

Phosphorus on the farm from feed grains and by-products

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WIN²ME - Western Integrated Nutrition and
Nutrient Management Education
“Feed Management Education for the Agricultural Professional”

What we're dealing with...

$0.4\% \times 50 \text{ lb DM} = 0.2 \text{ lb/day}$

$0.2 \times 400 \text{ cows} \times 365 \text{ days} = 29,200 \text{ lb}$

$29,200 \times 80\% \text{ excreted} = 23,400 \text{ lb}$

$23,400 / 35 \text{ lb uptake/A} = 670 \text{ acres for}$
400 cows

Don't import more than necessary



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Farm balance case studies

Table 1. Total phosphorus, feed P, % feed P imported on livestock operations, Washington Co., Oregon 1992

	Total P	Feed P	% feed P
Dairy 1	3,383	2,400	71
Dairy 2	13,321	6,500	49
Dairy 3	10,354	5,700	55
Cow-calf beef	1,040	1,000	96



Table 2. Phosphorus content of selected feeds

Feed	% P (DM basis)		% P (DM basis)
Legume hay	0.26	Distiller's grain	0.83
Cool-season grass	0.23	Brewer's grain	0.67
Cereal silage	0.31	Almond hulls	0.13
Corn silage	0.26	Whole cottonseed	0.60
Corn grain	0.30	Wheat bran	1.18
Barley grain	0.39	Wheat midds	1.02
Oats	0.40	Soy hulls	0.17
Soybean meal	0.70	Canola meal	1.10



Feed phosphorus

- Many producers are over-feeding P
- With requirements at 0.16 to 0.4 % of DM, it is possible to formulate most diets without supplemental P
- Variation is high in “book” values
- Ingredient analyses are important



Other important items

- May need to re-formulate more often with by-product feeds
- Greater yields of high-quality farm grains and forages
 - “mine” P from soils
 - Increase production

