

Myth – Veterinarians and nutritionists can NOT work together to collectively bring additive value to feedlot clients

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Abstract

Nutritionists and veterinarians play an important role in helping feedlots with protocol generation and implementation, training, use of new technologies, and monitoring of outcomes. In general, nutritionists are judged on growth performance, feed efficiency, feed-only cost of gain, and metabolic disorders/mortalities, while veterinarians are judged on morbidity and mortality outcomes, as well as pharmaceutical costs. In some cases, the protocols or recommendations that could be implemented to optimize these outcomes in 1 realm may conversely result in negative impacts on outcomes in another realm, thus reflecting poorly on either the nutritionist or the veterinarian. If these professionals can work cooperatively to optimize outcomes, this is the best case scenario for the client, the cattle, and ultimately the consumer. However, the client also needs to have clear communication and more importantly, realistic expectations to hold these professionals accountable for the right reasons. As technology continues to improve through monitoring tools, data collection, new products, and research, opportunities for collaboration between professionals does exist. Clear expectations from all 3 parties (feedlot, veterinarian, and nutritionist) are required for success.

Key words: feedlot, communication, nutritionist

Résumé

Les nutritionnistes et les vétérinaires apportent une grande aide aux parcs d'engraissement au niveau de l'implémentation et de la création de protocoles, de la formation, de l'utilisation de nouvelles technologies et de la surveillance des résultats. En général, les nutritionnistes sont jugés au niveau de la performance de croissance, de l'efficacité de l'alimentation, du coût du gain associé aux aliments et de la mortalité ou des troubles reliés au métabolisme alors que les vétérinaires sont jugés au niveau de la mortalité et de la morbidité et des coûts pharmaceutiques. Dans certains cas, les protocoles ou les recommandations qui pourraient être mis de l'avant pour optimiser ces résultats dans un domaine peuvent au contraire avoir des impacts négatifs dans un autre domaine ce qui fait mal paraître le nutritionniste ou le vétérinaire. Dans le meilleur des cas pour le client, le bétail et ultimement pour le consommateur, ces profession-

nels travaillent conjointement pour optimiser les résultats. Toutefois, le client devrait avoir une communication claire et surtout avoir des attentes réalistes pour tenir ces professionnels responsables pour les bonnes raisons. Alors que la technologie continue d'évoluer grâce aux outils de surveillance, à la cueillette des données, aux nouveaux produits et à la recherche, il existe des opportunités de collaboration entre ces professionnels. Il faut des attentes clairement établies de la part des trois groupes concernés (le parc d'engraissement, le vétérinaire et le nutritionniste) pour s'assurer du succès.

Introduction

As cattle feeding has evolved, the services provided to feedlots have also evolved and become more sophisticated. Smith and Hollis summarized the roles the veterinarian and nutritionist play in the advisor role quite well.³ The authors' quote is still quite relevant, "For the feedlot's production goals to be met, the consulting veterinarian and consulting nutritionist need to function together as part of the overall management team". This quote, while absolutely true, is easier said than done. Nutritionists and veterinarians, while having similar overall objectives to optimize the success and net profitability of their clients, are held responsible for different outcomes.

General Role of the Nutritionist

The nutritionist is typically judged on average daily gain (ADG), feed efficiency (feed to gain ratio [F:G]), metabolic disorders/mortalities, and feed-only cost of gain. Ration formulation, diet transitions, implant programs, and feed additive usage and/or concentration, are a few factors that affect these numbers. Other items that impact cattle performance are cattle type, genetics, weather (pen conditions), risk of undifferentiated fever (UF)/bovine respiratory disease (BRD), previous history, gender, purchase weight, and sale weight. What about health, or more importantly things that can be done to mitigate health risk, do these impact cattle performance? Metaphylactic antimicrobial use in high-risk feedlot calves has been shown to improve ADG and F:G.⁴ However, the primary reason metaphylactic protocols were implemented wasn't because of cattle performance, but rather improved animal health, primarily through reducing morbidity and mortality associated with BRD. Secondly, the

choice of metaphylactic product has also been shown to influence ADG and F:G.¹ These improvements had nothing to do with ration formulation, or outcomes related to the task of the nutritionist, but in this case, who gets the credit for the improved performance on the close out?

