



## Wool crisis in the pasture wonderland.

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"Ruby Hills", Walcha, N.S.W.

### Abstract

The spring of 1998 saw some of the lowest wool prices in a decade. On one Walcha district grazing property, changes in management strategies were imperative in order to remain profitable under this regime. This paper traces those strategies, particularly in relation to pasture management.

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Anecdotally, the Chinese word for crisis is a combination of the words for danger and opportunity. This is how I have come to view the wool price crisis of 1998, and although I don't want to repeat the episode soon, it did provide us with a wonderful opportunity to examine the essence of our grazing business and to take steps to survive & hopefully to thrive. This paper attempts to trace our response to this crisis in relation to our existing and proposed pasture system.

### Background

Our sheep business is principally the production of fine & superfine wool (70%) and 1<sup>st</sup> and 2<sup>nd</sup> cross lambs, mainly to the local trade. Steers are bred from our 350-cow Poll Hereford herd and sold to the feedlots. We have a 5000 ewe self-replacing merino flock and a small stud to breed rams suited to our environment. We run a wether flock, which was originally a kind of safety valve but now turns out to be our most profitable enterprise, after our superfine hoggets. The first cross ewes are bred from our broader and less stylish merinos.

The engine room providing the feed, is a 2100 ha property just west of Walcha (locally promoted as "the pasture wonderland") receiving an average 800 mm of rainfall. Soils range from excellent, duplex traps and basalt ridges, to very difficult sandstone and schisty gravels. Terrain ranges from flat and arable to steep and rocky. Consequently, about half was sown to Mediterranean perennials by ground rig during the 1950's and 60's. Species used included Australian phalaris, perennial ryegrass (some Kangaroo Valley), Mt Barker and Talarook subterranean clovers and 'New Zealand mother' white clover'. These pastures are still extremely productive, and have been successfully rejuvenated in recent years. Later, the balance was sown aerially to clover and grass seed, most of which was harvested at home in order to propagate cultivars suited to our environment. These aerially sown species have survived well in the damp areas and in the basalt hills, but have failed in the harder country. White and subterranean clover are abundant during most years. *Microlaena* dominates the better, unsown areas and has become intermingled with the sown pastures. Whether due to a succession of dry autumns, or other possibilities, which I shall refer to later, we are bedevilled by *vulpia* particularly in the hilly country, which is inaccessible to boom sprays.

The superphosphate history is good with the use of reasonably high rates of molybdenum. (About once every 4 years we apply .08% Mo product.) We have used



about 125 Kg of single superphosphate per ha (or its equivalent of high analysis product) per year since aircraft became available in 1950. Soil tests reveal adequate but variable P. Bray test results were about 20 ppm, Colwell test results around 34-45 ppm.

Most spring growth is abundant due to annuals such as brome, and clover, exploding. This is a blessing because our stocking rate nearly doubles; however, unchecked, grass seed can be a curse. Perhaps the great unsung hero of our entire operation, is the ubiquitous perennial rye. It seems to have become adapted to all conditions and will survive the worst drought. It provides quality feed when all else struggles. We are trying to develop management systems to enhance its usefulness.

An important aspect of our business aims at taking advantage of these springs, and using dry stock to balance feed availability in the autumn, and winter. This explains the existence of our 1<sup>st</sup> cross ewe flock, and why our wether numbers tend to fluctuate. Because our clean animal health status is very important to us, we find it difficult to operate counter-cyclically, given our feed regime.

### **The wool crisis**

Our first response to the low wool prices of the spring 1998 was to examine our budgets, look at our strengths & weaknesses and make decisions based on fact rather than seek a silver bullet or abandon wool entirely. Our thinking became more focussed and our analysis proved beyond doubt that:

- (1) Our land is unsuited to activities other than grazing without large capital inputs. Our sheep business is as diversified as possible and is integrated, allowing reasonable income in fluctuating markets. Therefore, sheep were likely to remain our most important enterprise in the future. However, fibre diameter (FD) would need to be reduced.
- (2) We had to do everything in our power to lower not just costs, but unit cost of production.
- (3) We were understocked; a small lift in production would also have a large impact on profitability.
- (4) Our budget is very sensitive to the price of wool, and a small rise in price would also lift our profit dramatically.

