

PRACTICAL TOOLS TO CONTROL FEED AND DIET VARIATION

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SUMMARY

Currently, most nutritionists believe that feed and diet variation is a problem that results in significant losses of productivity and lower efficiency of production. Scientific data to support this belief are very scarce; most evidences are anecdotal. We recently conducted a trial with dairy cows where the magnitude of daily variation in level of crude protein formed the treatment structure. We will present results that were not entirely predictable.

Various tools have and are being developed to assist producers and their nutritional advisors in controlling feed and diet variation. During this presentation, we will concentrate on two new tools that we have developed at Ohio State.

The first tool (yet to be named) determines the optimal sampling pattern for forages. By sampling pattern, we mean the sampling frequency, the number of samples, and the decision criteria to use with the laboratory results. The software requires 13 inputs, but many are trivial or inconsequential. The optimization considers all the costs associated with the process, including the cost in production losses when the forage has changed as well as the cost incurred to rebalance a ration that didn't need to because the forage had not changed. Many examples will be presented. The software can be downloaded for free at: www.sesamesoft.com

The second tool, named Ping Pong, calculates the nutritional and economic implications of feed variation. A specific diet and animal must be entered. The underlying model is that of NRC (2001). Feed composition data include mean composition as well as variances and covariances of all major compositional elements (covariance matrices). Getting reliable estimates of these covariance matrices has been challenging so far but some commercial feed laboratories have recently indicated their interest to contribute in this regard.

Output is presented both in numerical and graphical forms. A few examples will be presented. A beta version can also be downloaded for free at: www.sesamesoft.com