

**Trees.** Arthur usually plants 4000 trees each year. These are used for shelterbelts, erosion control and farm forestry and except for the latter, he plants indigenous species.

Refer to figure 9 and notice the controlled flow in the stream where the water is clear and protected from livestock. Contrast this with figure 10 which is the same stream on the other side of the road. The latter shows muddy water containing debris and an eroded bank

**Market.** Until recently the 200 kg vealers have been sold on the conventional market. The deer have been sold to a restaurant market. The Morrells now plan to join the Three Rivers Alliance which is attracting a premium for organic and biodynamic meat.

*Sparkling* may not be a scientific term but that's the impression this author had

### CASE STUDY: PRIME LAMB

What a first impression! Maybe it was the season but maybe it was something more because the pasture on this property, green and sparkling after rain, was strikingly different to others in the district. Debbie and Jim Milne are *Demeter* certified biodynamic prime lamb producers at Euchareena north of Orange in New South Wales.

The average annual rainfall is 630 mm and the soils range from alluvial creek flats to light shale over the 300 ha property.

Figure 11: Jim displays his well structured soil supporting the rich pasture. Earthworms are present.



### The pastures

Arable areas have a pasture mix of clovers, rye, chicory, lucerne and phalaris. The balance is red grass and other natives with some introduced clovers. A fair percentage of the property has been Agroploughed® to assist in improving soil structure. This type of ploughing allows aeration, better water infiltration, improved microbial activity and root pruning and encourages roots to grow to a greater depth.

As much of the property as possible is sprayed with biodynamic preparation BD500 after the autumn break each year. The preparation is bought-in and sprayed late in the afternoon, at night or on a day of drizzling rain.

Jim has made his own spray cart with ideas from a series of different models. The latest version, converted from an old ute chassis, is ground driven through a gear box to a diaphragm pump. The boom sprays a six metre width about two metres above the ground and is designed to move through gates and over rocks and fallen timber.

Figure 12: Dorpers



### Sheep

White Dorpers have been selected for the prime lamb enterprise as they are an easy care, self replacing breed. A cross breeding program is presently in place to breed up numbers. Merino, Border Leicester x Merino and White Suffolk ewes are being used in the program. The property runs 500 ewes, 150 hoggets and 500 lambs.

### Other livestock

20 head of cattle and 70 does, 50 hoggets and 50 Boer goats also run on the property. This composition of livestock helps to keep pastures balanced. The Dorpers are also proving to be a non selective grazer eating weeds and roughage.

### Carrying capacity

The average size of a paddock is 25 ha. Carrying capacity is now 2.5 DSE which compares favourably with 1–1.5 DSE on similar soil and site conditions in the district. Paddock size has been reduced and tighter paddock rotations have been adopted to help combat internal parasites. However, Debbie and Jim believe that good husbandry and proper nutrition is the answer to worm control without chemical drenches.

All enterprises are biodynamic

DSE means *dry sheep equivalent* and is used as a standard to compare stocking rates

Like a recipe for rejuvenation

### Supplements

Livestock have access to approved lick block mixtures to maintain good health. The Milnes have found that most health problems are caused by nutrient excess or deficiency. Although lice have never been a problem on the property, sulfur is the key to control external parasites. Both sulfur and copper are important for the growth of wool, hair, hooves and horns.

Access to dolomite, copper sulfate, sulfur and seaweed has improved wool growth, lambing percentages and general health. The Milnes have noticed that since the sheep have had access to these blocks, adult sheep bound around the paddocks like baby lambs.

A nutritional drench given before joining or lambing improves both joining and lambing percentages. The drench, which is a mix of apple cider vinegar and copper sulfate, increases the potassium and copper levels associated with the improved percentages.

### Pests and disease

The Milnes have found that with an increase in copper, the sheep can better tolerate worms.

Flystrike has proved to be a major hurdle and one of the reasons for switching to white Dorpers. All Merinos and Crossbreds are mulesed. Sheep are crutched twice a year to avoid breech strike. Sheep with areas of bodystrike are trimmed and treated with pyrethrum or eucalyptus oil. All animals with bodystrike are culled.

Jim used to spray a coconut and eucalyptus mixture for lice in cattle. In recent times there has been no lice problems and so he hasn't sprayed.

### Quarantine paddock

The quarantine paddock is a small paddock to detox (get rid of chemicals from) stock that have been bought into the property. This also helps with any imports of disease or weed seed.

If stock required treatment with unapproved substances, for example penicillin, they would also be isolated and sold through the conventional marketing system.

### Special management

Debbie explained that special management issues were probably greater in the earlier stages of converting to Biodynamic production than they are now. They don't monitor their stock any more or less than they did before converting.

They recommend that growers act to **prevent** diseases and pest problems: keep stock healthy. One change is that they now crutch twice per year to help reduce tail strike.

With regard to weeds there have been two changes: learning to tolerate them and improving soil health so much that heavy infestations are reduced.