



Speakers at this week's dairy cattle nutrition workshop were, from left, Bill Weiss, professor of dairy science, Ohio State; Gabriella Varga, professor of animal nutrition, Penn State; and Jud Heinrichs, professor of dairy and animal science, Penn State.

Dairy Conference Reviews Importance Of Forage Quality, New NRC Book

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also vary significantly, the nutrition expert said, in chemical composition.

"Even corn grain has significant variations," he said.

The new book, out in January, will further define nutrient values depending on feed used.

The book has "big changes in energy values," noted Weiss.

"Use this to balance diets."

Some recommendations in the 1989 edition included feed values that were calculated too high.

By-product composition values, including for cottonseed, have changed. Cottonseed hulls are a lot higher in fiber yet have poor digestibility.

And nutritionists should be aware that total digestible nu-

trient (TDN) values are an "extremely poor measurement of energy content of feeds high in protein and high in fat," Weiss noted.

Two feeds with the same TDN can have very different net energy for lactation (NEL) values, Weiss said.

TDN is not equal to NEL. In the 2000 book, TDN values are "completely disconnected from NELs," said Weiss.

In the new book, higher protein feeds have more energy. If the nutritionist would feed higher protein, the dairy animal would have "higher net energies," he said.

Overall, Weiss noted, it will require more energy to produce milk in 2000 than 1989.

Different dietary requirements will consider new feed energy values and "bioavailabil-

ity" of certain nutrients. The bioavailability requirement considers how much the heifer or cow has to "absorb," Weiss said, not simply how much she is fed.

On supplementary vitamins, vitamin A values increase 50 percent over the old 1989 values. Vitamin D values don't change. Vitamin E values reveal a big increase, simply as a way to prevent mastitis.

Body weight after calving is the most significant correlation to how much milk a cow will produce, particularly the end portion of the growth period, according to Jud Heinrichs, Penn State professor of dairy and animal science.

Heinrichs also reviewed some NRC guide book changes, important in combination with general management.

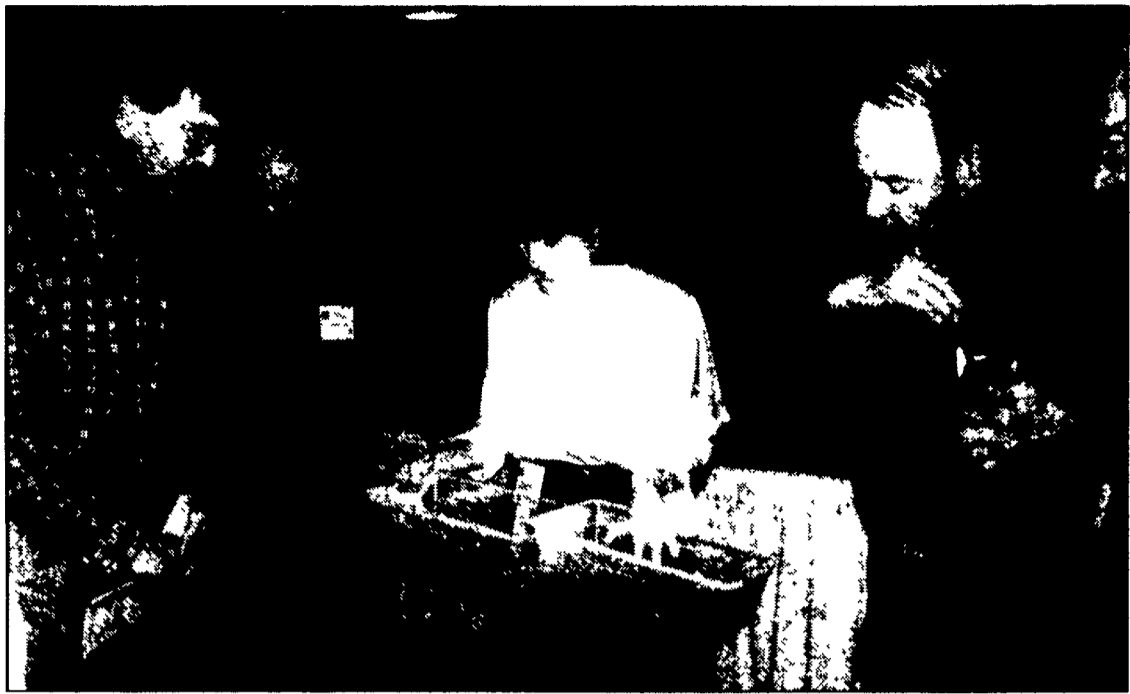
Heinrichs noted some keys to lifetime profitability based on the dollar amount of input at heifer raising compared to the milking cow.

It could be possible to decrease the amount of time to calving while increasing rate of gain.

If calved at 22 months, the rate of gain stands at 1.7-1.8 pounds per day maximum, Heinrichs noted. Through management and diet, in addition to genetic selection, nutritionists could get more rapid rates of gain and calve younger than 22-24 months.

For now, Heinrichs noted that dairy nutrition research is looking at ways to increase the growth and development of the rumen. The vast majority of the growth in the animal comes

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Virginia Ishler, extension assistant at Penn State, hands out corn silage samples during the workshop.

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