Silages are receiving attention as an alternative to grazed pastures for livestock in the irrigation area of Northern Victoria, partly due to the large amount of dry matter (DM) per hectare that can be produced from forage crops such as maize and sorghum. A study was carried out to compare the utilization of silage-based diets by three classes of livestock, i.e., lactating cows, dry cows and wether sheep.

Eighteen animals (six per livestock class) in metabolism cages were offered three diets supplemented with urea (1.3%) and minerals (1.0%), viz. maize silage (MS) alone; MS plus lucerne (33%); MS plus lucerne (15%) plus wheat (50%). Feed DM intake (VFI), water intake, urine output, and diet DM digestibility were measured. Preliminary results are shown in Fig. 1.

FIGURE 1 Digestibility and intake of maize silage-based diets by lactating cows, dry cows and sheep

DM digestibility (DMD) of MS alone was similar for lactating cows (60%), dry cows (63%) and sheep (63%), whereas VFI was greater in the lactating cows (53 g/kg\textsuperscript{0.7}) than in the other animals (44 g/kg\textsuperscript{0.7}). Addition of lucerne to the diet improved diet digestibility in the sheep (DMD, 67%) and also stimulated VFI in the lactating cows (70 g/kg\textsuperscript{0.7}). MS plus lucerne plus wheat increased the digestibility of the diet in all classes of livestock; lactating cows (69%), sheep (72%), dry cows (75%). This was accompanied by a decrease in VFI in the sheep (43 g/kg\textsuperscript{0.7}) and dry cows (34 g/kg\textsuperscript{0.7}) whereas the lactating cows maintained the same VFI (70 g/kg\textsuperscript{0.7}) as on the MS plus lucerne diet. Conrad et al. (1964) found a similar decline in VFI once the digestibility of the diet was greater than 64%, but noted that the critical DMD value above which VFI declined depended on the caloric density of the diet and the productive status of the animal.

The intake of digestible DM in the lactating cows increased with dietary quality, but this was not associated with corresponding increases in milk yield. There was no marked intake response in the sheep and dry cows when they were offered the better quality diets.