

## PERENNIALS IN THE PASTURE ZONE:

# MANAGING TO MAINTAIN DESIRABLE PERENNIALS

Ron Rees

Grazier,  
"Peneena", IVANHOE NSW 2878

**Abstract.** *The maintenance of desirable pasture species is a major concern of management on a Western Division property with an average annual rainfall of 270 mm and the two major soil types, red and black. Species considered include barley grass and speargrass; the important burr and barrel medics; copper-burr, grey copperburr and cannon-ball; bladder saltbush and oldman saltbush; finally bluebush. The key feature of good practice is the integration of livestock and plant management with such aims as the protection of segregating seedlings from overgrazing on the prevention of excessive defoliation of mature plants. Good management has regard for paddock size, adequate watering points, the suppression of rabbits and woody weeds and adjustment of overall stocking in dry times.*

**M**y grandfather took up a lease in the Booligal area in 1872. He bought "Bellevue", Ivanhoe, in 1902. My father took it over in 1920 and held it until his death in 1983. "Retreat", part of "Bellevue", was transferred to me in 1950. I purchased "Peneena" in 1979, and bought "Bellevue" after my father's death in 1983. The properties are located in the Western Division of NSW and are all adjoining.

Annual rainfall for the area averages 270 mm, which is sufficient if it falls at the right time. The recent pattern has been of March-June rains with little for the rest of the year. The properties comprise 48,560 hectares with black soil flood plain, accounting for about one third of the area and the rest consisting of sandy loam- limestone soil. This is a good mixture, as the red soil responds to small rainfall while the black soil has the advantage of responding quickly after heavy rain, with a big growth of burr medic (*Medicago polymorpha*). In some years the burr medic has been so prolific that some properties have been able to bale it for hay.

### FARM OPERATIONS

**W**e run 20,000 Merino sheep, 200 head of Hereford cattle and a Merino stud. These are maximum figures for a very good year. I always stock according to the feed available, and lighten off as soon as the season dries off. Merino ewes are joined for 7 weeks to Merino rams to lamb at 1st July.

Shearing starts on the last Monday in May. Marking and mulesing starts on 19 August so the lambs are healed before grass seed becomes a problem and flystrike starts. Lambs are shorn in mid- October to ease the barley grass (*Hordeum leporinum*) seed problem, but before the speargrass (*Stipa* spp.) seed starts to fall.

An important part of management for this area is to prepare for drought. Stocking rates are watched carefully and excess stock are sold as soon as the country dries off. The 1943- 45 drought was the longest I remember, 1967-68 was bad, and then the next dry time was 1982- 83. We fed the sheep wheat, oats and hay to keep them alive. Sudax was grown on an irrigation bore and fed in 1967- 68. During good seasons we grow our own hay, wheat, oats and barley and store this for drought purposes. Cattle do very well, and will survive in the lignum country until April before the lignum goes bitter during the winter.

### MANAGEMENT STRATEGIES

#### PASTURE SPECIES

**O**ur main pasture plants are: speargrass, barley grass, burr medic, barrel medic, cannon-ball, bluebush, copperburr, annual saltbushes (several varieties) and old man saltbush.

**Barley Grass (*Hordeum leporinum*):** Prior to 1960, barley grass was not a major problem in the

Ivanhoe area. Barley grass has spread into the red country in the last 15 years. About 1978-79 a grub went through the area, killing a lot of bluebush. Now the barley grass has spread into this area and grows amongst the bluebush where it never grew before. This grass has good feed value, but stock have to be managed through the seed phase by keeping them in speargrass areas until the seed has fallen, then moving them back to the barley grass where they will then eat the fallen seed. However, during the last 3 years with exceptionally good autumn rains the seed hung on longer and the speargrass seeded earlier, so the sheep were left in the barley grass dominant paddocks. Tracks were graded through the grass to watering points to facilitate stock movement. My experience is that the sheep are best left to make their own way around the paddocks. The lambs suffer badly with the seed having to be removed from their eyes.

**Speargrass (*Stipa variabilis*):** Rain in autumn will get the speargrass off to a good start. Heavy growth occurs mainly in the red country, but if heavy rain falls speargrass will also grow on the black country. If possible we keep the stock out of the speargrass, but if this isn't possible tracks are also put through to watering points.

**Burr medic (*Medicago polymorpha*) & Barrel medic (*Medicago truncatula*):** These legumes are our main source of feed. Stock eat both plant and seed, with the seed producing a great standby during drought. Barrel medic has been introduced to some paddocks, but its spread has been slow. During the last grasshopper plague, the bulk of plants were eaten before seeding which resulted in up to 2 kg lighter wool cuts at shearing.