### **The POA (Plan of Attack) and the value of quality**

#### **Cost of production**

We essentially put every aspect of our business under review and the key to all reviews was quality. It seemed to us that quality was driving production at every level and was also having some impact on prices. Likewise, decisions about quality often have, for want of a better word, a serendipitous spin off.

Hand in hand with this concept is the notion that cost of production is not the same as costs. Thus, in many situations we decided to spend more money on inputs and increase turnover in order to reduce unit cost of production. Quite often, there were unexpected benefits. An example of this strategy was our decision to use (expensive) drench capsules in our ewes prior to lambing in October 1998. The primary consideration in this case was to improve labour efficiency, however, we also found that our lambing





percentage in 1999 was 15% higher, due to better bodyweights in the autumn of 1999. Also, our 1998-drop hoggets were 0.7 microns finer than the previous year when our worm control program at lambing was not very good. As the two seasons were almost identical, particularly in regard to feed available at lambing, I suspect that most of the reduction in the Average Fibre Diameter of the lambs was attributable to better ewe nutrition in late pregnancy, due to the elimination of parasites. Better ewe nutrition increases the ratio of surviving secondary to primary follicles, particularly in twinborn lambs. (Mortimer & Atkins 1993; Short 1955; Schinkel & Short 1961; Skerritt et al 1994) This is an important consideration as the effect may be lifelong. However, I will claim that some of the improvement in fibre diameter may also be due to our improved breeding program.

Thus we concluded that every decision should be aimed at putting more product out the front gate at a higher price through quality, rather than spending less on inputs.

### Stocking rates

The drought of 1990-1994 left our stocking rates disastrously low and we have only just recovered. To see how this relates to our profitability, let's have a look at the effect a small increase in stocking rate has on the profitability of our business. Using my 1999-2000 budget, and fairly real numbers, an increase in stocking rate of 1000 wethers represents about a 5% increase in the number of DSE's carried, but it would increase disposable cash (i.e. after all costs including capital expenditure) by 40%.

It's easy to blame rainfall for the fact we seem to have either feast or famine, but part of our problem is that our production system relies partially on annual species. Of course we can't change this overnight, particularly when the arguments for increased capitalization in tablelands grazing, versus off farm investing, warrant some thought. However this is what we have done:

- (1) Increase fertilizer use.
- (2) Establish permanent fodder storage: if a fodder crop makes it to harvest, we have been building storage pits, which allow almost unlimited weevil-free time at low cost.
- (3) Slowly improve new and existing pasture:
  - (a) Our farming enterprise is almost exclusively the sale of protein. Therefore the health of our nitrogen harvesting system is a very important part of our business. For many years we have been lamenting the reduced impact of superphosphate and were suspicious that some factor other than low P levels was involved. I also took note of reports by my agronomist about poor levels of nitrogen in district soil samples. He has reported 50 samples had a mean N level of 3 mg/kg, where 7 mg/kg is considered an acceptable level. For some time I have been concerned about the vigour of clover growth, and whether it has been fixing enough nitrogen. Everywhere that the clover was struggling, we seemed to have *vulpia*. The sheep also appeared to be addicted to it but did poorly. So we decided to try winter cleaning. This technique involves the use of simazine in perennial pastures during winter months where moisture is adequate to partially control *vulpia*. Even though we were advised that the results could be ephemeral, the response was dramatic and, I believe is as



good as an extra bag of super. Clover is the first to leap away, and the perennials thicken up and become more vigorous soon afterwards. We have tried it on *Microlaena* dominated pastures and also get a good response provided there is adequate clover present. We now intend to spray about 200 ha every year, provided conditions allow.

- (b) Plant 40 ha of high production new pasture per year, often using a crop to clean up the paddock beforehand and to help finance initial preparation.
- (c) Continue to utilise the spring flush of annuals by selling local market suckers rather than become merino specialists.

### Prices

On any particular day, price depends on quality, which begs the question as to what is quality in wool production. Obviously fibre diameter (FD) is a major component and so, we have been using a number of measures to reduce it across the flock.

