

Feed quality of water couch (*Paspalum distichum*) and spike rush (*Eleocharis sphacelata*) on the North Coast of NSW

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Abstract: *Water couch (Paspalum distichum) and spike rush (Eleocharis sphacelata) were sampled for quality over the spring to autumn of 2006/07. Water couch is a good to high quality feed while spike rush is a low to moderate quality feed.*

Key Words: *Wet pasture systems, water couch, spike rush, feed quality, protein, energy*

Introduction

Wet pasture systems are a significant feed resource for livestock production on the North Coast of NSW. However, little is known about the productivity or quality of these systems. Such information would allow landholders and other natural resource managers to make more informed decisions about how to manage them and what to manage them for. The NSW DPI Floodplain Grazing Project sought to address these issues in 2006-07 by measuring the feed quality of the two common wet pasture species on the north coast; water couch (*Paspalum distichum*) and spike rush (*Eleocharis sphacelata*).

Methods

The site in the Macleay had been a severe acid sulfate scald until repaired by freshwater

ponding in the 1990s, developing dense stands of the native water couch and spike rush. The site was grazed, so 6 exclusion cages were placed over each species from spring to autumn. Each month, samples were taken from within the cages and the cages moved to new locations. Samples were dried at 80°C for 48 hours and then the digestibility (% dry matter - DM) and crude protein (% DM) were measured using wet chemistry analysis at the DPI Feed Laboratory (note NIR methods are not calibrated for wetland plants at this stage).

Results and Discussion

Digestibility is a measure of the percentage of a feed that is able to be utilized by livestock. This is closely related to the energy of the feed. Protein is needed by stock, not only for effective rumen function, but also for growth and lactation.

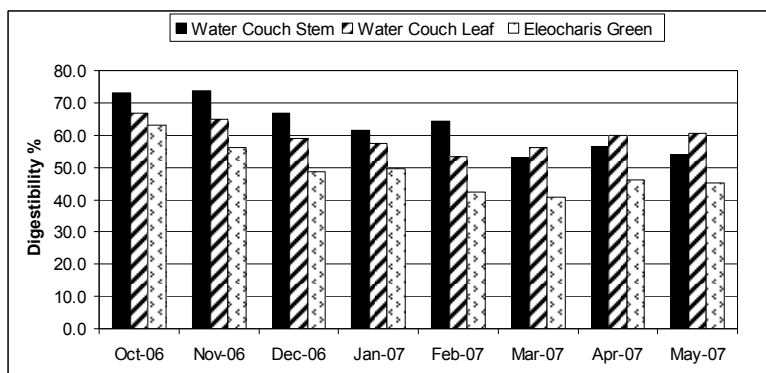


Figure 1: Digestibility of water couch and spike rush at the Macleay site, 2006-07

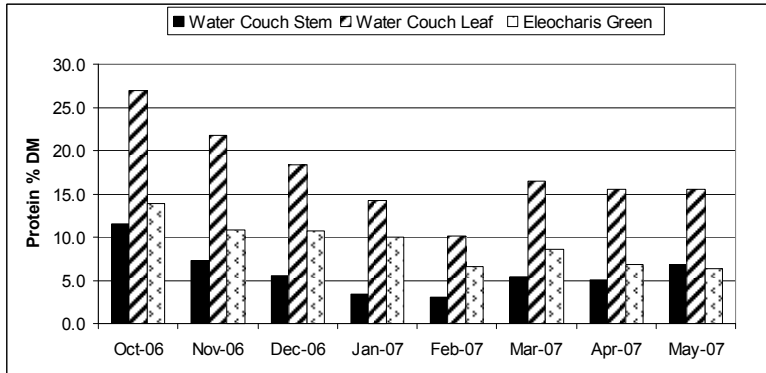


Figure 2: Crude Protein of water couch and spike rush at the Macleay site, 2006-07

Across the growing season, water couch leaf was 53.4–66.9% digestible and had 10.1–26.9% DM crude protein, while the stem was 53.0–73.5% digestible and had 3.1–11.6% DM crude protein. Spike rush was 40.9–62.9% digestible and had 6.4–13.9% DM crude protein (see Figs. 1 & 2). These results are consistent with quality data collected in 2003/04 (Rose & Rose 2005). By comparison, carpet grass (*Axonopus fissifolius*), which is a major component of hillslope pastures and wetland margins, is typically less than 58% digestible and has 8-12% crude protein.

This indicates that water couch stem and leaf is capable of moderate to high stock production. An interesting note is that unlike dryland species that have lower digestibility in the stem, water couch stem is generally more digestible than the leaf. The high quality of the stem is at least partially due to the moist growing conditions of the site and the need for less supporting fibre due to the buoyancy of the water.

Spike rush is of lower quality but still capable at times of maintaining or providing moderate production of dry stock. These differences may explain why water couch is usually observed to be grazed first when these two species are in the same paddock.

The quality of other backswamp species was collected over the 07/08 growing season and is published as a Floodplain information sheet, available from the authors.

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