Using Grape Marc to Overcome Feed Gaps in Pasture Production

THE UNIVERSITY of ADELAIDE

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working together for a clean energy future

BAROSSA IMPROVED GRAZING GROUP BIGG

Australian Government

Department of Agriculture, Fisheries and Forestry

GRAPE MARC

FEED ALTERNATIVE

Condensed tannins

- ✓ Protect amino acids from ruminal microbes
- ✓ Reduce methane emissions
- ✓ Bloat control
- ✓ Anthelmintic effects
- ✓ Antioxidants
- ✓ Reproduction

Essential oils

- ✓ Performance
- ✓ Reproduction

Effect of grape marc on energy intake and performance

20 Angus steers
41 days

90% Chaff pellet
10% Oaten chaff
ME = 9.5 MJ/kg of DM
Protein = 7.7%

60% Chaff pellet
10% Oaten chaff
30% Grape Marc

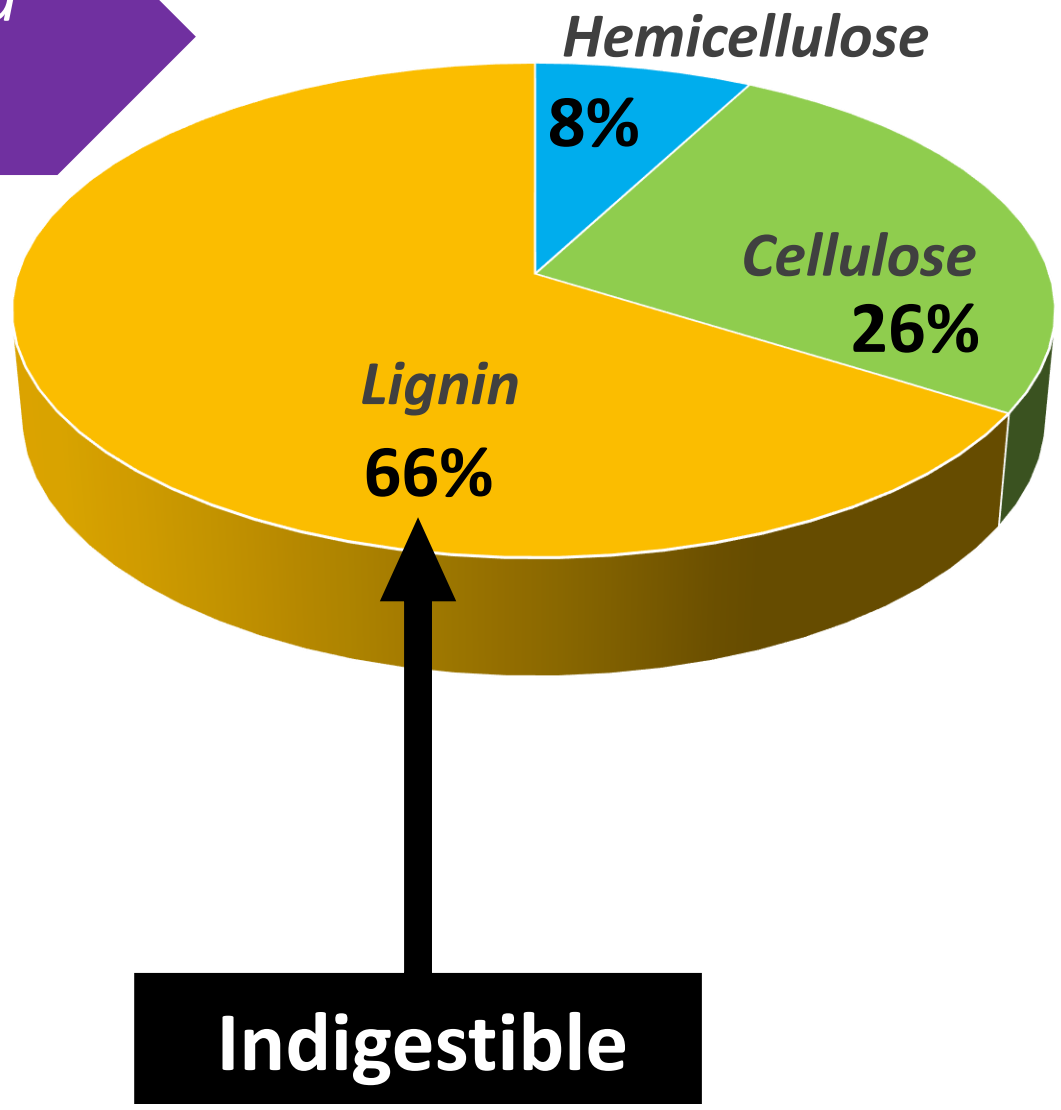
Cattle Trial

The inclusion of 30% grape marc reduced the energy availability

	Control	Grape marc
Final BW (kg)	443.5	424.0
ADG (kg)	1.758	1.600
DM intake (kg/day)	11.81	12.29
Feed:Gain ratio	6.81	7.88
Digestibility of DM (%)	55.18	48.59
ME intake (MJ/day)	104.0	100.3

Caetano et al. 2017
Animal Production Science
under review

Fibre Composition of Grape Marc

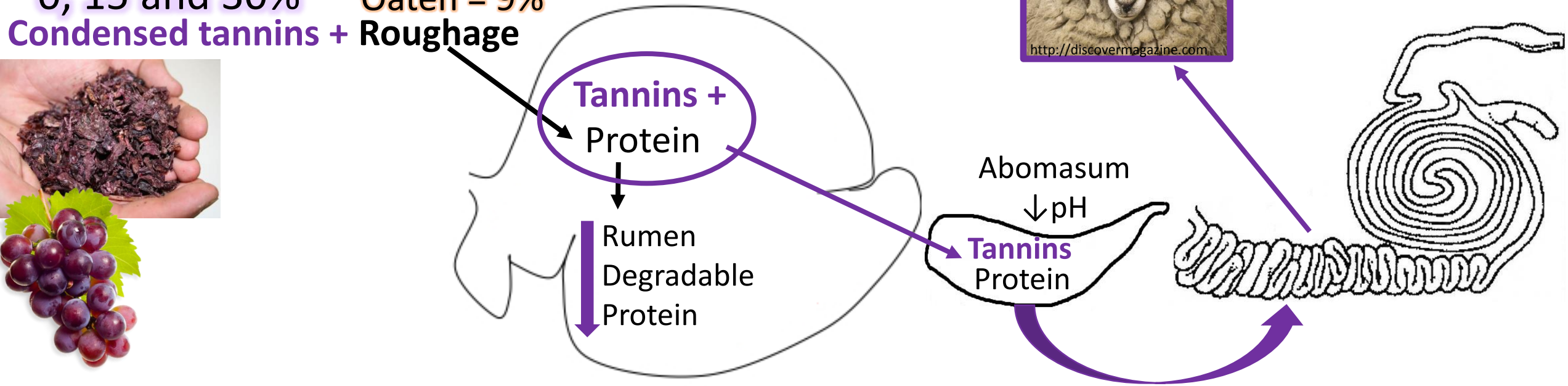


Effect of condensed tannins in grape marc to increase protein availability to the animal

