pasture dieback with Advancing Beef Leaders

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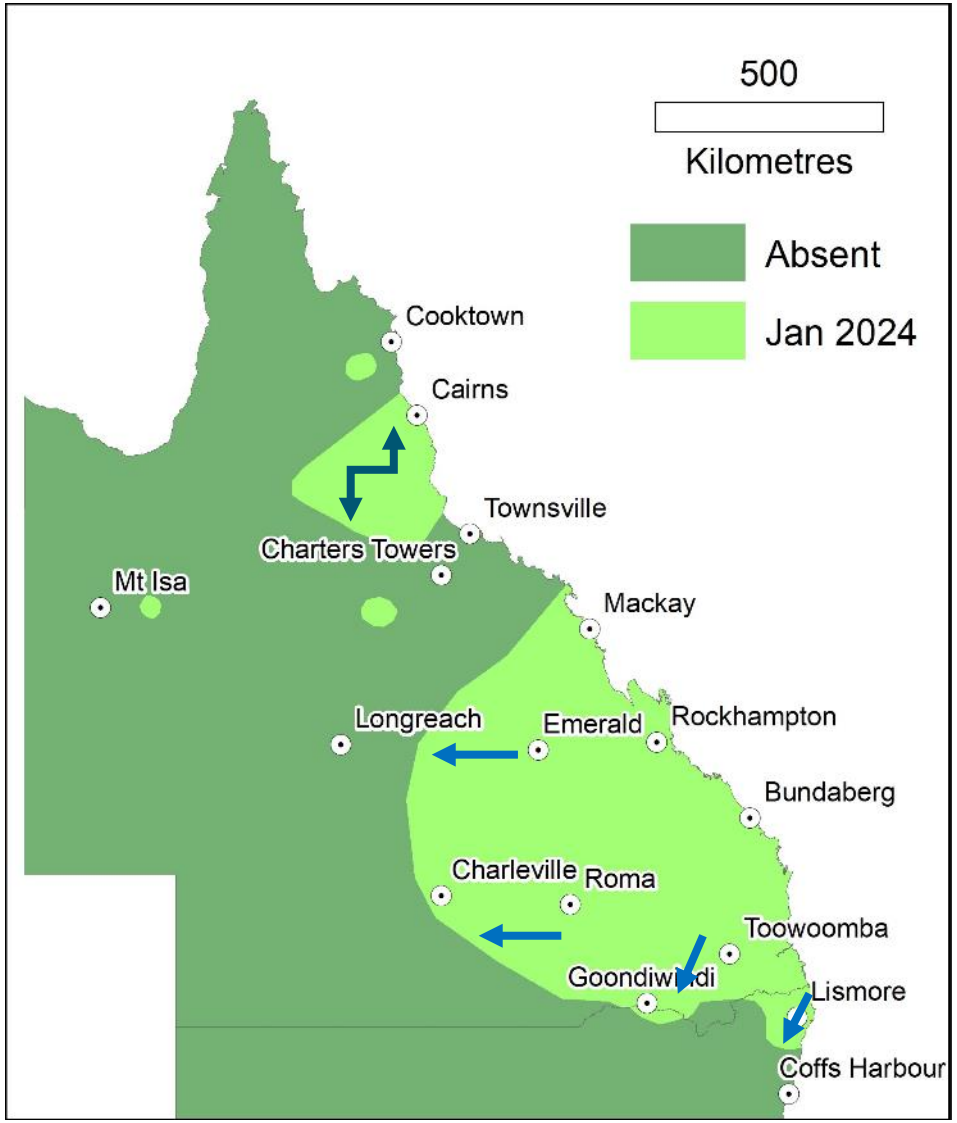
Outline

1. Background
   - Where is dieback located
   - Symptoms
2. Species affected
3. Causes and other factors needed for dieback
4. Management options
5. More information

Where is dieback?



Four symptom stages

Kikuyu pastures affected by dieback (Yarraman, March 2025)

What grass species are affected?

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How do I...

select grass varieties tolerant to pasture dieback?

