Floodplain
GRAZING PROJECT

FEED QUALITY OF COASTAL WET PASTURES

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In the summer of 2007-2008,* NSW Department of Primary Industries (DPI) measured the feed quality of native wet pasture species in the Macleay and Clarence Valleys. Farmers have used the coastal floodplains of northern NSW for grazing for over 100 years, yet little was known about the feed quality of coastal wet pasture species for beef cattle production.

Thirteen (13) species were selected for testing based on farmers' observations of wet grazing. However, not all species are found in every backswamp or wet pasture. Also, cattle will graze a species in some locations and not in others. For these reasons, each species was tested individually.

This leaflet gives the results of the research.

WHAT CATTLE NEED FROM FEED

The quality of a pasture as cattle feed depends largely on its:

- digestibility
- energy
- protein#

The performance of stock will vary as quality of the feed varies. The quality of the feed will be affected by the maturity of the plant, the amount of leaf compared to stem and the percentage of the feed that is green.

*Note: This data is from a limited data set from 6 months sampling. 2007-2008 was a cooler than average summer, and some species may perform better in other years.

#See Box 1 on the back page for more information about digestibility, energy and protein.

UNDERSTANDING THE INFORMATION

The table overleaf provides information on the digestibility and protein of common wet pasture species. For some species the range of values is extensive. The highest quality values were generally associated with vegetative plants and the lowest quality values with older flowering plants. The potential performance of dry cattle on the different feeds, assuming that they are eaten in isolation, is shown by a dot. It also shows the degree to which the average protein value is suitable for cows. It should be noted that livestock performance can also be affected by other factors (eg low palatability and mineral imbalances) which were not measured here and which may reduce the acceptability of the feed and/or performance of livestock.

Australian Government
NSW DEPARTMENT OF PRIMARY INDUSTRIES
Northern Rivers CMA

FEED QUALITY OF WET PASTURE SPECIES*

Bacopa *Bacopa monnieri*

PLANT

Digestibility 58 - 69
Energy 7.6 - 8.9

Weight loss	Maintenance	Moderate prod	High prod
		●	●

Protein 10.6 - 13.7

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●		


Coast Buttons *Leptinella longipes*

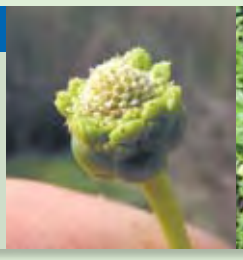
PLANT

Digestibility 70
Energy 8.9

Weight loss	Maintenance	Moderate prod	High prod
			●

Protein 17.1

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●	●	●




Common Reed *Phragmites australis*

LEAF

Digestibility 49 - 55
Energy 6.3 - 7.3

Weight loss	Maintenance	Moderate prod	High prod
●	●		

Protein 18.5 - 21.5

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●	●	●

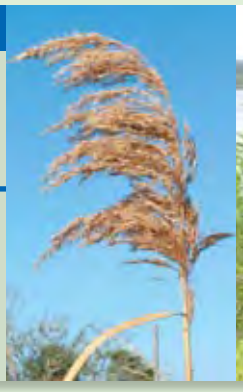
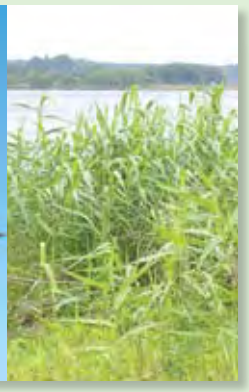
STEM

