

# Texas Dairy Matters

*Higher Education Supporting the Industry*

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## **REEVALUATE RATION PHOSPHORUS: CONSIDER ABSORPTION, NOT PERCENTAGE**

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Southern dairy rations typically contain a variety of by-product ingredients, many with good sources of available phosphorus (P) for dairy cows. Consider their value in ration formulation.

Dietary P levels are commonly discussed as a percentage of dietary dry matter. However, the latest version of the *Nutrient Requirements of Dairy Cattle*, published by the National Research Council (NRC) in 2000, defines the cow's daily requirement for P *absorbed* in grams. This measure considers both feed intake and P source.

A cow producing 100 pounds of milk per day needs to absorb 69 grams of P per day. Table 1 illustrates two ration regimens that consider both feed intake and P source. One scenario provides P from concentrates with moderate absorption and the other supplies P from inorganic sources having higher absorption properties. Because more of the P from the ration in Scenario 2 is absorbed, the ration P concentration needed is reduced.

It's important to account for P availability from different feed ingredients. Accounting for different absorption rates can reduce supplement costs, lower manure P excretion, and increase ration efficiency. Cows get the maximum benefit from their feed without wasting excess nutrients.

**TABLE 1.** Dietary phosphorus concentrations (% of dry matter) required to supply 69 grams of absorbed phosphorus at different dry matter intakes.

	<b>Dietary P concentration, % of dry matter</b>	
<b>Dry matter intake</b>	<b>SCENARIO 1:</b>	<b>SCENARIO 2:</b>
(lbs/day)	P supplied through concentrates <sup>1</sup>	P supplied through inorganic sources <sup>2</sup>
55	.395	.369
50	.435	.405
45	.483	.451

<sup>1</sup> Based on 70% absorption for P supplied from concentrates.

<sup>2</sup> Based on 75% absorption for P from inorganic sources.