PASTURE DECLINE:

PASTURE DECLINE, A FARMERS VIEWPOINT

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Abstract: The experiences and results of the management system used at "Pylara" are fairly typical of many other tableland situations. The slow down in the productivity of our pastures seems to be universal and there are few answers to address the problem. Pasture decline is a change in the structure and composition of the plants present which has the capacity to reduce the production that can be harvested by animals or other traditional means. Some of the possible causes and solutions such as economics and soil imbalances are noted. Does this decline matter and should we turn it into our servant not our master? Pasture managers desire to take away from the conference a clear understanding and priority of the causes of pasture decline. Further, at least three things that can be economically implemented to help manage the pasture resource better.

BACKGROUND

Pylara is a property of about 3,000 ha which is located 46 km south of Goulburn. It has relatively light soils and straddles the dividing range 720 m to 930 m above sea. level. Rainfall averages 650 mm/yr.

The pastures are two thirds improved with a total super input of about 4.2 t/ha. About half this rate has been applied to the balance of the farm over the same period.

We run 11,000 sheep in a stud and flock merino operation, as well as a stud and commercial Poll Hereford herd totalling 900. The minimum stocking rate averages about 8.5 DSE/ha.

I attended Marcus Oldham Agricultural College, returned to the family property. In 1987, I attended the Mt Eliza Advanced Management Program but the course was orientated to business not agriculture.

I became a farmer because of my background. But I believed that farming was a good means of making enough money to sustain me in the way I would like to become accustomed. Given the current woes of the agricultural industries, perhaps I saw something more than was there!

There have been a lot of changes at "Pylara" since I took over the reins from my father. The pastures, water and other facilities have been improved which has produced a dramatic lift in carrying capacity. The staff has been reduced significantly, and we paid back the debt. Then things got tight when commodity prices slumped. Our response was to set about looking at the cost/benefits of various components of our operation, as well as some non-agricultural ventures. Things got worse which made us re-examine our options: all the time we were trying to find a way of gaining a better result. Wool prices increased, but then declined again, and we are where we are now.

My great concern is that we have already made the changes which I see as the big slices of the efficiency cake, and while new practices and products are still being developed to address current problems, the gains for the effort are likely to be only marginal at best.

Unfortunately, the gloom continues because I think there is worse to come. I have observed over the last few years that the resources we use to earn a living are deteriorating at an alarming rate. This brings me to the theme of my paper, *viz.* pasture decline.

I think that our experiences with this problem are similar for many of us in agriculture. I hope to give this topic some perspective by covering the following:

- Define pasture decline
- Is it really important? Does it matter ?
- What are some of the causes for decline?
- Describe some possible solutions.

- Pose some question to which pasture managers need satisfactory answers ; and,
- Describe some actions we are taking at "Pylara".

Hopefully we will either get them in the next two days or at least provide some direction to getting the answers.

SOME INITIAL OBSERVATIONS

Our lifetime of experiences in agriculture need to be kept in perspective in relation to change whether it be looking back to the 1970s, or since the arrival of white man in this country, or to the beginning of herding and tilling. We are here for only a moment in time. Pollen in Lake George indicates that eucalypts are a relatively late arrival to Australia, yet we see them as "native" to the area.

Carrying capacity seems to be stationary or starting to drop, yet I am having trouble locating a specific cause. Although the spring of 1992 was very good clover year, there seems to be a general declining trend in legume composition, particularly sown clovers. Our on-farm fertiliser trials do not seem to show any noticeable responses, bearing in mind that over 50 years we have put out around 4 t/ha.

The question I ask myself is am I seeing what I am looking at?

WHAT IS PASTURE DECLINE ?

Is it a reduction in production, a change in composition, or both? The proportion of weeds has certainly increased particularly as we produce more and more seed for grain. The wingless grasshopper eats much of any green f eed in summer and as a result the production levels of particularly young stock falls off.

Perhaps pasture decline is due to more fundamental changes to the resources used in pasture systems that are less obvious. For example, micro organisms in the soil like fungi, moulds and insects must also have effects on what grows from the soil. Soil is our most important resource, yet it is the factor we probably know least about.

Is pasture decline a function of other factors such as management, climate, and the consequences of management decisions made years before (*eg.* dry salinity)?

Our pastures are are bit like a country road where many factors can contribute to deterioration. For example, a country road is seen in decline, this decline is due to time, a change in the usage to a much higher rate and weight. The road is in decline but much of it is due to what we as humans have done to it. How well it was built, how long it has been down and how well it has been maintained and what with have an effect.

DEFINITION

Pasture decline is a change in structure and composition which has the capacity to reduce the amount of production that can be harvested by animals or other traditional means.