**Copperburr (*Bassia brachyptera*):** A common pasture plant which is useful in trapping wind-blown soil and seed in its woolly stems and helps the growth of plants on claypans. Stock seem to like it.

**Grey copperburr (*Bassia diacantha*):** This is probably the most valuable of the copperburrs found in this region. It is not a long lived plant, and although seedlings are common, they are susceptible to overstocking which has wiped the plant out in some areas. It is a very valuable plant in dry times and has a high nutritional value. It helps in combating erosion on otherwise bare soils and it affords shelter in which seedlings of less hardy species can establish. One good point about this plant is that kangaroos don't like it. There are several varieties of copperburr growing in the area and the best feature of all of them is that they help stabilise and reseed claypan areas. I try to keep stock off these areas when the seedlings appear; this helps to regenerate the area.

**Cannon-ball (*Bassia paradoxa*):** This is a common species but plants don't live very long and abundance varies from year to year depending when rain falls. Stock will eat it when there aren't any more palatable species.

**Bladder saltbush (*Atriplex versicaria*):** This plant is relatively long lived and grows well, with prolific seeding in good seasons. It has a high degree of drought resistance. Again very heavy grazing of this plant should be avoided because where only a very few leaves remain the plant is likely to die out. It is also a successful plant for revegetation of clay pan areas.

**Oldman Saltbush (*Atriplex nummularia*):** This plant can survive severe drought and will also tolerate shallow flooding for lengthy periods. It is best used with heavy stocking followed by a rest period. It is easily established by direct seeding and from cuttings. I have only one paddock of old man saltbush which is managed in much the same way as for other species. Regeneration is slow, and in my case there hasn't been any real marked regeneration over the years.

**Bluebush (*Maireana pyramidata*):** This is a good standby during dry times because a shower of rain freshens it up and the sheep will eat it. Bluebush paddocks are also good during our winter shearing, as they provide excellent cover for shorn sheep. There are various other types of bluebush, but this the most common in our area.

## GENERAL MANAGEMENT

**P**rior to 1946 many properties were very large, up to 210,000 ha and therefore difficult to manage. These properties were split up into 16,200 ha holdings after the war. After 1950 we split large paddocks up into 800-1,200 ha and put in more watering points. Neighbouring properties have less water. They put more pressure on their country around watering points. Small species don't get a chance to regenerate as they are walked into the ground. The number of sheep kept in a paddock varies from 350-600-1000 depending on the size of the paddock and the type of feed growing in that paddock.

**Claypans:** were extensive in the early years, but are now almost grown over. Prior to 1946 my father ploughed furrows in an east to west direction, then crossed these furrows from north to south, possibly at 50-100 metre intervals, with great success as treated areas grew over by 1950.

**Rabbits:** During 1957-58 we ripped our rabbit warrens with a 3ft ripper on the front of the D6 as rabbits probably caused 75% of the droughts from 1900-50. Last year we ripped warrens on "Peneena" (bought 1979). We could see the difference in these areas with more feed growing after rain. After 30 years only 5% of warrens have opened up.

**Kangaroos:** Kangaroos are a big problem on our holdings. As soon as there is a shower of rain they move in, in their hundreds. No paddock can be spelled as the roos will eat it out before the sheep go in. I have counted 1,000 kangaroos in a 1,600 ha paddock. The kangaroo population is vastly underestimated; we need less control from government departments to solve this major drain on forage resources.

**Woody Weeds:** In 1950 we had about 200 ha of woody weeds, now we have 6,000 ha of turpentine (*Eremophila sturtii*), hopbush (*Dodonaea attenuata*), and punty bush (*Cassia eremophila*). We use Velpar<sup>(R)</sup> on the light infestations, and have ploughed 400 ha with a blade plough. This has been an excellent way of getting rid of woody weeds. The contractor pulled a 5.5 m plough with a 270 kW 4 wheel drive tractor averaging 8 km/hr at a cost of \$30 per ha. Previously, we never had any feed on this country, but after ploughing and the good rain last year, the feed grew with plenty of burr medic amongst other species.

We also used a rope between two tractors. This wasn't very successful because it removed large bushes and left the small ones, but we did get feed amongst the bushes.

A landcare Group has been formed in this area, and has proved very successful. The main project last year was ripping rabbit warrens. Woody weed control is also a high priority.

## RESEARCH AREAS

Further research should be carried out on the selection of legumes (eg. clover, medics) and palatable grasses suitable for pasture improvement in this harsh environment.

Control work is being carried out on woody weeds, but other problem species like ward's weed (*Carrichtera annua*), needs more research.

## REFERENCES

- Cunningham, G.M., Mulham, W.E., Milthorpe, P.L., and Leigh, J.H. (1981) "Plants of Western New South Wales", NSW Government Printing Office in Association with Soil Conservation Service of NSW, Sydney, 766 p.