The issue: Producers face ongoing challenges to maintain healthy and productive pastures to support their livestock operations. A growing concern for the industry is damage caused by pasture mealybug. Its detrimental impacts are significant for pasture production, affecting a variety of pasture species.

The impact: Mealybug-induced pasture dieback reduces the overall productivity and quality of grazing land. It can lead to significant economic losses.

The opportunity: By selecting mealybug-tolerant pasture species and implementing best management practices, producers can minimise the impact of pasture dieback on their grazing operations. Best results are obtained when mixtures of legumes and tolerant grasses are planted.

This fact sheet provides research-based knowledge to help producers make informed decisions regarding the relative tolerance and susceptibility of grass pastures to pasture dieback caused by pasture mealybug (*Heliococcus summervillei*) (Figure 1, Figure 2).

The information in this fact sheet summarises current conclusions from various field trials (an example in Figure 3) and glasshouse screening trials. These ongoing trials are evaluating the performance of different pasture species alongside mealybug-induced pasture dieback in a range of growing conditions. Observations by trained pasture agronomists in commercial paddock situations have also been incorporated. As additional data is collected, further updates will be produced.

Field trials and observations in commercial paddock situations have shown that pastures comprised of monocultures are more at risk from the impact of pasture mealybug than diverse pasture mixes, including both a mix of grass species and legumes (Figure 4).

Table 1 provides the relative tolerance levels of each grass species against the pasture mealybug, ranging from tolerant to highly susceptible.

Figure 1: Pasture dieback caused by pasture mealybug on tropical grasses, Note the small size of the mealybug, and purple and yellow streaking of dieback symptoms. Photo Caroline Hauxwell, QUT

Figure 2: Pasture dieback caused by pasture mealybug on tropical grass note purple and yellow streaking of dieback symptoms. Photo DAF

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	Species	Common name	Cultivar(s)	Confidence rating*	Soil type adaptation	Annual rainfall requirement# (mm)
Tolerant	*Urochloa brizantha*	Brizantha	Mekong	M	Loam - clay	>800
	Urochloa humidicola	Humidicola	Tully	M	Loam - clay	>1000
	Lolium multiflorum	Italian ryegrass	Multiple (+ AR37 / AR1)	M	Loam - clay	>600$
	Lolium perenne	Perennial ryegrass	Multiple (+ AR37 / AR1)	M	Loam - clay	>800$
	Megathyrsus maximus	Guinea grass	Hamil	L	Sandy/loam - clay	>800
Moderately Tolerant	*Cenchrus ciliaris*	Buffel grass	Biloela	H	Sandy/loam - clay	>600
	Megathyrsus maximus	Panic	Gatton; G2; Megamax059	H	Sandy/loam - clay	>700
	Setaria sphacelata	Setaria	Multiple	L	Sand - clay	>900
	Astrebla lappacae	Curly Mitchell grass	Native	L	Clay	>250
Low tolerance	*Chloris gayana*	Rhodes grass	Multiple	H	Sand - clay	>750
	Megathyrsus maximus	Green panic	Petrie	H	Sandy/loam - clay	>700
	Dichanthium aristatum	Angleton grass / Floren bluegrass	Floren	M	Clay	>700
	Setaria incrassata	Purple pigeon	Inverell	M	Clay	>550
	Urochloa decumbens	Signal grass	Basilisk	L%	Loam - clay	>900
	Bothriochloa pertusa	Indian couch	Medway; Keppel	L	Sand - clay	>600
Moderately susceptible	*Panicum coloratum* var. *Makarikariense*	Bambatsi panic	Bambatsi	H	Loam - clay	>500
	Digitaria eriantha	Digit grass	Premier	M	Sand - clay	>500
	Digitaria milanjiana	Finger grass	Strickland	M	Sand - clay	>600
	Bothriochloa bladhii subsp. *bladhii*	Forest blue-grass	Native	L	Sandy/loam - clay	>650
	Bothriochloa bladhii subsp. *glabra*	Forest blue-grass	Swann	L	Sandy/loam - clay	>650
Highly susceptible	*Bothriochloa insculpta*	Creeping bluegrass	Bisset	H	Loam - clay	>700
	Cenchrus ciliaris	Buffel	American / USA; Gayndah	H	Sandy/loam - clay	>300
	Paspalum mandiocanum	Broad-leaved paspalum	NA	H	Loam - clay	>900
	Cenchrus clandestinus	Kikuyu	Multiple	H	Loam - clay	>800
	Urochloa mosambicensis	Sabi grass	Nixon	H	Sandy/loam - clay	>600
	Digitaria eriantha	Pangola	NA	L	Sandy/loam - clay	>750
	Dichanthium sericeum	Qld Bluegrass	Native	L	Clay	>500
	Paspalum notatum	Bahia grass	Competidor; Riba	L	Sand - loam	>800
	Paspalum dilatatum	Paspalum / Dallis	Common	L	Sandy/loam - clay	>750