General Role of the Veterinarian

The veterinarian is typically judged on morbidity and mortality outcomes, as well as pharmaceutical costs. There are many factors at play related to animal health. Like cattle performance, many of the aforementioned items such as weight and risk of UF/BRD impact animal health outcomes, and understanding these as they relate to animal health is also important, as they dictate cost-effective protocol selection and help to establish accurate expectations for outcomes. In many cases when 1 biological knob gets turned, another lever gets pulled. There are many potential protocols that could be implemented that have minimal effects on cattle performance that positively or negatively affect animal health outcomes. These include ionophore concentrations, DOF, out weight, roughage concentration, implant strategies, grain source and processing method, among others.

Increasing monensin concentration (as summarized by Vogel⁵) in some cases has been shown to have no negative effects on cattle performance, but reduces overall mortality. In most cases, the decreased overall mortality is driven by a decrease in digestive or metabolic cause-specific mortality. However, when looking at a “close out”, cause-specific mortality is not always broken out. If looking through the stack of overall mortalities, who gets the credit for the decrease?

Near infrared spectroscopy (NIR) has been utilized for some period of time. It was our hypothesis² that if we could procure high digestible energy barley, we could improve cattle performance. It would be easy to use a first principles approach and implement a feeding strategy utilizing high digestible energy barley following this hypothesis. However, when we segregated barley based on NIR prediction and formally tested this hypothesis in a large-pen commercial field trial, we were able to determine the relative cost-effectiveness of feeding programs including barley with differing levels of digestible energy. Cattle fed high- energy barley had a tendency towards higher morbidity rates, and significantly increased overall and metabolic cause-specific mortality rates compared to those fed predicted lower-energy barley. However, diet formulations based on predicted level of digestible energy in barley had no appreciable impact on ADG or F:G. Again, if looking at the close out, especially if postmortems were not conducted, it could be “easy” to blame the veterinarian for poorer health outcomes, even though it was of no fault of their own.

Social and Economic Challenges/Considerations

All the factors and outcomes discussed in previous sec-

tions ultimately impact the feedlot’s bottom line, and profitability is a large factor that drives the success of an operation. However, one cannot negate the importance of social license in also ensuring success. Nutritionists and veterinarians both play an important role in ensuring an operation’s success and profitability, and also in maintaining a high social license.

Take for example metabolic disorders. Adding roughage to the diet can reduce metabolic morbidity and mortality, but at what cost? At 1 extreme, 1 could remove concentrate from the diet to mitigate most of the risk associated with metabolic disorders; however, feedlot operators may not like the poorer ADG and F:G outcomes, but what is the balance? What is an acceptable number of metabolic mortalities and overall mortality given the desired feedlot performance outcomes within a specific cattle type and risk of UF/BRD? What impact do the different approaches have on the economics of feedlot production? As the diet price and value of cattle fluctuate, this may shift the point of balance from an economic standpoint, leading to a different answer for achieving optimal outcomes and profitability.

In a similar vein, metaphylactic antimicrobials decrease mortality when administered to feedlot cattle. Again, at the extreme, if the goal is to have the “lowest” mortality, shouldn’t all cattle be administered metaphylactic antimicrobials to mitigate health risk? Again, what would be the cost of such a strategy, both from an economic and antimicrobial stewardship standpoint?

For both scenarios above, without accurate data and defined objectives, the solution can be difficult to determine. Add in considerations such as animal welfare, antimicrobial stewardship, and governmental regulations and the definition of an “optimal outcome” gets even murkier. However, nutritionists and veterinarians have the skills and expertise to answer these tough questions. By working together to understand how each decision impacts all important biological outcomes, and using these known outcomes to model the relative economics of each option for a given cattle type and UF/BRD risk class, the optimal solution can be achieved.

Conclusions

If “who” gets the credit, or conversely the blame, can be removed, and “how” the professionals collectively solve challenges in feedlot production is the focus, the collective management team will benefit. The reality is, recommendations made by nutritionists affect animal health, and recommendations made by veterinarians affect cattle performance (and everything in between). As data collection and technologies improve, there are opportunities to be more aware of the complete production picture for both professionals. There are also opportunities for all parties to be aware of the protocols implemented on both sides and how those affect all biologically-relevant parameters. Most importantly, feedlots need to have realistic expectations of cattle performance and animal health based on cattle type

and risk of UF/BRD, and how proposed protocol changes may positively or negatively affect those outcomes. Only through strong alignment between professionals and feedlot operations, and clearly defined objectives, can feedlot production, profitability, and animal welfare be optimized. When this is achieved, the feedlot, cattle, nutritionist, veterinarian, and consumer all ultimately win.

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