

WIREGRASS MANAGEMENT

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 "Wairuna"  
 Barraba

I originally came to the Barraba area in 1978 from the Western Division of South Western N.S.W. attracted by a more reliable rainfall. Although this area was traditionally a dry sheep growing area I felt that a self replacing merino flock was not unfeasible. My property, "Wairuna", consists of 1498 ha (3700 acres) of trap type soils with undulating to hilly topography.

The average annual rainfall is 700 mm (28") which falls mainly in summer. It has varied from 406-1118 mm (16-44") over the last 10 years. This variation in summer rainfall can cause abnormal growth in summer growing native grasses (e.g. wiregrass).

Summer growing grasses form the basis of natural pastures and include red grass (Bothriochloa macra), wiregrass (Aristida ramosa), blue grass (Dichanthium sericeum) and corkscrew grass (Stipa scabra). Cooler season grasses include white top (Danthonia linkii), plume grass (Dichelachne micrantha) and wheat grass (Agropyron scabrum). Naturalised legumes include ball clover (Trifolium glomeratum), white clover (T. repens), haresfoot clover (T. arvense) and trefoil (Medicago minima).

When I took up "Wairuna" in 1978, paddock sizes ranged from 20 (cultivation paddocks) to 350 ha. Previous stocking had been with merino wethers and some cattle. Features of past management included continuous grazing in all paddocks, no rabbit control, and burning off mature grass in winter.

On "Wairuna" I run 100 Shorthorn cows and a self replacing flock of 2500 adult merinos, including 500 ewes which are joined each year. This means that half the flock need a higher quality pasture than the native grasses can provide in late autumn, winter and early spring when young sheep are losing their teeth and the ewes are feeding lambs.

In 1983 "Wairuna" received 125 mm of rain in April which was ideal for a wiregrass explosion. Consequently, I lost 40% of my lambs due to seed infestation. As this was financially disastrous, I had to find a solution. Because the topography is hilly, traditional cultivation methods to establish better pastures are not possible. During the 1980-81 drought, all my pasture improved country was bare and carried no stock while the unimproved country still had some roughage. I had to consider this when starting a pasture improvement scheme.

With the co-operation of Chris Dadd, Livestock Officer, Sheep & Wool, Gunnedah, Greg Lodge, Research Scientist, Agriculture Research Centre Tamworth and Lester McCormick, District Agronomist, Manilla, we settled on an area to start a wiregrass control program. Our aim was to establish with minimum cost, an area of improved country while retaining the best of the native grasses (especially the winter growing varieties such as white top).

The area selected consisted of approximately 120 ha and was subdivided into 3 x 40 ha paddocks. Forty hectares was selected as the ideal size because: -

1. Existing watering places would cater for the stock numbers required;
2. This size resulted in sheep numbers which could be easily rotated for controlled grazing or to keep body weights up;
3. It would be easy to fence with suspension electric fencing;
4. A relatively small area would be out of production during the winter period if the season didn't hold up.

The area of 40 ha selected for wiregrass control was burnt in August 1985 and subdivided with an electric fence. Following rain, wethers were introduced onto the green pick in November and continued to graze the paddock, initially at 10.00 DSE/ha (4DSE/acre). This was increased to 15 DSE/ha (6 DSE/acre) in January in order to handle the extra growth. A second 40 hectare paddock was stocked continuously at 2.5 DSE/ha (1 DSE/acre) to use as a comparison.

After the initial grazing period (November 1985 to March 1986) sheep numbers on the control area were gradually reduced to 5 sheep per hectare over the following 5 months. Because I had a self replacing sheep flock, I used my aged sheep where it didn't matter if they lost body weight. When all stock were removed at the end of March 1986, they were sold and averaged \$5.00, but it had been a very dry summer. Following early autumn rain, some replacement sheep were reintroduced in mid April and then removed from the paddock at the beginning of May 1986. The paddock was rested until December 1986 when stock were reintroduced.

In 1987 and 1988 cattle were initially used to graze the bulk of grass from November to December and then sheep mobs were rotated so no great loss of condition occurred. Sale prices for the aged sheep averaged \$9.00 in 1987 and \$11.00 in 1988. The higher prices were attributed to higher wool values and a better condition score resulting from the different grazing methods.

