

Harvesting Rice Straw

An alternative feed source during drought

Fodder Brief



Alternative feed sources are in high demand during drought in Australia. Rice straw can be an economically viable option when harvested and treated under optimum conditions. This Fodder Brief will discuss tips to improve the nutritional value of rice straw as a feed source.

Background

Due to the effects of drought conditions, not only do livestock growers have to contend with feed shortages, but also a spike in feed costs. Such circumstances will force livestock growers to consider alternative feed sources that they would not usually feed to their stock as traditional feeds will be in short supply or be too costly to purchase the full volume that they would usually feed to their stock. It is in times of drought that it may become necessary to feed a lower quality feed source like rice straw.

Traditionally, rice straw has been considered to be a waste or by product of growing rice which has largely been burnt in order to prepare for the next crop. The practice of burning rice straw is becoming socially unacceptable for environmental reasons; hence many farmers are looking for

more environmentally sustainable options to remove the straw from their paddocks.

Rice straw has become a favourable option for garden mulch in recent years as it takes longer to break down and retains soil moisture. However, it can also be a very economical feed option in the livestock growers tool box if conserved properly and used wisely as a part of a feed ration.

Harvesting

While it must be noted that rice straw is the lowest nutritional value form of straw available, not all rice straws are equal. There can be some very big differences in the quality of rice straw solely due to the timing of when the straw is harvested and baled. The sooner the rice straw is cut behind the header, the better the quality of the final product.

Table 1. Feed quality results of rice straw and silage

(NSW Agriculture, Rice Straw Tech Notes 2004, R Whitworth).

	Rice straw-dry	Rice straw silage (Amaroo) untreated	Rice straw silage (Amaroo) treated with ammonia gas
Protein	3.0%	3.1%	9.7%
Digestibility	43.0%	46.6%	55.2%
Energy (MJ/kg DM)	5.5%	5.9%	7.4%
Moisture	<10%	62.2%	50.6%

*Based on averages of feed test conducted by Feedtest Services (Hamilton, 1994) and NSW Agriculture's Feed Test Services (1994). **Note-that the above table is all based on Rice straw baled post grain harvest.

Ideally rice straw should be harvested between 3 and 10 days post stripping with the header. It must still be green when cut. If it browned off and dried out, livestock will refuse it as it is too dry and will have almost no feed value at all. The greener the straw, the better quality, which is a direct reflection of the moisture content of the plant at cutting.



Nutritional Value

It must be noted that rice straw is too low in energy and protein values to ever be a complete ration for any livestock, no matter how early it is cut or conserved. During drought, it can be useful and economical to form part of livestock ration. Most drought conditions see traditional types of hay and silage being in short supply and very costly. Rice straw can be used as part of the diet to lessen the total cost of the full ration and fill stomachs.

Case Study

During the 2004 drought conditions, a dairy farmer in the Goulburn Valley fed her cows 13kg of high energy/protein dairy pellets and ad lib rice straw on a daily basis when pasture ran out. While the cows averaged slightly less in milk production that year, the reduced cost of that ration soon made up the shortfall of the production loss. This enabled the farmer to continue to milk the herd, they still got back in calf, maintained reasonable body condition, but most of all the cows were contented on a daily basis. Contented livestock do not continually walk around in search of food, thus they retain more energy. This enables to animal to divert their energy to milk/wool/meat production, and conception rates are less likely to be impacted on.

In Brief

Rice straw nutritional value can be improved by:

- harvesting early between 3-10 days post stripping with the header
- cutting straw when green to retain moisture
- treating with nitrogen such as urea or anhydrous ammonia

Note

Rice straw should never be used as a complete ration for livestock, however it can provide a economically viable alternative to form part of the ration during drought.

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