DOES IT MATTER ?

Yes it does matter! Let me illustrate this by another analogy. If one regularly bought an ice cream for the kids and they consistently only ate half of the ice cream, we would either buy smaller ice creams or find a way to get the child to eat it all. We certainly would stop spending as much on ice cream if the waste continued.

I believe that our pasture systems are much the same. At best, a large number of producers would be using less than half the pasture produced. It is interesting that I have this quest to grow more even though I do not use anywhere near all I grow now!

Perhaps in pasture decline we are just observing change. It is often better to move with change and make it our servant by using the positive aspects to advantage rather than fighting it and let it become our master.

Instead of spending money to improve the pasture, perhaps more pasture should be purchased or rented. We may produce less product overall, but if there is less of it on the market, the price may rise as well.

WHAT ARE SOME OF THE POSSIBLE CAUSES?

Economic

There is an obvious need to be able to make an acceptable return for the effort put into agricultural

businesses. This has led to inappropriate stocking rates, lack of fertilizer inputs, and generally cutting corners in the current economic environment.

Pests and diseases

Whether they be traditional or a consequence of some other action pests and pathogens such as grasshoppers, cockchafers, scarabs, rusts, and viruses can alter pasture production and composition.

Fertilisers

Inputs of appropriate fertilisers change the make up and/or balances of nutrients in the soil, particularly over the long-term. I do wonder whether components of fertilizers (*eg.* cadmium) might not be damaging fungi or molds that are important in the pasture growth.

Seasonal conditions

In seasons or years when rainfall is not sufficient for growth of the main species, annual grasses and weeds can invade and cause either temporary or permanent shifts in pasture composition..

Imbalances in the soil

Imbalances or toxicities can cause a decline in the function and populations of small organisms such as fungi and moulds as well as affect the availability of plant nutrients and the physical structure of the soil.

SOLUTIONS TO PASTURE DECLINE

The solutions will come from a combination of factors that include:

- Economics.
- Grazing management (how and when);
- Pasture composition;
- Fertiliser inputs (amount and frequency);
- Weeds and pest management;
- Climate changes (*eg.* ozone layer, green house, effective rainfall and growth potential);
- Genetics and genetic engineering of the plants or animals,
- Land use (*ie.* cleaner water).

Who is going to pay for it all and who gets the benefits, who has the capacity to pay and what happens if we do not pay? Most farmers want to be proactive when problems arise, provided they have the capacity to do something about the problem.

However, while it is our desire to solve pasture decline problems, we do not want to jump on the next pasture fad which does not last or do something that would cause damage either now or in the future. We really need to know where we want to go.

Is it better to hold the production on each hectare at the same rate or increase production capacity per man by buying more land? In the long-term, the latter may be cheaper.

Priorities need to be established to identify the areas where research can have the biggest impact, thereby avoiding the allocation of vast sums of money to gaining very detailed information on low priority areas. It is my belief that research dollars should be spent on a larger number of smaller projects to assess the broader picture, and then focus on specific high returning projects.

No matter how much is spent on gathering information, it is a very poor investment if it is not implemented, particularly for those who paid for it. The production of scientific papers is waste unless the information is implemented in a profitable way. I get worried when I see an $8 million project with a ten year uptake of under 10% of producers. It would seem pretty poor odds, the benefits may well be more than $8 million, but is this the best place to spend one great lump of our money?

The more producers can play a part in the identification of problems and formulation of solutions, the more credibility the solutions may have which is likely to lead to faster and greater acceptance.

ACTION WE ARE TAKING

To arrest decline and hopefully exact improvement in pasture at "Pylara" we are implementing the following:

- Recognition that there are changes taking place;
- Assessing the stocking rate of each paddock;

- Changing our grazing management;
- Conducting on-farm fertilizer trials;
- Seeking information.

WHAT DO PASTURE MANAGERS NEED TO KNOW ABOUT PASTURES?

The following are areas where I think information is scarce to be a significant constraint to solving pasture decline on farms:

- How to manage the change.
- How to more effectively use the pastures we have. Pasture make up, what is best in the long term.
- To ensure that the answers are implemented on as wide an area as possible.
- Pasture treatments such as fertilizers or conditioners, do they work and are they economical?

CONCLUSION

It is apparent that producers are worried about pasture decline, and it is equally obvious that under the current economic conditions of escalating costs and falling commodity prices that there is little spare capital to solve the problem by resowing pastures. So that farmers can invest their limited funds wisely, it is essential that we not only have a clear understanding of the causes for pasture decline, but that we also have a priority listing to enable us to concentrate on correcting those factor which are likely to produce a sustained benefit. Hopefully, from this conference I will learn a number of things that will help me to better manage my pasture resource.