Haylee A. Clifford

Grape marc
0, 15 and 30%
Condensed tannins +

Lucerne = 19%
Oaten = 9%
Roughage

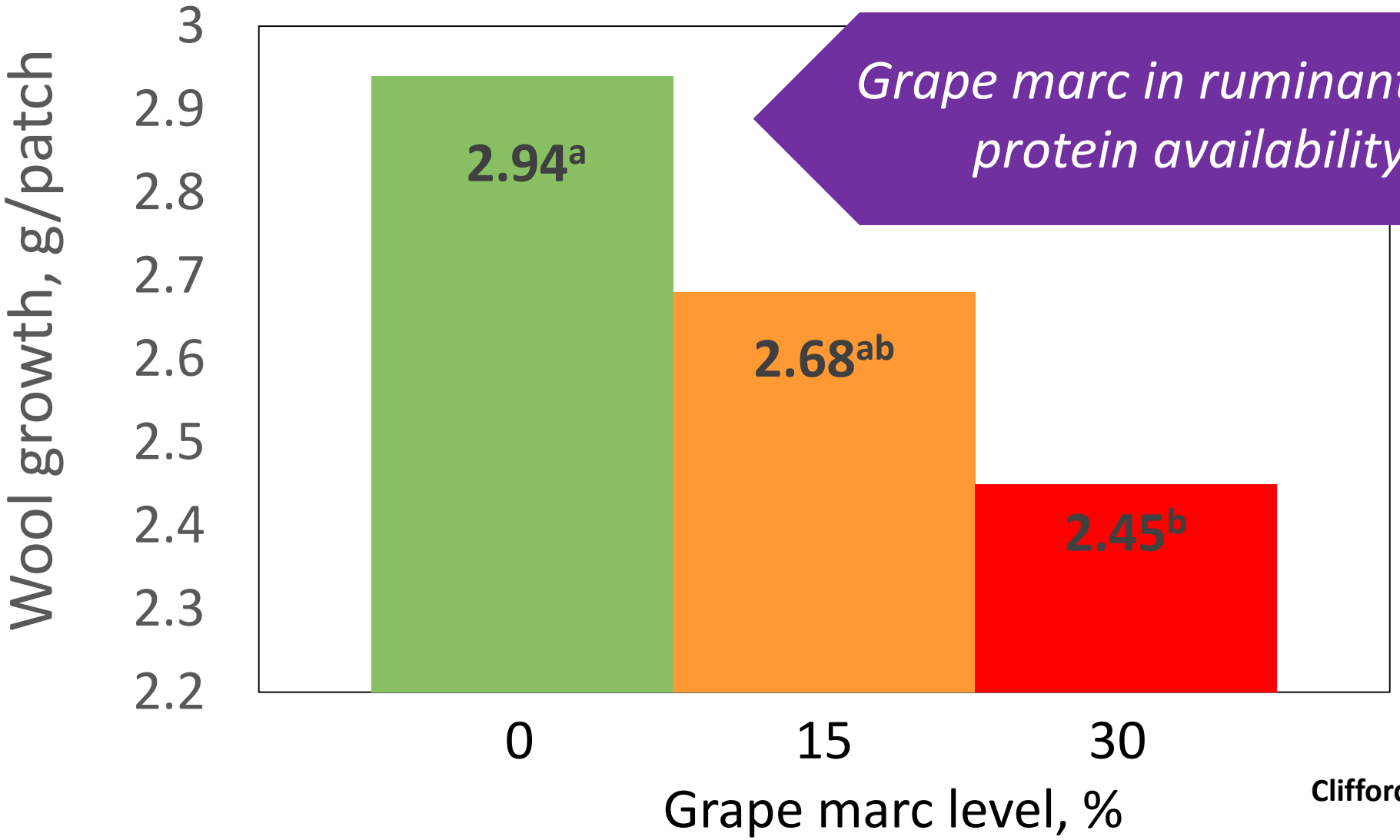


42 Merino ewes
90 days

Student scholarship:
Australian Wool Education Trust
John Ridley memorial

Clifford, Caetano and Hynd 2017
Journal of Animal Science
under review

Sheep Trial



Grape marc in ruminant diets reduces protein availability to the animal

Clifford, Caetano and Hynd 2017
Journal of Animal Science
under review

Effect of grape marc on growth performance

	GRAPE MARC LEVELS			
	LOW	MEDIUM	MEDIUM+B	HIGH
Straw (%)	17.0	17.0	15.0	15.0
Grape marc (%)	**7.5**	**30.0**	**30.0**	**70.0**
Barley, whole (%)	57.2	38.7	38.7	7.7
Lupins, whole (%)	15.0	12.5	12.5	5.5
Minerals + Rumensin (%)	0.5	0.5	0.5	0.5
Urea (%)	1.3	1.3	1.3	1.3
Oil (%)	1.5	-	-	-
Bentonite (%)	-	-	2.0	-

Cattle Trial

60 Angus steers
56 days

Inclusions up to 30% grape marc in a well formulated diet can provide cost-effective growth rates

	GRAPE MARC LEVELS						
	LOW		MEDIUM		MEDIUM+B		HIGH
Initial BW (kg)	324		318		333		335
Final BW (kg)	**401^{a}**	=	**401^{a}**	=	**407^{a}**	>	**376^{b}**
ADG (kg)	**1.45^{a}**	=	**1.54^{a}**	=	**1.34^{a}**	>	**0.68^{b}**
maximum	1.76		2.14		1.93		1.34
minimum	1.10		1.14		0.70		0.06

Take Home Message

GRAPE MARC

is a cheap way to convert industry wastage into feed during times of shortage

NUTRITIONIST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Thank you for your attention!