

Partitioning of nutrients

(Continued from Page D8)

require some 70 to 80 percent of their nitrogen source in the form of ammonia (NH₃) for maximal growth. They can get this ammonia either by breaking down feed proteins or from NPN sources. Some NPN, in the form of urea, comes into the rumen via the blood and saliva, since the cow does produce urea in the liver.

However, this internally-produced urea will supply only a small amount of the microbial requirement in the lactating cow. The major portion of NPN must be delivered through the feed. All feeds, including roughages, contain some NPN, but it may not be enough or readily available to supply microbial needs.

The added NPN in Maxi-Tech 40 maintains a source of NPN (ammonia) and the right pH (alkaline/acidity balance) in the rumen for maximal microbial growth and fermentation and thus, a better balance of nutrients from digestion for use by the cow.

As chart 1 clearly shows, urea has a strong positive effect on both rumen function and fiber digestibility in these super-energy rations. A higher pH and greater amounts of volatile fatty acids mean better fiber digestion.

Chart 1
Rumen Function
Super Energy Ration

	"O" Urea	With Urea
pH	6.01	6.22
VFA—MMOL	116	129

MMOL=millimols

This is certainly the case as seen in chart 2. The balance including

the addition of urea resulted in much greater digestion of both crude fiber and acid detergent fiber from all feeds being fed. This means maximum energy and a better nutrient balance available from the feeds.

Chart 2
% Digestibility of Fiber
Super Energy Ration

	"O" Urea	With Urea
Crude fiber	27.0	34.9
ADF	29.7	37.7

Better Nutrient Balance

A total balance of all sources and types of nutrients is needed for maximum performance and production by the lactating cow. This is very much like a chain, which is only as good as its weakest link. Similarly, the right amount of each kind of nutrient (total nutrient balance) is required for optimum performance and production by the dairy cow. We've already noted the need for and benefits of maximum fiber digestion — maximum energy available to the cow and the right mix of volatile fatty acids (high acetate primarily) to promote maximum milk fat production.

The lactating cow also requires large quantities and the right types of protein in order to partition energy and protein to the right purposes — milk production and the maintenance of body tissues. Part of this protein is supplied from feed protein which has escaped degradation in the rumen (by-pass protein), and is digested and absorbed into the blood from the lower gut. Part of the protein comes from the microbes which have grown in the rumen and are

digested in the lower gut so that this protein is available and can be used by the cow. Protein from both sources (by-pass feed protein and microbial protein) is required if we are going to have maximum digestion and optimum partitioning of nutrients and performance by the cow.

Some proteins in all feeds — grains, concentrates, complete milking rations and forages — will escape rumen degradation. The key is to get the right balance of proteins along with the NPN or ammonia which is used by the microbes to make protein. This is what Purina's Maxi-Tech 40, for example, accomplishes — supplying the right balance of by-pass proteins and NPN. It is this balance of energy, protein or nitrogen sources which results in better digestion, nutrient partitioning and performance by the high producing cow, and this means higher milk production, maintenance of fat test and reduced weight loss.

Based on feeding trials and milk production studies conducted at the Purina Dairy Research Center in Gray Summit, Mo., when compared with another high energy feed in an 18 percent grind and mix ration, cows eating Maxi-Tech 40 increased their milk production from 67.6 pounds to 68.5 pounds, but did not vary their daily intake. That extra pound of milk each day during peak production equals about 220 pounds over the entire lactation period.

Butterfat content showed a slight increase as well, while the bodyweight loss during early lactation was reduced from 1.25 pounds per day on the control versus .33 pound per day on the Maxi-Tech ration (almost one pound per day less weight loss).

Urea received a bad name in the dairy industry several years ago, and many dairymen are still hesitant about using it in their feeding program. Primarily, at that time, urea was used only for economy purposes — too much urea was being fed, and most rations containing urea were lower in energy. The result was unpalatable rations and lower milk production.

If urea was being used the same way today, it would cause the same problems. However, research over the past 8 to 10 years has shown conclusively that controlled amounts of urea will not cause palatability problems. Urea in

fact, will result in improved digestion of high energy diets, providing a decided performance benefit.

Milk production potential of dairy cows continues to increase through improved breeding programs. A key to profitability in the dairy industry is the ability to take advantage of that genetic potential through improved feeding programs. How can we do this? By developing and using feeds and feeding programs that will give maximum digestion and the right balance of the right type of nutrients for most efficient milk production.

