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Adoption of Phytase by Livestock Farmers

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Abstract:

Phosphorous is necessary for crops and livestock, but excess phosphorous in rivers and lakes can result in eutrophication. The majority of the phosphorous in grains is in the form of phytate which cannot be digested and used by non-ruminants and is thus excreted in the feces. This requires adding inorganic phosphorous to the diet, representing an additional cost to the farmer. Phytase is an enzyme that frees the phosphorous and other nutrients that are in phytate so they can be digested and absorbed by the animals. Therefore phytase has the potential to both decrease the cost of feed and also decrease the phosphorous in feces, thus decreasing the potential for nutrient runoff. Phytase has been required in non-ruminant diets in Europe since the 1990's. In the Midwest, phytase has been routinely incorporated in non-ruminant diets by feed manufacturers and contractors for several years based on cost savings.

To our knowledge, there have been no studies which examine perceptions of phytase and the farm and farmer characteristics that affect stated adoption of phytase. A mail survey of 3014 poultry and livestock farmers was conducted in Iowa and Missouri in spring of 2006. The effective response rate was 37.4 percent. Over 60 percent of the respondents neither agreed nor disagreed (i.e. were neutral, 3 on a Likert scale of 1-5) with four questions regarding their perceptions of phytase, which would indicate that farmers are not very knowledgeable about the practice. Additionally, while most non-ruminant farmers use phytase only 17% stated they had adopted phytase. This suggests that there is an information disconnect between farmers and feed manufacturers/contractors and that we are measuring knowledge rather than actual adoption. Given current prices for dicalcium phosphate and phytase, this is a win-win technology. Further research needs to be conducted to develop other win/win technologies.

Impact Statement:

This is an on-going project.

Category: Human Dimensions

Type of Presentation: Poster Presentation