



Optimizing Rumen and Milk Quality with Top Dress Hay in Dairy Cows

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Abstract

It is common knowledge that the *Aedes* mosquitoes are the major vectors for the Dengue Fever (DF) virus and the Zika virus and the *Culex* mosquitoes are the major vectors for West Nile Virus (WNV). The *Culex* mosquito is a common mosquito in the United States of America (USA), as it is elsewhere in the world. The Zika virus is carried by the *Aedes* mosquitoes and possibly by the *Culex* mosquitoes. In this work, it is reasoned that all the mosquitoes mentioned could be capable of being vectors of these major viral diseases of concern. It is also known that the infected female *Aedes* mosquito can give rise to baby mosquitoes infected with the DF virus. Because of their similarity in life-cycles, it is quite possible that the *Culex*, *Aedes*, and *Anopheles* mosquitoes can all spread DF, Zika and WNV. Thus, it is likely that DF, Zika and WNV can be spread to all 50 states of the USA. The spraying of insecticides over the rice fields of California may be unnecessary. Fishes which eat mosquito larvae should be preferred instead as a mitigation agent against the mosquitoes. Abstinence from meat could be considered a possible method to prevent DF from progressing to Dengue Hemorrhagic Fever (DHF).

Keywords: Fever; Vector; *Aedes*; *Culex*; *Anopheles*

Background and Literature Survey

The rapid growth of ruminant husbandry in many regions has caused many health problems that largely contribute to devastating economy losses. High levels of milk and beef production have been realized by feeding overly high levels of starch and fat. On the other hand, fertility and longevity have dramatically declined. Preparing total mixed rations to dilute the energy content of super diets usually fed to high-merit ruminants has been introduced as a strategy to reduce risks from rumen over-fermentation and consequent health and immune problems [1-4]. However, such a presumed efficacy has been under serious questions [5-8]. The real initial problem is not how to prepare or deliver diets to high-producing ruminants, but it is rather

how to formulate diets that maintain reasonable rumen and host health while wisely and not overly improving production properties [9-12]. Because of feeding too much concentrate and starch, mixing forage and concentrate may significantly reduce forage fibre effectiveness within a suboptimal subacidotic rumen environment [1-3]. Overfeeding starch and fat and then

mixing them with forages hoping to eradicate problems is just self-cheating.

That could be a reason why component feeding proves more effective than total mixed ration delivery under certain management systems [1,2]. Top-dress delivery of adequately effective forage choices helps ensure that metabolically pressured ruminants receive reasonable amount of physically effective fibre at least once daily. This separate forage provision acts as an appetizer while providing the rumen with sufficient effective fibres to stimulate ruminating, chewing, and timely naturalized rumen conditions. As a consequence, overall daily intake can be improved, which is of utmost importance in early postpartum dairy cows suffering from negative nutrient balances.

Wet and ensiled forages are better suited for total mixed rations preparation, as they embrace small concentrate particles and improve meal and bout uniformity. For top-dress presentation, however, dry forages would be more appropriate. Top-dress alfalfa and mixed legume-grass hays would be among optimal choices. Notable, the amount of top-dress forage offered

must not be too much of a good thing to not increase nutrient imbalance and not reduce nutrient and feed efficiency.

Conclusion

This perspective article discussed the necessity and efficacy of top-dress forage provision in modern dairy and beef farming for the healthy management of ruminant husbandry and human food production. Top-dress and delicate provision of adequately long and physically effective forages is a workable strategy to improve food intake and rumen conditions. This on-farm approach works towards sustainable ruminant husbandry and food safety and security. But, too much of a good thing hurts.

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