

## Urea roller drum mixes for cattle

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#### Warning

Drought increases the risk of unacceptable residues in stock. Risks include contaminated feed, increased intake of contaminated soil, concentration of existing residues as animals lose condition, and many other causes. Refer to Primefact 312 *Drought increases residue risks* for details before purchasing stockfeed or making feeding decisions.

### Introduction

Roller drums are used to supply limited amounts of urea to stock to improve dry feed utilisation. Roller drums do not supply enough nutrients when feed deteriorates in quality or quantity and generally do not supply enough nutrients for late pregnant or lactating cows.

Urea is a non-protein source that is partly converted to animal protein by the micro-organisms in the rumen of a beast—at lower cost than conventional protein sources. Such protein will help maintain bodyweight and therefore aid survival when dry stock are grazing low quality dry feed in a drought situation.

Urea is a white pelleted fertiliser containing 46% nitrogen. It is available from feed merchants or fertiliser agents in 50 kg bags. Prilled urea should be used as it dissolves better than granulated urea.

Urea is toxic to stock if consumed too rapidly, so intake should be limited to approximately 60 g urea/head/day.

### Caution

- Do not confuse with fortified molasses mixes (see Primefact 271 Fortified molasses mixes for cattle).
- Roller drum feeding of cattle is only suitable for early drought phase situations when ample dry feed is available.
- If cattle are allowed to drink this mixture they will die. This mixture is poisonous.

### Urea toxicity

If fed to excess or introduced too rapidly, urea can be toxic and cause stock death. Sixty grams per head per day is the maximum intake of urea recommended.

The risk of urea toxicity will be greatly reduced by:

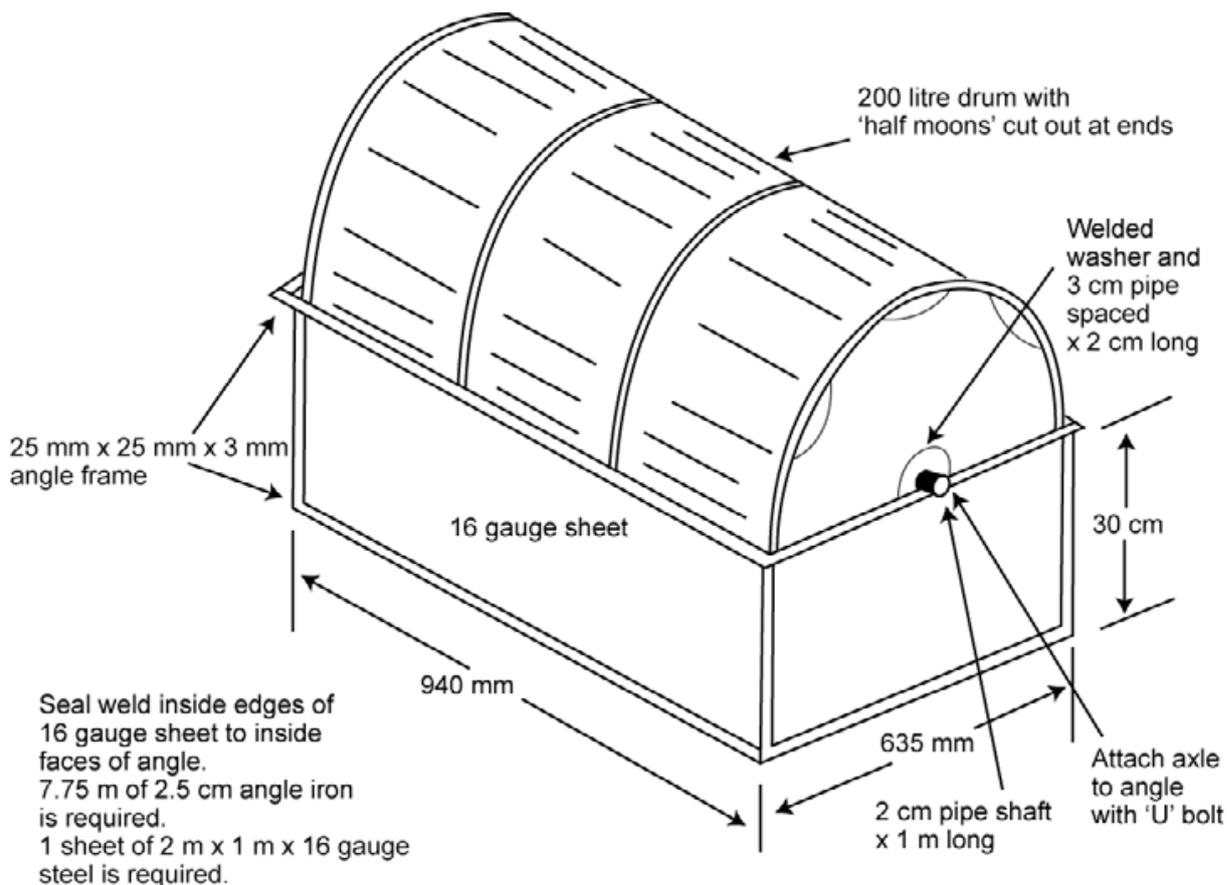
- access to a dry mix of equal parts of phosphorus supplement and coarse salt for a week or so before the introduction of the urea supplement. This will satisfy the deprived appetite of phosphorus-hungry stock, particularly on the coast;
- thorough mixing of all ingredients to prevent 'pockets' of urea;
- covering or removing blocks and dry licks during rainy weather.

