Sheep, Crops and a Month in Spring

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Reflect a while, dear friends, upon
The silent servitude
Of sheep that give us wool to wear
While they go in the nude. - Ian Healy

Key points

1. Any sheep enterprise is less affected by dry springs, high maximum temperatures during September and October and frosts, than any cropping program.

2. The compromise between conserving moisture for crops and growing feed for sheep is a delicate balancing trick that requires an understanding of soil type, plant agronomy, historical rainfall data and probability of rainfall events. Endeavouring to make money from every hectare every year can have positive and negative results.

3. Sheep, managed properly, can enhance soil fertility, reduce resistant weeds, provide a buffer against sudden variations in income and increase over all farm profitability.

Farmers replying to the BCG survey this year attributed 55% of the reason for failure of crops in 2004 to the dry finish, the extreme hot days in October, and the widespread frost in October. This has been a common complaint over many years. What happens from the middle of September to the middle of October has an enormous influence on cropping profitability. This is even more the case for pulse crops, which are more frost susceptible and have a shallower rooting system.

Does our farm profitability have to be so reliant on what happens during one month in spring? How can we protect ourselves from a single event (one frosty night) that can change profits into losses? Are continuous cropping systems or short term fallow (chemical or physical) rotations acceptable risk management strategies? Is a mixed enterprise, one that incorporates a sheep one of the solutions to these challenges?

This discussion is equally relevant to farmers using a direct drilling system, a reduced drilling system and the conventional cultivation system, although some zero tillers maintain that sheep and their system are mutually exclusive. The fact remains that one critical month in the spring is crucial to their profitability!

So why are sheep not part of every farmer's program considering that gross margins of sheep are comparable to most crops this year and that sheep rely on feed growing throughout the growing season and even through the summer? (Refer to BCG manual 2003/4 "Getting into sheep".) One reason is that the necessities of sheep feed often prevent farmers from fallowing early in the season (before September) resulting in significant reductions in subsequent crop yields.

Results from the BCG survey this year also showed that long term fallow (before September) produced consistently between .6 to 1 tonne/ ha better yields in cereal crops than non fallow. Making the financial comparison between long term fallow and subsequent crop over two years against sheep one year and crop the next over two years is an exercise that we all should undertake.

The effects of using the first example of "getting into sheep" from last year's manual, followed by a wheat crop yielding .4 T/ha against a long term fallow that yields 1.2 t/ha are shown below.

Year 1 of sheep and crop rotation.

Bought merino ewes in early December 2003 for $56.60 (4 years old, depastured to Poll Dorset ram in December 2003, July shorn). When transport costs were added the total cost was $60 per head. The sheep were medium to well grown with a mixture of wool types.

Adding costs of production per head throughout the year.

Interest $6 + selling costs $10 + shearing $3 + husbandry $4 = total $23/ head. Total outlay $83/head.

Estimated income : 5.5 kilo wool @ 360/kilo greasy $19.8

Sell 95% lambs for $ 75 = $71.25

Sell 95% ewes in December $45 = $42.5

Total return/hd = $133.8

Profit / head =$50.8

Carrying ewes at 3/ ha over winter and spring period produces a profit for sheep of $152/ha

Year 2 variable costs of growing wheat crop = $ 150 /ha**.**

Return from .4 T /ha at 14% protein 5% screenings 9% moisture is $ 170/ t = $64/ha

Variable costs = 150/ha

Loss = $86 /ha

Return over two years = $152 - $86 = **$66/ha**

Two year fallow wheat rotation

Long fallow wheat crop that yielded 1.2t/ha 13% protein 3% screenings 9% moisture = $170/t

Returns =$204/ha

Costs = $ 150/ha

Profit over two years = $54/ha

In this example the sheep – crop rotation was slightly more profitable than the long fallow - wheat example. It is probably fair to say that they are similar considering the variation in costs and returns in different areas. The example may be slightly unfair because to run ewes at 3 /ha some pasture improvement and hand feeding of grain may have to be undertaken which adds costs to the sheep enterprise. Added to this is the recognition that the spring of 2003 was also dry, limiting the amount of water that could be harvested for the 2004 crop. If an extra 25mm of water could have been saved because of theoretical average September/ October rains then the additional yield may have been 1.3T/ha instead of the .8T/ha used in the example. However, if, as occurred this year, a paddock received more than 100mm of rain during November and December, the moisture saved by fallowing may not be needed or of less importance. The assumption that the farmer that fallows early does not use the

paddock during the first half of the year is also an assumption that may not be true in every case.