Digestibility <39 - 54
Energy 4.5 - 7.0

Weight loss	Maintenance	Moderate prod	High prod
●	●		

Protein 6.5 - 14.9

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●		

Frogsmouth *Philydrum lanuginosum*

LEAF

Digestibility 48 - 59
Energy 5.3 - 6.7

Weight loss	Maintenance	Moderate prod	High prod
●	●		

Protein 5.9 - 7.9

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●				

STEM

Digestibility <39
Energy <4.3

Weight loss	Maintenance	Moderate prod	High prod
●			

Protein 3.3 - 4.3

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●				

Marsh Club-rush *Bolboschoenus fluviatilis*

LEAF

Digestibility <39 - 51
Energy 4.4 - 6.3

Weight loss	Maintenance	Moderate prod	High prod
●			

Protein 7.6 - 16.0

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●	●	●	●	

STEM

Digestibility <39 - 47
Energy 4.3 - 5.3

Weight loss	Maintenance	Moderate prod	High prod
●			

Protein 3.0 - 12.7

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●	●	●		

River Club-rush *Schoenoplectus validus*

PLANT

Digestibility 42 - 45
Energy 4.9 - 5.7

Weight loss	Maintenance	Moderate prod	High prod
●			

Protein 5.8 - 6.1

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●				


Spike-rush *Eleocharis equisetina*

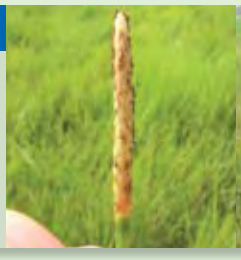
PLANT

Digestibility 44 - 52
Energy 5.2 - 6.7

Weight loss	Maintenance	Moderate prod	High prod
●	●		

Protein 6.6 - 8.7

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●				




Swamp Ricegrass *Leersia hexandra*

LEAF

Digestibility 50 - 53
Energy 6.7 - 7.1

Weight loss	Maintenance	Moderate prod	High prod
	●		

Protein 10.4 - 11.8

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●			

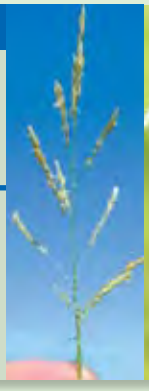
STEM

Digestibility 49 - 52
Energy 6.6 - 7.2

Weight loss	Maintenance	Moderate prod	High prod
●	●		

Protein 3.2 - 3.3

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●				



Tall Spike-rush *Eleocharis sphacelata*

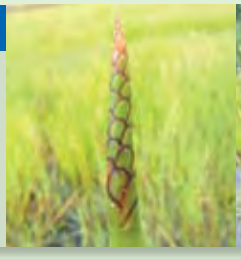
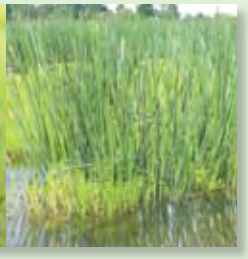
PLANT

Digestibility 43 - 47
Energy 5.0 - 5.7

Weight loss	Maintenance	Moderate prod	High prod
●			

Protein 7.4 - 8.2

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●				

Water Couch *Paspalum distichum*

LEAF

Digestibility 56 - 66
Energy 7.6 - 9.4

Weight loss	Maintenance	Moderate prod	High prod
		●	●

Protein 10.6 - 25.3

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●	●	●

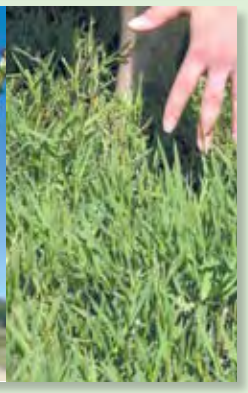
STEM

Digestibility 62 - 69
Energy 8.7 - 10.2

Weight loss	Maintenance	Moderate prod	High prod
			●

Protein 3.6 - 14.1

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●	●	●	●	

Water Ribbons *Triglochin procerum*

LEAF

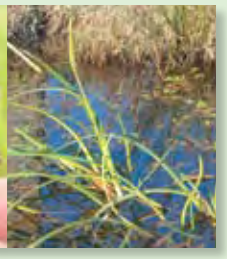
Digestibility 61 - 67
Energy 8.1 - 9.5

Weight loss	Maintenance	Moderate prod	High prod
			●

Protein 21.2 - 31.0

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●	●	●





Water Primrose *Ludwigia peploides*

LEAF

Digestibility 58
Energy 8.1

Weight loss	Maintenance	Moderate prod	High prod
		●	

Protein 22.6

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
●	●	●	●	●

STEM

Digestibility 51
Energy 6.3

Weight loss	Maintenance	Moderate prod	High prod
●			

Protein 12.9

Too low	Dry cow	Late lactation	Mid lactation	Early lactation
	●	●		


* Note that in wet pasture systems the cattle are able to graze a range of species so this table is only an indication of the relative importance of various common species. Not all species occur in every wetland.

- Where results are based on only one harvest (taken during the summer months), these are shown in grey
- Digestibility is measured as percent dry matter digestible (DMD%); Energy as metabolisable energy per kilogram of dry matter (MJ ME/kg DM).

BOX 1: DIGESTIBILITY? PROTEIN? ENERGY?

Digestibility is the percentage of a feed that the animal is able to utilize. This is closely related to the energy of the feed measured as megajoules of metabolisable energy per kilogram of dry matter (MJ ME/kg DM). Crude protein is used as an estimate of protein and is expressed as a percentage of dry matter (%DM).

Energy and protein are needed for all body functions including maintenance, milk production, pregnancy and growth / body condition. Protein is also needed for the digestion of fibre in the rumen.

OTHER RESOURCES

Water Couch, Floodplain Grazing Project Information Sheet, (2008) NSW Department of Primary Industries.

'Black' Water, Floodplain Grazing Project Information Sheet, (2008) NSW Department of Primary Industries.

Restoring the Balance: guidelines for managing floodgates and drainage systems in coastal floodplains, Johnston, S., Kroon, F., Slavich, P., Ciblic, A., and Bruce A. (2003) NSW Agriculture, Wollongbar.

Grasses of the North Coast of NSW, (2007) Rose, H., Rose, C., and Campbell, T., NSW Department of Primary Industries, Sydney.

Waterplants in Australia: A Field Guide (4th ed). (2003). Sainty, G.R. and Jacobs S.W.L, Sainty and Associates, Sydney.

Wetland Plants of Queensland: A Field Guide (2002) Stephens, K.M. and Dowling, R.M., CSRIO Publishing, Collingwood Victoria.

NSW DPI FLOODPLAIN GRAZING PROJECT

The extension program

The Floodplain Grazing Project was an extension program developed by the NSW Department of Primary Industries. It was specifically designed for graziers using low lying floodplain areas and promoted the concept of sustainable agriculture, where impacts on the environment are reduced and productivity maintained or enhanced.

Landowner involvement and commitment

The program ran in the Richmond, Clarence and Macleay Valleys with funding assistance from the Northern Rivers Catchment Management Authority, through the National Landcare Program.

In total 130 different landowners participated in the Floodplain Grazing Project, between them owning 15,530ha of floodplain and 5,490ha of swamp. All the landowners who participated in the Floodplain Grazing Project are to be congratulated for their interest in adopting sustainable agricultural practices.

CONTACT

For more information, contact the NSW DPI Office in Kempsey on telephone: 02 6562 6244.

Acknowledgements

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