Firstly, genetic analysis and selection similar to Breedplan in cattle, has been employed in the Merino stud to reduce FD while increasing clean fleece weight (CFW). It requires a disciplined approach to setting breeding objectives, and a consultant with a big computer at no small cost, but it has the advantage of measuring progress across years. It enables us to know whether we are seeing true genetic progress as opposed to seasonal effects. Because our stud is all single-sire joining, this has been working quite well and the runs are now on the board.

For some years we have been side sampling our merino hoggets, and recording individual fibre diameters prior to shearing for marketing purposes. We have found that the rankings are maintained well into middle age. Using this information combined with better lambing percentages we have been able to make changes to our flock structure, which has also contributed to a reduction in fibre diameter.

Of course FD is not the only component of wool quality, and so we have had to work hard to improve our staple strength and to lower vegetable matter (VM), particularly in hoggets. Not surprisingly, as stocking rate goes up, and pasture improves, these aspects of quality do also. The big challenge is internal parasites, particularly as we have had such a long and unrelenting occupation by sheep. I think we still have a long way to go, but we are incorporating worm resistance in our breeding objective and are culling against scouring. We are also constantly monitoring faecal egg counts (FEC's) in our sheep, particularly hoggets. We could still improve our grazing management in regard to parasites and this is where we see the role of cattle and to a lesser extent, crossbred sheep.

Another way we can influence price is to become better market timers. We found that we weren't getting adequate advice from the wool-broking fraternity in this regard, so we hired a consultant, and I am happy to relate that he more than adequately earned his exorbitant fee.

### The future

In 1996, we had a team of wethers in the National trial conducted by the Orange National Field Day. Even though we didn't win, I was amazed at how well these sheep grew at Orange and the astonishing amount of wool they produced compared with





their brothers at home. (I didn't cheat on the selection, because I hoped to learn from the experience). Likewise, Hatcher et al, in a 1999 AAABG proceedings paper, made a similar observation where they state: "In conclusion, translocation of fine and superfine Merino sheep to non-traditional environments, led to a dramatic increase in wool production accompanied by only relatively small changes in fibre diameter...Indeed the results of this study lead one to wonder what is limiting the productivity...in traditional tablelands environments." So what is the matter with tablelands grazing systems? I believe that the answer as always is starvation, either through lack of quality feed or because the worms get it before the sheep does.

But I also wonder whether the solutions to these aspects of our business are straightforward. Recently, in a paddock with very good levels of P, we had a partial failure establishing a new pasture, which was explained not so much by low pH but high levels of Al saturation (aluminium toxicity). Upon further examination, there is another paddock nearby which has the same problem. We have therefore commenced a liming programme prior to sowing. Whether the problem has been induced by farming practice or is native to the soil, it is difficult to say. But we know the cost of amelioration will be high, but not as high as doing nothing.

Interestingly, on "Ruby Hills", the results of some extensive soil testing involving paired sites, indicate that there may be a relationship between pasture improvement history and lowered pH in association with aluminium toxicity. (M. Duncan, NSW Agriculture, Armidale: Pers. Comm.)

Furthermore, the *vulpia* problem appears to be worst in those areas where the low pH, high soil aluminium problem is identified or suspected. Therefore I am beginning to wonder whether the removal of *vulpia* is treating a symptom rather than a cause. Perhaps the quality answer is to treat *vulpia* with lime? Likewise I am loath to attempt to replace *Microlaena* with other species because it and ryegrass seem to thrive in areas where seedling establishment is difficult due to the soil chemistry, which is apparently can be quite variable.

Finally, what's it all about? I hope that a little philosophy is allowable at a grasslands conference. If so, two things about quality of life on the land come to mind:

- (1) The commodity that a grazier has least of is time. However, I strongly believe that time can be bought using a quality approach to all business decisions, rather than relying on price alone.
- (2) Tableland graziers often rationalise their plight by arguing that they replace money with lifestyle. I believe that to be bunkum, as there is not much lifestyle in worrying about the wolf at the door. The farm is always just out the back door. Depression is at last being recognized as a serious issue in the bush. I have found that a structured, disciplined approach to analysing one's business, (even to the extent of writing a "business plan", complete with mission statements etc) has improved profitability. But the most important thing is that it has allowed me to put a firm space between myself and the daily onslaught of the farm. Its great to come home and truly shut the farm outside because after all it is just the business and I know its all taken care of by the planned strategy.



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