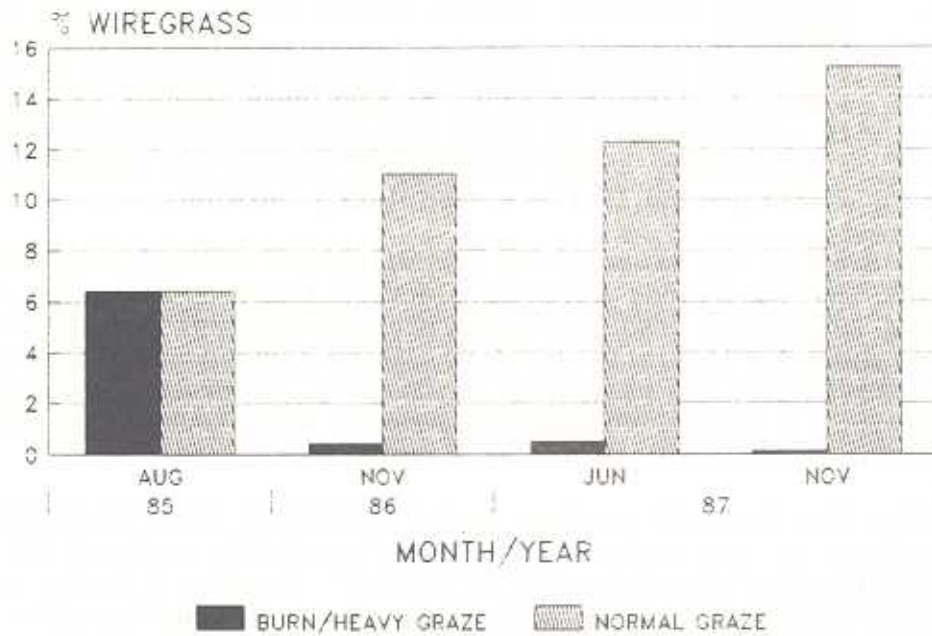
In the trial paddock the wiregrass has not been totally eliminated but it has been greatly thinned out allowing more favoured grasses to re-establish (see Figure 1a and b).

In 1985, we commenced a rabbit ripping program with the Pastures Protection Board. In 1988 when most rabbits had been eradicated, the control area was stick raked and all fallen timber burnt (Cost \$26.00 per ha). The area was oversown with subterranean clover (1 kg/ha) and Haifa white clover (0.25 kg/ha) and topdressed with single superphosphate (125 kg/ha). This seeding rate could have been increased to 6 kg/ha of subclover as it turned into a bumper season. This year I intend to super and seed again but with increased seeding rates.

At present it is a little too early to accurately estimate the carrying capacity of the 40 hectares in which Wiregrass has been controlled. However it carried 45 cows and calves and 1 bull from 1st November 1988 until end of February 1989. It was then rested, as we had a dry spell, until April when 100 ewes were moved in. After supering and seeding I will spell it again to allow the clover to germinate.