### Just in case!

- Symptoms of urea poisoning are:
  - increased respiration
  - nervous excitement and incoordination
- bloating and salivation



Figure 1 Pattern for urea molasses drum roller



### Remedy

Seek urgent veterinary advice, but in an emergency:

- Drench immediately with 4 L vinegar to reduce absorption of urea.
- If symptoms aren't as severe, drench with 0.5 L water: 0.5 L vinegar : 1 kg sugar or molasses.

Because poisoning occurs so quickly, treatment is often too late and therefore ineffective. Treated animals should be kept under observation and a further treatment given if no improvement is evident within 10 minutes or so. A relapse can occur several hours after initial symptoms and will require further treatment.

### Roller drum feeder

Roller drum feeders have proven the safest and cheapest method of feeding urea to cattle. Stock lick the revolving roller drum to obtain a urea/molasses/water mix. Care must be taken to ensure that stock cannot drink the mix.

Fixed drum rollers consist of a drum on a welded axle, revolving in a trough only slightly larger than half the drum itself. Slots or holes are cut in the ends of the drum to give storage capacity. This type

of feeder is considered the safest and most suitable. Floating drum feeders can corrode and the float drum may sink, giving stock access to dangerous amounts of the mixture.

Polythene and fibreglass roller drum feeders are available commercially and are very good. If you wish to make your own roller drum feeder, this can easily be done in the farm workshop. The design

shown below uses a 200-litre drum and will hold about 150 litres of lick mixture. This should last 30 head for about 10 days. A small amount of liquid left in the roller drum may be useful as ballast; too much may hinder the turning of the drum.

### Notes

- Drums should be sited near water points or cattle camps, allowing one lick per 30–35 head. Straight molasses poured over the roller drum will attract stock to the feeder when first starting.
- Fermentation of the mix, which can happen during hot weather, can be prevented by placing the roller drum in a shady area and by adding 3 kg of coarse salt to the mix.
- After use, the lickers should be dismantled and thoroughly washed, and all metal parts coated

with oil. If the molasses/urea solution is not removed, it will rust metal. Storage tanks can be coated with epoxy preparation to prevent corrosion

### Lick mixtures

No. 1	No. 2	No. 3
Water: 100 L	Water: 100 L	Water: 100 L
Molasses: 100 L	Molasses: 50 L	Molasses: 30 L
Urea: 15kg	Urea:15kg	Urea: 15kg

Start with No. 1 mix for a week or so, then change to No. 2 mix, then to No. 3. If stock are consuming too much of the No. 3 mix, reduce the amount of molasses and increase the amount of water, so that stock will consume no more than 60 g of urea per beast per day. Each mix should last 30 head of stock approximately 10 days. Stock that have been supplemented with roller drums before can start on mix No. 2.

### Method of mixing

For urea roller drum mixes, first dissolve the urea in hot water before mixing with the molasses and the remainder of the water.

Mixing is made easier if the water and the molasses can be heated, and the mixture agitated, perhaps by pumping.

### Further information

For further information see Drought feeding and management of stock  
<http://www.agric.nsw.gov.au/reader/drtfeeding>, or contact your nearest NSW Department of Primary Industries Livestock Officer (Beef Cattle).

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