

# ON THE FARM - THE GOOD DIRT

MAY EDITION

## Multiple Measures of Soil Health



*David Freeman carefully inspects a Merino fleece before weighing and recording*

Running a fine wool Merino property of 1600 hectares and 3000 ewes is enough of a challenge for one man: acid soils, serious salinity issues and areas of steep exposed hills simply added to the problems David Freeman faced when he took over management of the farm in 1988.

'Kulaba' is in the Whitehead's Creek valley near Seymour. One of David's first actions to address these problems was to apply lime at the rate of 200kg per hectare to help correct soil pH, which was in low fours in calcium chloride (CaCl<sub>2</sub>). The pH(CaCl<sub>2</sub>) is now 4.5 – 4.9 and David maintains a program of lime application.

Measures of soil health come in many forms. David likes to note changes on 'Kulaba' in different ways and talks about the increase in bird life that has come with more ground cover, native grasses and more tree growth. He is delighted that "in the last survey we counted 38 species of birds."

Compaction is another measure David uses to test soil health. "We just don't realise how much stock compact the ground," he says.

He uses a homemade penetrometer to assess the 'softness' of the soil. This device allows him to detect the depth of the hard pan

below the topsoil, and he sets his Yeoman's plough to break the pan but not so deep that it brings up nutrient poor subsoil. With the pan broken roots can penetrate further and organic material can filter into the lower reaches of the soil. Additionally, more moisture can enter and the denser root activity creates tiny pathways for water and air to move into.

An early initiative on 'Kulaba' was to move into rotational grazing and David created paddocks of 20-30 hectares. Giving grass longer to recover after grazing has increased plant vigour and resistance to drought. Not only does the pasture benefit but the effect on the wool clip is plain to see in the carefully documented records that David keeps of wool weights and micron counts.

Creating perennial pasture was a prime goal when David set out to improve the farm, and now the pastures of phalaris, cocksfoot and native grasses are well established. The establishment of perennial pastures reduces the risk of nitrate leaching below the root zone in summer, a major cause of management related soil acidification.

Microlaena grows on the steeper hill areas where land class fencing enables careful grazing, and this native grass provides a nutritious late summer feed. Wallaby grass is abundant and kangaroo grass cover is increasing after many years of heavy grazing. Because native grasses are well adapted to low soil fertility, inputs such as superphosphate can be reduced on less productive hilly areas.

David maintains an active program of pasture regeneration. "It is important," he emphasises, "to prepare for sowing of new pasture two to three years ahead. A couple of years of annual rye grass gets rid of the broadleaf weeds and then the soil is ready for sowing for clover and hardy perennials such as phalaris." David's careful management of his soil and stock and long-term commitment to the natural resources of 'Kulaba' has paid handsome dividends in both production and environmental outcomes.

### WHAT'S ON

19th May	'Greater than Gold' soil health field day with Gwyn Jones, 10am-3pm BYO lunch and chair	Costerfield Hall and site walk	RSVP Amanda McClaren 5794 9279 amanda_mcclaren@hotmail.com
22nd May	Soil test interpretation workshop	Tatura	Info Vanessa Campbell 5824 5525

### FURTHER INFO

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