Productivity boost: high quality fodder from saline land

Case study: Ken Shone
Location: Beeac, Victoria
Area: 220 ha
Average rainfall: 550 mm
Enterprise: Dryland dairy milking 210 cows, Jersey/Friesian cross

Photos: Jo Curkpatrick

Ken Shone's dairy herd produces high quality milk on well-managed tall wheatgrass and clover pastures.

Tall wheatgrass has often been criticised by farmers and advisers for producing poor quality feed, but when it is all you have to work with, you make the best of the situation.

Ken Shone farms on salt-affected land using pastures dominated by tall wheatgrass in a marginal dairying area at North Cundare near Beeac, in south-west Victoria. He has shown that it is possible to produce high quality fodder from saline land and produce high quality milk from his 210 cows. The proof is in the numerous quality awards he and his share farmer have received for their milk every year since 1994 when the awards began.

As Ken describes to *Jo Curkpatrick*, the key lies in the way the pasture is managed and has little to do with the plant's characteristics.

"We first tried tall wheatgrass in the late 1970s in plots sown by the Department of Agriculture. It spread and did quite well, so we decided to sow it across the paddock in 1985, mainly to tackle salinity," he said.

"The first paddock was sown with just tall wheatgrass. I would have to admit it wasn't well managed; it grew wild and rank and the cows didn't like it. But it was better than bare ground and sea barley grass.

"In later sowings we set out to boost the protein levels with clover. The paddocks were sown with tall wheatgrass, tall fescue, balansa clover, strawberry clover and Persian clover, using direct drilling, combined with DAP fertiliser applied at 60 kilograms per hectare.

"What we found was that unless we kept the tall wheatgrass down, the clovers couldn't compete. When we did manage the grasses we produced a better grazing mixture and could start to think about hay and silage."

In 1994, Ken began to include the paddock in the normal grazing rotation. At about the same time the first trials with making silage from the pasture were carried out. A nutritive value analysis was undertaken and the tall wheatgrass silage samples were found to have high feed values, not too different from ryegrass samples.

Key points

- Quality milk production is possible from saline land
- Careful management of tall wheatgrass is essential for a quality pasture, including strategic grazing, mowing and mulching if necessary
- Tall wheatgrass can provide high amounts of good quality feed at a time of year when green feed is scarce
- Tall wheatgrass can be conserved using conventional fodder conservation methods, including silage.

Above: Ken Shone compares unmown tall wheatgrass with mown, showing the value of pasture management in insuring the grass does not grow tall, rank or unpalatable.

Below: Clover and tall wheatgrass after grazing.

What had changed for Ken was the management focus. The silage had been conserved from a pasture that had been managed for forage production, whereas previously management was aimed at salinity control.

The analysis of silage, hay and green pasture samples taken from tall wheatgrass-based pastures on Ken's and another property in the area has continued each year since 1994-95 and the results have consistently demonstrated that high quality feed can be produced with careful management.

In October 1997 feed test results for green pasture indicated energy values between 10.1 and 11.6 megajoules per kilogram of dry matter (MJ/kg DM). The crude protein (CP) ranged between 13.9 and 19.6 per cent of dry matter (DM), indicating that the pastures could be used as the major source of dry matter in a lactating cow producing 20 litres of milk per day.

January 1998, results produced energy values exceeding 8.6 MJ/kg DM while the crude protein ranged from 12.3 pc to a high of 15.9 pc. These results indicate that the hay and silage is adequate as a supplement to lactating or dry cows.

Energy and crude protein levels in tall wheatgrass begin to decline as it enters the reproductive stage, but as Ken says in the summer, the tall wheatgrass was the only source of green feed on the farm.

Ken keeps the tall wheatgrass grazed hard so that it remains green and leafy and doesn't develop the tussocky growth it is known for.

"We cut it for silage towards the end of September or early October," he said. "In the paddocks not cut for silage we use a mower or mulcher where necessary to handle any rank growth. You have to cut it just above the crown and keep it above the clover. It's not top silage, but it's better than barley grass and for what we've got, it's an excellent product."

Ken hasn't been able to utilise lucerne to a large degree because his farm is on limestone and the plant's roots cannot effectively penetrate the soil.

Ken has found that by strategically cutting the tall wheatgrass for silage he isn't spreading seed around. The seed heads remain soft and palatable and don't set seed.

"When you cut it for hay you are limited to where you can feed it, but it isn't really good hay anyway," he said.

In Ken's circumstances, if the tall wheatgrass begins to spread across the paddock he isn't too worried - it means less bare ground and he reckons it can be controlled in the areas it isn't wanted.

"When you look at what we had and what we've got now there has been a big difference," he said. "Twenty years ago there was bare ground and today it is grassy and productive."

• Jo Curkpatrick, NDSP Communication Co-ordinator (Vic) spoke to Ken Shone and Frank Carland from the Victorian Department of Natural Resources and Environment.

1994	Dry matter %	Digestibility %	Metabolisable energy MJ/kgDM	Crude Protein %
Tall wheatgrass	40.5	64.7	9.0	10.5
Ryegrass/clover	48.5	69.9	9.9	16.2
Project average	44.9	67.1	9.4	15.3
1995 (a good clover year)				
Tall wheatgrass	49.9	67.0	9.4	14.1

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