## (A) THE EFFECT OF GRAZING ON WIREGRASS



## (B) EFFECT OF GRAZING ON WALLABY GRASS

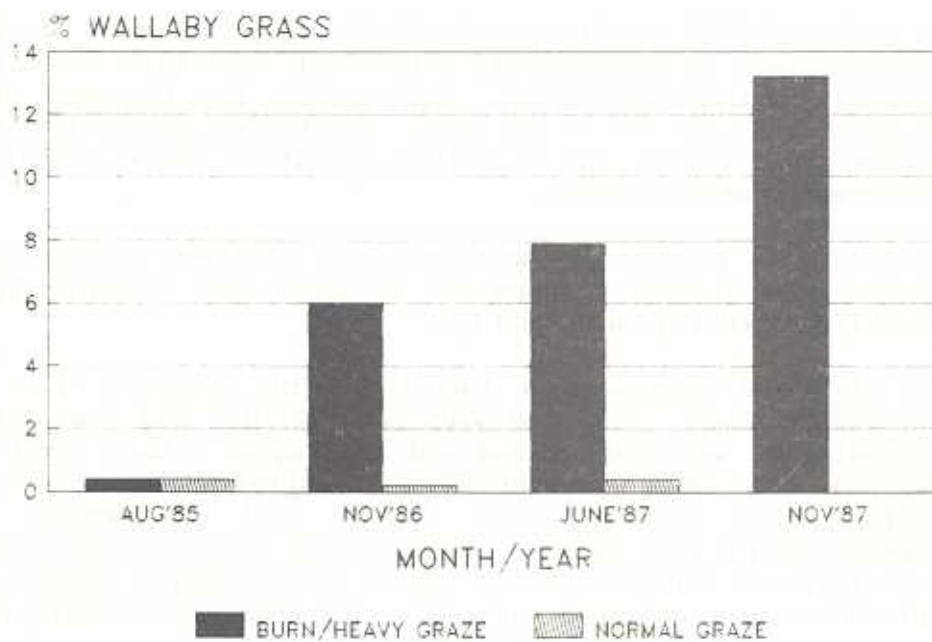


Figure 1. The effect of grazing on percentage composition when treated from 1985 to 1987; a) wiregrass and b) wallaby grass .

Vegetable matter has also been a problem associated with wiregrass. On my 21 micron flock the average percentage of seed contamination in fleece wool from adult sheep is 3% with the younger sheep reaching as high as 6%.

Taking the 1988/89 AWC figures, seed contamination is costing \$3.60 per fleece. The figures below are for 21 micron wool @ 1140 c/kg clean;

1.	Fleece wool @ 4.6 kg less 75 cents for 3% V.M. @ 73.0% yield = 3.36 kg x 75c	\$2.52
2.	Skirtings @ 1.0 kg greasy less 135 cents for 5% V. M. @ 65% yield = 0.65 kg x 135c	\$0.88
3.	Bellies @ 0.4 kg greasy less 200 cents for 6% V.M. @ 50% yield = 0.2 kg x 200c	<u>\$0.20</u>
	Loss per fleece	\$3.60

On a flock of 2500 adult sheep \$3.60 is a loss of \$9000.00. However, in my case the actual figure is higher. The hogget's wool tests 19 microns and brings a higher price but the wool contains a higher percentage of seed so the discount is greater.

#### FUTURE PLANS

When the wiregrass program is finished the trial area of 3 x 40 ha paddocks will be permanently divided into 2 x 60 ha paddocks. They will be grazed in rotation with cattle and sheep. We aim to develop the better country which is wiregrass infested using the same techniques. Where possible an initial burn to start the program is preferable as it removes all old and unpalatable grass which otherwise sheep would be forced to eat incurring weight loss etc.

Larger paddocks are also being permanently reduced in size to get better overall grazing. This allows for more controlled grazing in summer and a resting period especially during winter when the winter grass species need to regenerate.

In addition I will increase the already established areas of pasture by seeding wiregrass controlled areas to provide better grazing for ewes, lambs and younger sheep. This area which will have a low percentage of wiregrass will give a higher return on cleaner wool. Eventually this will allow me to increase ewe numbers from 500 to 1000 and give me more scope within the flock for a higher culling percentage plus sales of younger sheep.

#### CONCLUSIONS

For anyone contemplating wiregrass control there is no need for any drastic changes. Evaluate paddocks with existing fences and watering points. A shire dozer can clean a soak or put a bank across a gully at little cost to provide water in a subdivided paddock.

Suspension electric fencing is relatively cheap and easy to erect and can be dismantled and used again. A suspension electric fence using wooden droppers and 5 wires costs approximately \$650/km, \$336.00 for an energiser/80 km of fence and \$79.00 for a volt meter.

The paddock areas used will depend on the number of stock you can commit to the program. I feel that to do the job properly paddock sizes should not exceed 80 hectares.

In conclusion the exercise for me has been worthwhile and all future paddock developments are being based on a wiregrass control plan. The long term benefits include.

1. Pastures with higher nutritive value and increased carrying capacity
2. Wool with lower vegetable contamination
3. Improved type of stock i.e. ewes and lambs on what was once only wether country.
4. Last but most important by increasing overall value of the property.

With proper grazing methods, the addition of fertilizer, and clovers to complement the better native grass species, I feel that I have a more productive pasture which will endure seasonal changes better than a pasture comprised entirely of introduced species.

#### ACKNOWLEDGEMENTS

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