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Nutritionists surveyed on the topic of reducing crude protein in lactating dairy cow diets

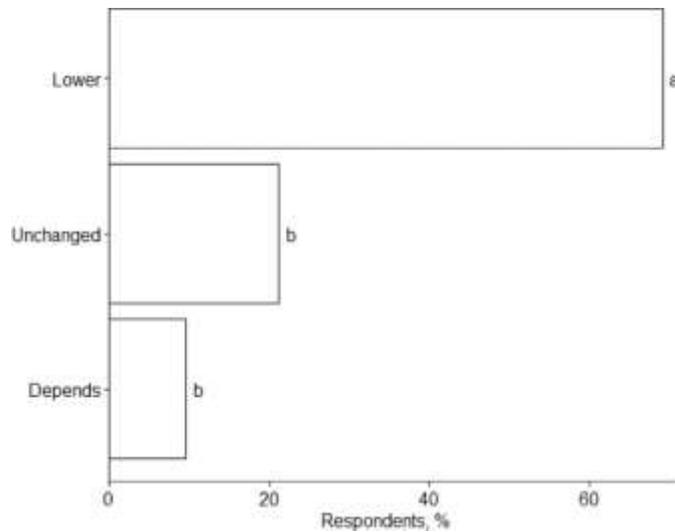
Survey responses from US dairy nutritionists on balancing dietary protein are reported in a new article in *Applied Animal Science*

Champaign, IL, December 6, 2021—Public interest in the release of nitrogen into the environment has been increasing, and dairy cows contribute some of this nitrogen. The amount of reactive nitrogen in manure can be manipulated by adjusting the amount of dietary protein fed to the cows. Amount of dietary protein and efficiency of its use also affect feed costs. To collect information about what influences nutritionists when they are balancing lactating cow diets, scientists at Virginia Tech and the National Animal Nutrition Program created a 32-question survey that was sent to 886 certified dairy nutritionists in the United States. The findings from this survey are presented in a new [article](#) in [Applied Animal Science](#).

The authors report that 77 nutritionists from 28 states responded to the survey, representing 1,065 herds and 521,000 lactating dairy cows. The questionnaire collected views on environmental nitrogen excretion and dietary crude protein cost, as well as demographic information.

The article discusses diet formulation and models used by respondents to design diets. The Cornell Net Carbohydrate and Protein System (CNCPS) was reported to be used more frequently than the National Academies of Sciences, Engineering, and Medicine (NASEM) model, although the authors believe this is likely due to higher prevalence of use of the CNCPS model by diet formulation software companies. Both CNCPS and NASEM models were believed by survey respondents to be adequate in their recommendations for metabolizable protein. When formulating diets, most nutritionists reported balancing for amino acids and including less crude protein in diets now than they did three to five years ago.

The authors point out that many factors are considered when balancing a diet including nutrition, costs, milk production, and the environment. “Dietary protein may contribute up to 60% of a diet’s total cost, but on average, seventy cents of each dollar spent on dietary protein ends up in the manure pit in a nitrogenous form, unused by the animal,” said lead author Mark D. Hanigan, PhD, Department of Dairy Science, Virginia Tech, Blacksburg, USA. He added, “Manure nitrogen can cause some water quality issues, but nitrogen lost as ammonia causes a much larger problem by affecting air quality and human health.” Many survey respondents (58%) believed regulation of nitrogen would increase in the next three to five years.



Caption: Percentages of US dairy nutritionist survey respondents who reported lower crude protein (CP) in lactating cow diets currently compared with the last three to five years (n = 52 responses). “Lower” = cows’ diets are lower in CP than they were three to five years ago; “Unchanged” = diet CP has not changed in the last three to five years, “Depends” = in certain cases dietary CP has changed, in certain cases it has not. Letters (a, b) denote pairwise differences $P < 0.05$ using a Poisson model (Credit: M. D. Hanigan).

When summarizing influences expressed by respondents, coauthor Jacquelyn M. Prestegaard-Wilson, Department of Dairy Science, Virginia Tech, Blacksburg, USA, stated, “Overall, dairy nutritionists reported that volatile commodity markets that influence the price of high-rumen-undegradable-protein feedstuffs will influence their decisions to balance diets for both nitrogen efficiency and maximum income over feed cost for their clients.” David K. Beede, PhD, editor in chief of *Applied Animal Science*, added, “Based on survey results, the major motivation to reduce dietary CP is financial rather than environmental.”

The article appears in the December issue of *Applied Animal Science*.

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Notes for Editors

“A survey of United States dairy cattle nutritionists’ practices and perceptions of lowering crude protein in lactating dairy cow diets” by J. M. Prestegaard-Wilson, V. L. Daley, T. A. Drape, and M. D. Hanigan (DOI: <https://doi.org/10.15232/aas.2021-02179>), *Applied Animal Science*, Volume 37, Issue 6 (December 2021), published by FASS Inc. and Elsevier Inc.

This article is openly available at <https://doi.org/10.15232/aas.2021-02179>.

Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or arpas@assoqhq.org to obtain copies. To schedule an interview with the author, please contact M. D. Hanigan at mhanigan@vt.edu.

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