

## UREA-MOLASSES SUPPLEMENTS FOR BEEF HEIFERS GRAZING WHEAT CROP STUBBLES

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The provision of urea to beef cattle grazing dead summer-autumn pastures and cereal crop stubbles in southern Australia continues to be a controversial topic, since although research results cast doubt on the practice (Round et al 1978), farmer interest remains high. Undoubtedly some of this interest stems from the spectacular success of urea supplementation in many areas of Queensland where prolonged seasonal grazing of dead native pasture leads to very high liveweight loss and mortality in unsupplemented cattle. By comparison, in all but drought years in southern Australia, seasonal liveweight loss in which nitrogen deficiency is implicated generally only occurs over 1-3 months. The value of urea supplements supplied to beef cattle grazing a cereal crop stubble on a property was investigated.

Fifty-four unmated Poll Hereford heifers,  $367 \pm 41$  kg live weight, were randomly allocated within liveweight strata to six equal plots in a 42 ha paddock of wheat crop stubble (0.35% N and approximately 3 t DM/ha), situated near Spalding (446 mm annual rainfall), 150 km N of Adelaide. Two treatments, replicated three times (nine heifers/plot) consisted of (1) nil supplement and (2) a commercial liquid supplement of (w/w) 27% molasses, 5.1% urea, 0.23% sulphur (S) provided in roller-drum lickers (Davian Pty. Ltd.). All cattle had access to a powdered mineral lick. Grazing continued for 81 days during February to April.

TABLE 1 Growth rate and condition assessment score of heifers grazing wheat stubbles with urea-sulphur(S) supplement

| Supplement         | Liveweight gain kg/head/day |                     |                     | Condition score + |        |
|--------------------|-----------------------------|---------------------|---------------------|-------------------|--------|
|                    | Days 1-45                   | Days 46-82          | Days 1-82           | Day 1             | Day 82 |
| 1. Nil             | - 0.25                      | - 0.27 <sup>a</sup> | - 0.26 <sup>a</sup> | 3.7               | 2.5    |
| 2. Molasses-urea-S | - 0.18                      | - 0.03 <sup>b</sup> | - 0.11 <sup>b</sup> | 3.8               | 2.4    |
| L.S.D. (P<0.05)    | ns                          | 0.14                | 0.12                | ns                | ns     |

Means in columns with different superscripts are significantly different (P<0.05)  
+ Condition score 1 denotes very lean, 3 moderate and 5 fat

Supplementation with molasses-urea-S significantly reduced liveweight loss but had no effect on subjectively assessed body condition (Table 1). The supplemented heifers consumed 370 g molasses, 70 g urea/head/day. Temporary availability of green pick in weeks 5-6 was associated with reduced intake of supplements. The treatment effect can be largely explained by the energy content of the molasses consumed.

The high cost of molasses in southern Australia (approximately 17¢/kg) makes this form of supplementation increasingly difficult to justify and there is currently an increased farmer interest in providing urea-trace elements through the drinking water, following recent developments in this field. Unfortunately, the significance of seasonal moderate liveweight loss on productivity of the breeding beef herd has not been well quantified. This makes it difficult for farmers to decide the likely benefits of various supplementary feeding options.

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