THE IMPORTANCE OF PHOSPHORUS IN DRY SEASON SUPPLEMENTATION

As a general rule the feeding of phosphorus has become well accepted over the wet season across northern Australia. However over the dry season there has been a trend with some cattle producers to feed urea supplements containing little or no phosphorus. Unfortunately this practice reduces the potential benefit of urea supplements in the dry season.

Recent trial work from South Africa ***** has demonstrated the important role of phosphorus in dry season urea supplements. In this five year trial, cows were grazing sub-tropical pastures characterised by summer rainfall and dry winters, similar to pasture conditions in Queensland. The cattle were fed dry season and wet season supplements. The dry season supplements contained urea, maize and various levels of phosphorus while the wet season supplements contained various levels of phosphorus.

Trial Results:

Measurements included the breeders condition score at critical times of the year and the phosphorus content of the cow's bone that is regarded as a sensitive measure of phosphorus status. The following table outlines the major findings of the trial.

P Supplement Treatment		**Condition Score – Early Wet**	**Phosphorus Status**
Wet Season	**Dry Season**		
High P Supplement	High P Supplement	2.3	Good
High P Supplement	Nil P Supplement	1.9	Poor
Medium P Supplement	Medium P Supplement	1.9	Good
Nil P Supplement	High P Supplement	1.9	Moderate
Nil P Supplement	Nil P Supplement	1.0	Very Poor

High P Supplement = phosphorus fed at approximately 8 – 9 g/head/day
Medium P Supplement = phosphorus fed at approximately 4 – 5 g/head/day
Dry season supplement = above maintenance for a dry cow.

Condition score based on a scale of 1 to 5.

Cows were control mated and managed so that they were dry and pregnant during the dry season. They calved during the late dry, early wet and calves were weaned early in the following dry.

******de Brouwen et al. "Phosphorus supplementation to natural pasture grazing for beef cows in the Western Highvel region of South Africa". SAJAS 2000, 30(1).*

Major Findings – Importance of Phosphorus Supplementation in the Dry Season

- The trial results show the importance of dry season P supplementation. In the treatments where medium or high levels of P were supplemented during the dry the P status of the cow was moderate to good and condition score was close to the threshold value of 2.0 that is considered appropriate for cows that are about to be joined. These results demonstrate the importance of P supplementation over the dry season allowing the cows to re-mineralize their bones after drawing down heavily during lactation.
- A supplementation program where by breeders receive about 4 to 5 g/head/day of P during both the wet and the dry produced similar results to high supplementation levels in both seasons.
- In this trial it was critical to the dry season response that the cows were fed an above maintenance supplement which complimented the P fed. Without the protein and energy in the supplement the effectiveness of the P supplement was questionable.
- When ever P was not supplemented during the dry season, the cow's P status was poor to very poor as they entered the calving period. In fact in this trial some cows that were not supplemented with P during the dry died from emaciation and one had to be destroyed because of broken bones. The remaining animals in this group displayed the classic symptoms of P deficiency such as peg leg, emaciation, coarse hair and overgrown hooves.
- The recovery of the animals was dramatic once P supplementation was introduced after the trial had finished.

Implications for Northern Australia – Year Round Supplementation of Phosphorus

- A strategy of supplementing with Phosrite® during the wet and Uramol® during the dry will maximise phosphorus intake on a year round basis ensuring skeletal P levels and P status is maintained at a productive level. Phosrite® contains 5% P and at recommended consumption rates will provide 5g P/head/day. Uramol® contains 3.6% P, the highest phosphorus content of any 30% urea block on the market.
- Entering the main calving period with low body/skeletal P reserves is going to have a major effect on the cow's ability to lactate. This could have a dramatic effect on calf growth rate, and more particularly on the cow's ability to regain live weight and thus be in a position to ovulate during the wet and so get in calf again.
- It is critical that cows be doing slightly better than maintenance when fed P during the dry season. Supplementation with Uramol® will enhance the prospects of this occurring and at the same time provide the cows with P. P fed to cattle that are losing weight can exacerbate live weight loss.

Uramol®

- Proven performance for over 30 years
- 30% urea block
- Unique hard formulation
- Economical to feed
- Safe and convenient
- Suitable for all classes of cattle
- 3.6% Phosphorus

PHOSRITE®

- Weather resistant phosphorus block
- Requires no shelter
- Improve herd fertility
- Easy and convenient to feed out
- Convenient for phosphorus supplementation during the wet
- Cost effective
- Heavier calves
- Heavier cull cows
- 5% Phosphorus

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