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Calf Note #69 – Nutrient Requirements of Dairy Cattle

Introduction. Formulating rations for domestic animals requires an estimate of the nutrient quality of the feedstuffs to be fed, the anticipated intake by the animal (assuming that the animal has free access to feed) and the nutrient requirements of the animal.

In early 2001, the National Research Council published “Nutrient Requirements of Dairy Cattle, Seventh Revised Edition”. These requirements, which are the basis for most formulation software used in the U.S. and abroad, were last published in 1989. This book is a tremendous improvement over the last publication. In the 381 pages of the new volume, the members of the subcommittee on Dairy Cattle Nutrition attempted to incorporate as much of the most recent research as was feasible. Instead of simply publishing tables of nutrient composition and requirements, the committee has incorporated a computer model into the publication to allow improved estimation of the true requirements of the animal. The new “Guide” comes with a compact disk that contains the model in a usable form.

Chapter 10 contains a review of the nutrient requirements of the young calf, including energy requirements of calves fed only milk or those fed milk plus dry feed, veal calves, and ruminating calves. The chapter also includes a discussion of the protein requirements of calves, vitamin and mineral requirements, and other aspects of nutrition that are unique to young calves.

Chapter 11 covers growth and formulation of diets for dairy heifers. The chapter covers topics including energy and protein requirements, composition of body weight gain, setting target growth rates, adjustments of maintenance requirements for environmental conditions, and other information.

The new NRC guide is an amazing improvement over the previous version. The 1989 version of the guide had a very limited data set for calves, and many of the tabular values were difficult or impossible to calculate. Therefore, it is expected that this new guide will help calf and heifer raisers calculate the nutrient requirements of their animals and formulate their diets. Over the next few months, we’ll be looking at the new Guide and its recommendations for calves.

Calf and heifer growers can learn a lot from this new volume. It is available from National Academy Press, 2101 Constitution Avenue, NW, Lockbox 285, Washington, DC, 20055. It can be purchased on-line at <http://www.nap.edu> or <http://books.nap.edu/catalog/9825.html>. The cost (as of the date of this Calf Note) is \$59.95 (a discount is available for on-line orders). You can also look at individual chapters and pages of the Guide (for free!) by pointing your browser to <http://books.nap.edu/catalog/9825.html> and clicking on the link stating “Read it Online – Free!”. Not a bad deal! This is an excellent volume – be sure to check it out!

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