The question that also needs to be asked is: what difference would there be in an average year and an excellent rainfall year? Does long term fallow become less important in wetter years? The answer to this question is probably yes and in some rare situations fallow can have a negative effect on yield. So the above example suggests that fallow has its greatest effect in dry years such as 2004.

When we experience average or above average seasons it is reasonable to assume that continuous cropping rotations might come into their own. However there is still the problem of risking all on that month in the spring. If farmers really are worried about the uncertain spring weather conditions, then balancing a sheep enterprise with a cropping system is a good risk management strategy. This is particularly relevant now as meat prices remain high and with excellent prospects for the future. On the other side of the ledger, grain prices seem to have come under pressure from the increased $AUS/US ratio and increased global production.

Is it possible to both maximise crop yields as well as run a profitable sheep enterprise? We know how important to both systems is the conservation of water, as is improving soil fertility and reducing weed populations. Unfortunately there is always a cost for everything we do, and it could be said that on many occasions we are robbing Peter to pay Paul.

However, there are some known facts which can assist us in making these important decisions.

Medic pastures are efficient extractors of moisture from the soil, usually guaranteeing no moisture is left in the profile at the end of spring for next year's crop. All Nitrogen set by medic pastures accumulates by the end of flowering. Thus, if it is possible to kill medic pastures in September then some moisture can be saved and considerable Nitrogen can also be gained. The negative to this is the reduction of the medic seed bank and the reduction of important spring feed.

Long-term research by the DPI (Department of Primary Industry) has shown that medic plant densities of greater than 250 plants / sq meter are desirable to maximise both feed and Nitrogen produced in pastures. Added to this is the knowledge that on good medic pasture years as much as 0.5 to 1T/ha of medic seed can be produced. When waste, hard seeded-ness and cropping program is taken into account, only one good seed set year every five years is needed to ensure adequate plant densities. The alternative is to kill medics every year and sow medics when needed. If 10 kilograms of medic is sown then only 250 to 500seeds/ square metre would result which probably suggests that sowing seed is not the ultimate solution. The practical resolution to this problem might be to kill a proportion of pastures in good years where excess feed is available and conversely in dry years to save all pasture paddocks for sheep and seed production.

Grazing sheep on pastures, in theory, gives farmers many more options in controlling weeds, particularly resistant weeds. The diverse options of herbicides that can be used on pastures, especially when spray topping, can have great advantages in the long-term in the control of weeds. However, unless timing at spray topping is spot on, weed populations can increase and not decrease. An alternative option is to apply a group A herbicide in August and follow up with a spray topping herbicide in October. The combination of sheep grazing and the herbicide application ensures weed control and is also a good herbicide resistance management practice.

Many of the problems that farmers experience with sheep occur because at certain times of the year (usually autumn) sheep are a hindrance to the cropping program. If only sheep could disappear for a month or two! Then autumn feed cold be allowed to grow or maybe cropping paddocks could be sprayed or cultivated to save moisture and prevent possible root disease developing. These are long term problems with which farmers have been grappling for decades. The solutions to these problems, I believe, lie in intensive feed lotting of lambs, hand feeding of store stock in small enclosures and the sacrifice of some paddocks while others are released for growing feed. Having the facilities set up in readiness to solve these short term problems will be important considerations in the future.

The profitability of sheep relies to large extent on stocking rates. The greater the number of sheep per hectare, the greater the number of lambs born and wool produced, resulting usually in greater returns to farmers. An added consequence of high stocking rates is the intensive grazing of pastures and weeds that can reduce costs of weed control, even to the extent of saving any herbicide weed control at all. High stocking rates are usually positive for the profitability of the farm. However, when things go wrong (droughts and wind erosion), the cost to the farm can be dramatic. Again these extreme events require infrastructures that allow sheep to be taken off paddocks.

Finally, over the last 30 years, the Mallee Wimmera region has seen the expansion and the passing of the intensive pig, emu, ostrich and chicken industries. Intensive duck and lamb industries seem at the moment to have replaced them. Whether these will remain and be more sustainable than the others is unknown, but at this stage at least the prospects look encouraging and positive for both.