SUBTERRANEAN CLOVER RESIDUES AND THE NUTRITION OF SHEEP IN SUMMER

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Under irrigated conditions on the heavy clay soils of the Riverina, seed burial by the commonly used cultivars of subterranean clover is negligible (Myers and Squires 1968). Yields of above-ground, and therefore readily accessible, seed often exceed 300 kg/ha. In addition, a large amount of dry standing feed is carried over into the summer. Actual field assessments of intake of clover burr by grazing sheep have yielded variable results, but generally have thrown doubt on the value of burrs in the summer nutrition of sheep.

The value of dry subterranean clover residues was assessed in two experiments at Deniliquin on irrigated annual pastures. The first was to determine the effect of subterranean clover seed content of pasture residues on mean daily intake of seed and on liveweight changes in Merino wethers. The second experiment was to assess the nutritive value of the component fractions of dry pasture residues.

Clover seed yield was directly related \( (r=0.94, P<0.05) \) to yield of herbage dry matter in November and was a function of stocking rate which varied from 12 to 25 sheep/ha. Seed yields (above ground) ranged from 120 to 790 Kg/ha. Liveweight of the sheep were related to estimated intake of clover seed over the 60 day period December 14 to February 15. All sheep lost weight but the amount of loss ranged from 2.3 kg to 10.2 kg/sheep. The lower weight loss was associated with a clover seed intake of 750 g/day.

When the components of the dry residues were fractionated and fed to sheep in the field those receiving only clover burr lost weight (1.9 kg) while those receiving tops only or whole dry residues (tops+burr) gained weight (0.7 kg and 7.8 kg respectively). A feature of the weight change in sheep on burr-only was the slow rate of decline which contrasted sharply with the violent fluctuations in weight change of the sheep on burr-free residues. This implies a self-rationing of clover burr which ensures that even when seed yields are high the rate of intake is regulated.

Consumption of subterranean seed reaches high levels on irrigated pastures where seed burial is minimal and despite its low digestibility (50%) and high rate of passage through the digestive tract (Wilson and Hindley 1968) it contributes significantly to the summer nutrition of dry Merino sheep. Dry clover tops seem to be at least as important as pods and seeds both as a feed and as a protein supplement.


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