What is causing pasture dieback?

Pasture mealybug *Heliococcus summervillei*

What factors are needed for pasture dieback to occur?

Susceptible grass species

Pasture mealybug

Pasture dieback

Increase prevalence & severity

- Highly susceptible grasses
- High biomass
- Active grass growth
- Hot/humid, long growing season
- Secondary infections, viruses?
- High numbers of mealybugs

Reduce prevalence & severity

- Less susceptible grasses, legumes
- Low biomass
- Dormant grass
- Cool/dry, short growing season
- Predatory insects
- Low numbers of mealybugs

What can be done about pasture dieback?

PREVENTION?

No reliable and practical prevention strategies (currently)

ERADICATION?

No cost-effective eradication strategies (currently)

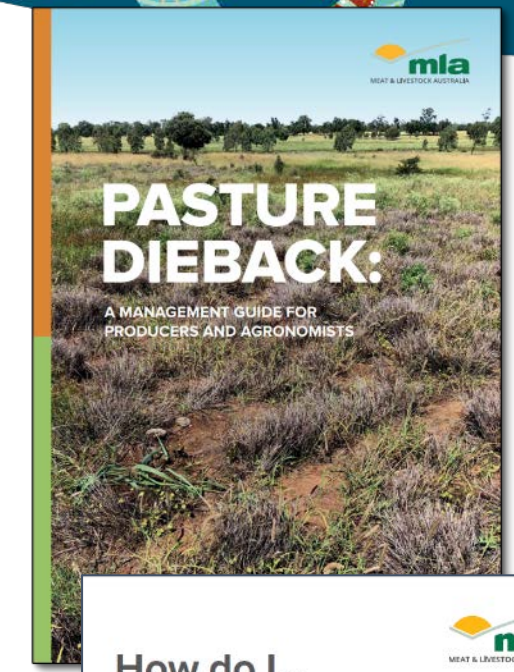
MANAGE WITH?

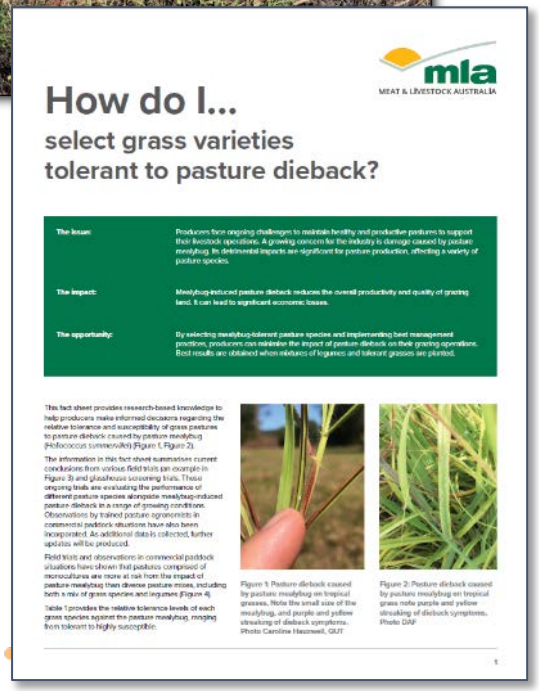
Yes, the only solution at this stage

What management options are effective?

