RESPONSE TO SALT AND SULPHUR BY CATTLE GRAZING SORGHUM

K.A. ARCHER and J.L. WHEELER

Sheep grazing sorghum forage have been shown to respond to sulphur (Wheeler, Hedges and Till, 1975) and sodium (Wheeler, Said and Lindstad, 1978) supplements. At Glen Innes, N.S.W. in 1976 three groups of steers grazing forage sorghum were given no supplement, salt blocks or salt + 18\% sulphur. There was a strong trend for liveweight gain to be increased by the latter treatment but flood rains reduced the experiment to 38 days and the effects were not statistically significant.

In 1977 the experiment was repeated using three groups of eight Hereford steers that weighed initially 205 kg. One group had no salt lick, one was given salt alone and one salt + 18\% sulphur. The three groups (and their respective supplements) were moved weekly for 12 weeks through three 3 ha plots of well-fertilized sorghum-sudangrass (Sudax SX 6). Two further groups of steers grazed natural and improved pastures nearby at low stocking rates.

Intake from blocks averaged 12.6 g Na/head/day by the salt-only group and 11.3 g Na plus 6.3 g S/head/day by the salt + sulphur group. Liveweight gains (g/head/day) were: No lick, 659; salt, 781; salt + sulphur, 856 (LSD.05 = 104, LSD.01 = 141). Over the grazing period the composition of the forage available (means and ranges on a DM basis) was %N, 1.37 (0.6-3.03); %S, .107 (.06-.17); %Na, .007 (.004-.014) and %HCN, .024 (.01-.07). Sodium contents of this order (which we find are not uncommon in forage sorghum) provide substantially less than the recommended daily intake of this element for such cattle (A.R.C. 1965: Aitken, 1976). Considering the sulphur required for detoxication of HCN (1.2 g/g HCN) the mean effective N:S ratio in the diet was 17.5:1 which is close to the optimum of 15:1 suggested by Bird (1974).

By comparison the groups of cattle on unimproved pasture gained 478 g/d and those on good grass/legume pastures gained 917 g/d.

The sulphur and sodium content and the HCN potential of sorghum forage varies with location and fertilizer treatment. Daily gains by cattle grazing sorghum are often only moderate or poor and our results suggest further regional studies of responses by such cattle to sulphur and sodium.


* N.S.W. Department of Agriculture, Agricultural Research Station., Glen Innes, N.S.W. 2370.
** CSIRO, Division of Animal Production, Pastoral Research Laboratory, Armidale, N.S.W. 2350.