



Cow Calf Technical Bulletin

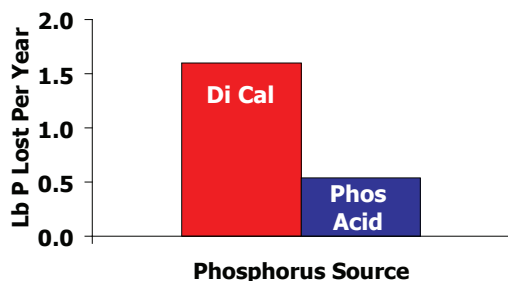
Supplement Choices to Reduce Phosphorus Excretion

Cattle require phosphorus for a host of growth, reproductive and metabolic functions. Dietary P deficiencies can lead to poor growth, appetite and feed efficiency, reproductive problems, and depressed milk yield. On the other hand, environmental concerns make it increasingly critical to meet these animal needs with a minimum amount of non-utilized dietary P being excreted in the manure.

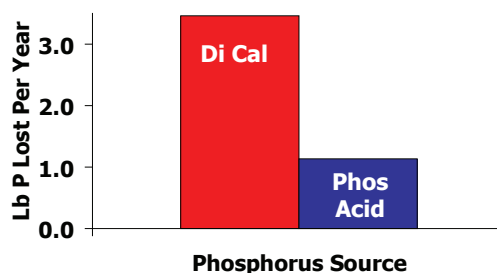
PHOSPHORUS SOURCE MATTERS

Bioavailability -- the amount of a feedstuff that is actually available for use by the animal -- varies greatly among supplemental phosphorus sources. Only 75% of the P supplied by DiCal or Mono Calcium Phosphate is absorbed; the rest is excreted. In contrast, 90% of the P in phosphoric acid can be retained and used. When feeding to a specific animal need, using phosphoric acid cuts excretion of supplemental P to **1/3 the levels expected with DiCal**.

ANNUAL EXCRETION OF SUPPLEMENTAL PHOSPHORUS - Beef Cow Fed 6 g/day
Absorbable P From Different Sources



ANNUAL EXCRETION OF SUPPLEMENTAL PHOSPHORUS - Dairy Cow Fed 13 g/day
Absorbable P From Different Sources



IMPACT OF SUPPLEMENTAL PROTEIN SOURCE

Most protein sources also contain phosphorus. If the animal cannot use this additional dietary P, it will be excreted.

PROTEIN SOURCE	AMOUNT FED TO SUPPLY .8 LB CP	% P	POTENTIAL EXCESS P, g per head per day
Whole Cottonseed	3.33 lb	0.75	11.3
Corn Gluten Feed	3.33 lb	1.00	15.1
Wheat Midds	4.44 lb	0.99	20.0
CCDS	10.0 lb	1.30	59.0
QLF Pasture+ 34/6	2.3 lb	1.00	10.4
QLF Dairy TMR 30	2.7 lb	0.40	4.9
QLF Core Max 40	2.0 lb	0.10	0.9

VALUE OF DIETARY UREA

In collaborative USDA and university research, investigators documented a significant reduction in phosphorus excretion, and increase in the % dietary P retained, when supplemental CP was supplied as urea rather than cottonseed meal.

Supplemental CP Source:	<u>UREA</u>	<u>CSM</u>
Total P Excreted, lb / hd	7.63	9.83
Difference		29%

Source: Proceedings, AFIA Liquid Feed Symposium, 2005.



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