Management strategies	Practice	Small patch		Widespread	
		Arable	Non-Arable	Arable	Non-Arable
1. Manage for recovery	Adjust stocking rate (forage budget)	✓	✓	✓	✓
	Monitor and treat weeds in bare patches	✓	?	✓	?
2. Improve pasture	Sow legumes and tolerant grasses	✓	✓	✓	✓
	Apply fertiliser	?	?	✓	?
	Renovation with cultivation only	?	X	✓	X

Information and tools available www.futurebeef.com.au





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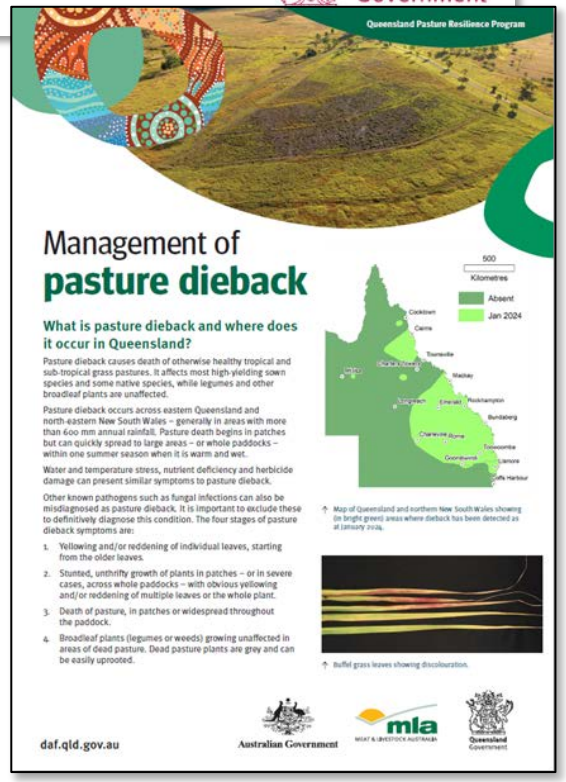

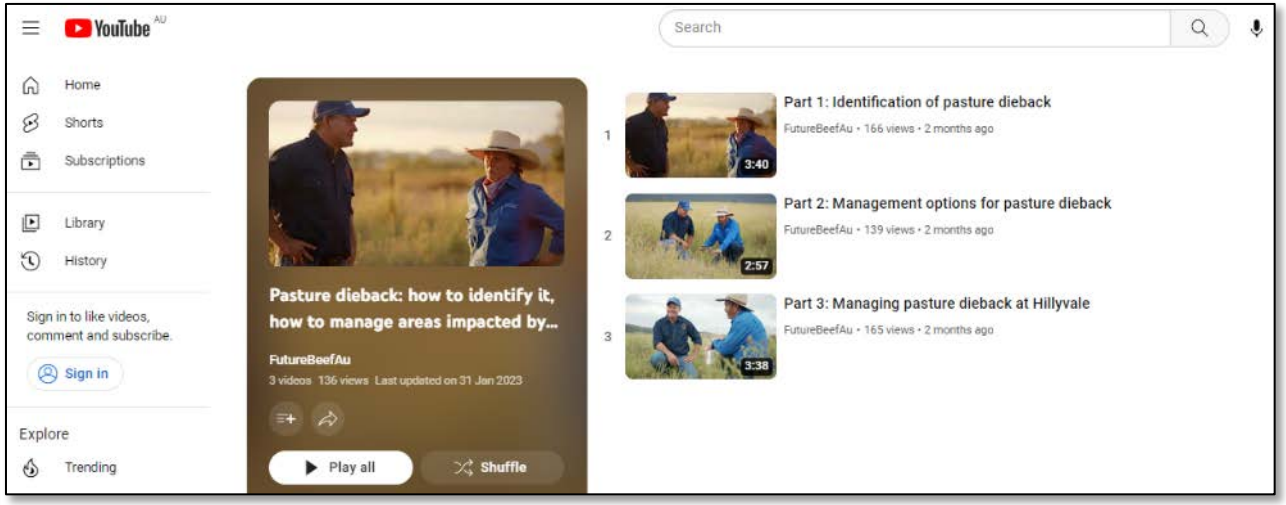

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Thank you. Time for questions

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