# MAINTAINING AND RENOVATING PASTURES USING SPRAY-GRAZE AND SPRAY-TOPPING

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We farm two properties at Gumble north west of Manildra. The farms, 6 km apart, are run as one unit and consist of 1000 ha of undulating to hilly low to medium fertility country with small areas of high fertility soil.

Our practice has been to crop approximately 280 ha annually while we carry approximately 2300 ewes, for prime lamb production.

The crop/pasture system varies but normally the pasture phase is followed by 4-5 wheat crops followed by a crop of lupins then 2-3 more wheat crops with the last crop undersown to pasture.

The pasture phase usually lasts 5-7 years depending on the rate of weed invasion by renovating the older pastures using the techniques described below.

The pastures at home are basically subclover lucerne with grasses. The grasses are becoming too prevalent particularly barley grass and annual ryegrass. Barley grass is the grass that I like the least, but it is good winter feed, however the grass seed problem in late spring causes great difficulties with prime lambs.

## SPRAY-GRAZING

The basic broadleaf problem is saffron and variegated thistles on the higher fertility areas. With the build up of nitrogen, variegated thistle becomes a bigger problem. The legume pastures are part of the cereal farming rotation only with phalaris cocksfoot and perennial ryegrass sown in paddocks that are not part of the cereal farming rotation.

Normally the pasture has a cycle of around five to seven years before the paddock goes back into crop. Linked with grass control is the important matter of root disease control for the cropping phase.

## ASPECTS OF PASTURE MAINTENANCE/RENOVATION

There needs to be a reasonably close watch following the autumn break to distinguish the type of weeds that have germinated within the pasture. Of course the two types of weed you are going to get are broadleaf and grasses. We need to identify the type of broadleaf weeds present which are normally saffron and variegated thistles and Paterson's Curse. These are the broadleaf problem weeds. We also need to distinguish between the annuals, e.g. barley grass and ryegrass, from the perennial species.

Having identified the weeds, the skill of maintaining or improving the pasture is to determine the intensity of these weeds.

Of course paddocks are not uniform and you have to determine the importance of the weed even though it is not evenly spread across the paddock. The next step in the program is to decide whether or not to treat whole or only part of the paddock or only patches. In making this decision, we set priorities for treatment based on available cash resources and stock numbers. The weeds once killed have to be replaced with various pasture species and in my

situation there is no point in spraying if the weeds can not be replaced by clover or lucerne.

**Paddock preparation for spraying**

After realising that the problem exists and that spraying is needed, we now need to decide on what herbicide. The pasture is kept relatively short through sheep (not cattle) grazing until the thistles reach roughly 10-15 cm in diameter but no bigger. The reason the pastures are kept short is to allow the chemical to have total contact with the plant. After leaving the stock out for several days to enable the plant to freshen up with active growth, the paddock is sprayed with 0.3-0.5 L/ha of MCPA. It is then left unstocked for a period of at least 10-14 days to enable the herbicide to go through the plant. Following this period sheep can be re-introduced to the paddock with the aim of eating out the broadleaf weeds which they do most effectively providing the stocking rate is heavy enough. We find we need at least ten crossbred ewes to the acre depending on seasonal growth and seasonal conditions; in other words the better the season the more ewes are required, the drier the season the less.

In a year such as this with exceptionally high autumn growth in our area, I can see a problem in grazing numbers, and yet maybe by retarding the broadleaf weeds through herbicides and grazing, the clover species could take over and help smother the broadleaf weeds. The other way of controlling broadleaf weeds is to increase the herbicide rate aiming for complete kill, rather than depending upon stock to eat out the weeds. A problem may arise in a dry year if the broadleaf weeds are active enough to fully react to the herbicide treatment. We stagger the treatment of paddocks over time to enable stock management to be feasible. This also spreads the spraying workload and this suits the management of the farms that I run.

**Time of the year**

There is no specific weeks of the year when we undertake spraying, but in most years it occurs during June, July and August. The broadleaf weeds need to be actively growing for best results, in other words they need adequate moisture and these months are suited to active growth.

**You can over do it**

We attempt to keep herbicide rates as low as feasible to minimise damage to our valuable legumes. We find that MCPA is less damaging on clovers than 2,4-D. Decisions need to be made as to which herbicide to use on different paddocks.

In some situations, regrettably, it is necessary to use the expensive herbicide, 2,4-DB especially in lucerne dominated pastures to control Patterson's curse and saffron thistle. We find 50 L/ha of water with the herbicide is adequate and gives good results. It is possible that even lower volumes may work.

**Aids to spraying**

We find that a marking device is not necessary provided that you don't mind a few missed strips running up and down the paddock. Spraying is normally undertaken in the morning when it is easy to see the dew droplets on the pasture, and so tractor tyre marks are easily seen.

## SPRAY TOPPING

The technique is referred to as spray topping or pasture topping and is normally carried out towards the end of the spring. Once again it is important that attention be paid to grazing pressure before spraying. The annual grasses need to be kept short to enable them to come out into ear evenly as it is very important that the grasses be at the same growth stage when herbicide is applied. Therefore grazing pressure needs to be greater and careful attention during the spring flush. At a time like this, it is necessary to neglect other paddocks on the farm. These conscious management decisions have to be considered well before the spring flush.

### Time to spray grasses

Where annual ryegrass is the major problem we spray once we estimate that 80% of the ryegrass is 80% in flower. Our greatest problem is to wait long enough - have patience. We normally use from 0.25-0.5 L/ha of Roundup$^{R}$ or Sprayseed$^{R}$ at 0.7-1.0 L/ha in 50 L/ha of water ensuring even coverage of the plant.

Stock are taken out at a period when we are sure grasses are going to all come out in ear at the same time. We can put stock back in the paddock the day after spraying but usually a week or so elapses. We find the control of seed set with this technique is very good and usually we can achieve from 75-90% control.

We find that the control of barley grass is not so easy although the technique is successful. Rates of herbicide are similar however, the timing of spraying is different to ryegrass in that we spray barley grass when the middle section of the head is in the milky-dough stage. We do prefer to use Roundup$^{R}$ on barley grass as it has a wider application time. No doubt, barley grass is much more difficult to effectively control than annual ryegrass.

I have in one particular paddock, after about three years of spraytopping, replaced the barley grass with native soft brome grass. Barley grass following spraying is less harmful to sheep than if not sprayed. The seed appears to be softer and less likely to contaminate the skin.

We have tried annual grass control during winter as distinct from the spraytopping and pasture topping, techniques especially for barley grass control. The reason for spraying during winter is to get away completely from any seed problems. We sprayed Gramoxone$^{R}$ at the recommended rates and got very good barley grass control. Offsetting this we found we did lose quite a deal of grazing capacity in the paddock. The decision needs to be made between grazing and grass seed problems.

## SUMMARY

With the maintenance and renovation of pastures using spray graze and spray topping techniques we find the carrying capacity of our country is maintained at good levels. Further it is easier to manage stock on good quality pastures and few contaminating weeds makes life easier. It is important to replace our broadleaf and grassy weeds that we are killing, with suitable species, in our case, clovers and lucerne, either that or we move into a cereal cropping phase.