Sire Power open house slated

TUNKHANNOCK — This year's Sire Power Open House will be held next Saturday, Sept. 8 from 10:30 a.m. to 3 p.m. at the Sire Power Headquarters in Tunkhannock.

Outstanding sire proofs, new personnel, and Sire Power staff speakers will be among the activities scheduled for Open House. Highlighting the afternoon program will be the presentation of the "Distinguished Service to A.I. Award". William "Bill" Schaefer will be honored as the recipient of this award, and his picture will be placed in the Sire Power Board Room.

Bill is no stranger to the A.I. industry and was instrumental in

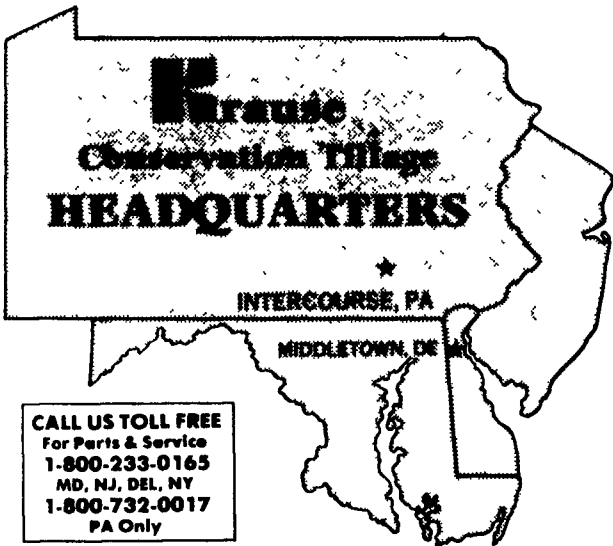
the organization and development to the present Sire Power as we know it today. Bill retired in 1974 following a career that spanned more than 30 years in the A.I. industry. His association with the industry dates back to 1943 when it was named Manager of the Southeastern Pennsylvania Artificial Breeding Cooperative. In 1944, he was appointed Manager of NEPA where he made numerous innovations, therefore establishing the organization as an early leader in the A.I. industry. Bill also held other managerial positions, and retired from the position of NEBA Sales and Service Superintendent. Tickets are available from technicians or direct herd salesmen at \$1.00 per person and pre-school children are free. An ox roast will be served this year.

Bus tours will be going to Valley View Complex from headquarters every few minutes, beginning 10 a.m. until noon. Sire Power urges cooperation on riding the buses to tour the facilities and discourages individual cars going to the Valley View Complex.

C.B. HOOBER & SON INC.

Sells

KRAUSE the tillage innovators



CALL US TOLL FREE
For Parts & Service
1-800-233-0165
MD, NJ, DEL, NY
1-800-732-0017
PA Only

Ask Your Neighbor About Krause...

He
Probably
Owns
One



KRAUSE HAS A TILLAGE TOOL FOR YOU!

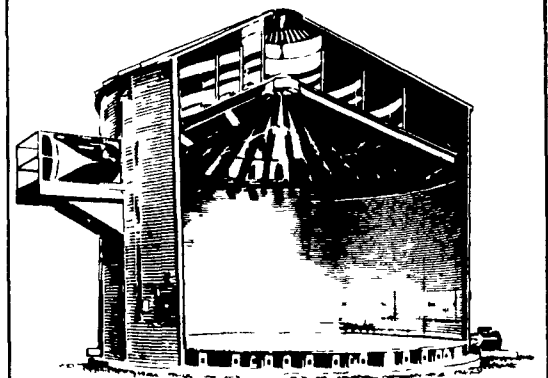
ALL NEW AND USED
PRODUCTS BACKED
BY
HOOBER
PARTS
& SERVICE

Radio Controlled Trucks For Better Service

C. B. HOOBER & SON, INC.
INTERCOURSE, PA
717-768-8231

HOOBER EQUIPMENT, INC.
MIDDLETOWN, DE
(302) 378-9555

Fast, Efficient,
Dependable.



The Stormor EZEE-DRY®
Grain Drying System.

The EZEE-DRY has proven itself fast, efficient, and dependable for more than 15 years. Drying capacities are available up to 2,000 bu./hr. at 5 points removal, and it doubles as a storage bin after drying is complete. The thin drying layer and high volume, low heat airflow ensures uniform drying. And the EZEE-DRY is virtually maintenance free.

For a free, no obligation estimate,
stop in or call today.

LOUCKS

GRAIN EQUIPMENT INC.

RD #12 Box 307
York, PA 17406

(717) 755-2868

Manufactured by Stormor Inc. Fremont, Nebraska