

PENNSTATE
 College of Agricultural Sciences
 DAIRY & ANIMAL SCIENCE
E-I-E-I-O
 From Dairy and Animal Science at Penn State

BETTER OUR COWS THAN YOURS

Walker McNeill, Manager Dairy Cattle Research And Education Center

Have you ever fed your cow 40 pounds of grain a day when she's giving 120 pounds of milk? How about 50 pounds of grain? Why not? Did someone tell you it wouldn't be healthy for the cow? How did they know? And why did you take their word?

Prove it to yourself. Take 10 of your highest producing cows and increase their grain to 50 pounds per day.

If you feed a total mixed ration (TMR), why do you feed 14 to 18 percent crude protein in the mix? Why not 10 or 20? You don't think it'll work?

Prove it to yourself. Feed your highest producing cows a 10 percent crude protein TMR and see if they continue producing 90 or more pounds of milk per day.

Do you need to get your heifers into the milking string quicker? Feed them to gain 3 pounds a day and breed them at 12 months of age. Who said they'd have trouble calving and wouldn't be as productive?

You don't do these things. They aren't current recommendations. Somewhere along the way, someone — perhaps an extension specialist, county agent, consultant, veterinarian, professor, or a columnist in the trade press — has told you that cows have to be fed a certain level of fiber; large amounts of concentrate will cause the cow to go off feed; there isn't enough protein in a 10 percent TMR for a high-producing cow; and overfeeding heifers will cause them to get too fat rather than grow.

But 30 years ago we were told that a cow should not be fed more than 22 pounds of concentrate, regardless of production. And back then we thought that heifers shouldn't be pushed to enter the milking string at less than 36 months of age. How did these changes come about?

They are the result of dairy scientists continually questioning the "current way" of doing things. What happens in the rumen when more than 22 pounds of concentrate is fed, and what can be done to change it? How can a heifer be fed to reach breeding size at a certain age without putting on fat?

These practices and many others we now accept as standard didn't come about without paying a price. For every one idea that becomes a recommendation, many more do not.

Crude protein (CP) level recommendations in TMR rations are a good example. Depending on production level, it's recommended that TMRs contain 14 to 18 percent CP. This means, however, that sometime some cows were fed either a 12 or 10 percent or 20 or 22 percent CP TMR. Cows on a 12 or 10 percent CP ration didn't milk as well as those on 14 to 18 percent. Production was down, milk sales were lost. Cows fed a 20 to 22 percent ration milked as well as the 14 to 18 percent cows, but didn't increase production enough to pay for the extra protein. Someone lost money paying for the needless extra protein supplement.

Better it happened to our cows than yours.

What ideas and recommendations are currently being challenged by dairy scientists at Penn State? Some but not all of the dozen or so research projects now ongoing at Penn State's Dairy



Walker McNeill

Cattle Research and Education Center include:

- Using surplus dairy products such as whey and outdated baby formula in calf milk replacers. If our calves grow well on these, you may one day feed them to your calves. If they don't, better our calves than yours.

- Evaluating new forage varieties and pasture mixes that may supply higher levels of nutrients to grazing lactating cows than present varieties, and investigating whether protein level and type requirements differ between grazing cows and those fed hay or silage.

If these new varieties work out, your cows may graze new varieties of legumes and grasses in various mixes and be fed a different type of concentrate when grazing. If they don't work out — better our cows than yours.

What ideas and recommendations will be challenged by future dairy scientists at Penn State? No one knows for sure, because the only constant in today's industry is change. The problems you need answers to today won't be the ones for which you need answers tomorrow.

Scientists may investigate genetically designed fungi or bacteria that either ferment feedstuffs or populate the rumen, enabling cows to digest materials that are now simply by-products. They may look at using cow's milk as a source of proteins, medicines, or hormones for humans.

If these futuristic ideas become reality, you may feed straw or sawdust and watch your cows digest it as efficiently as they do the finest alfalfa hay. In the future, you may not be selling your milk to a processor, but to a drug company — at a premium price.

The potential financial rewards of feeding sawdust as digestible as

alfalfa or opening up new markets for milk are great. But the risks are great, too.

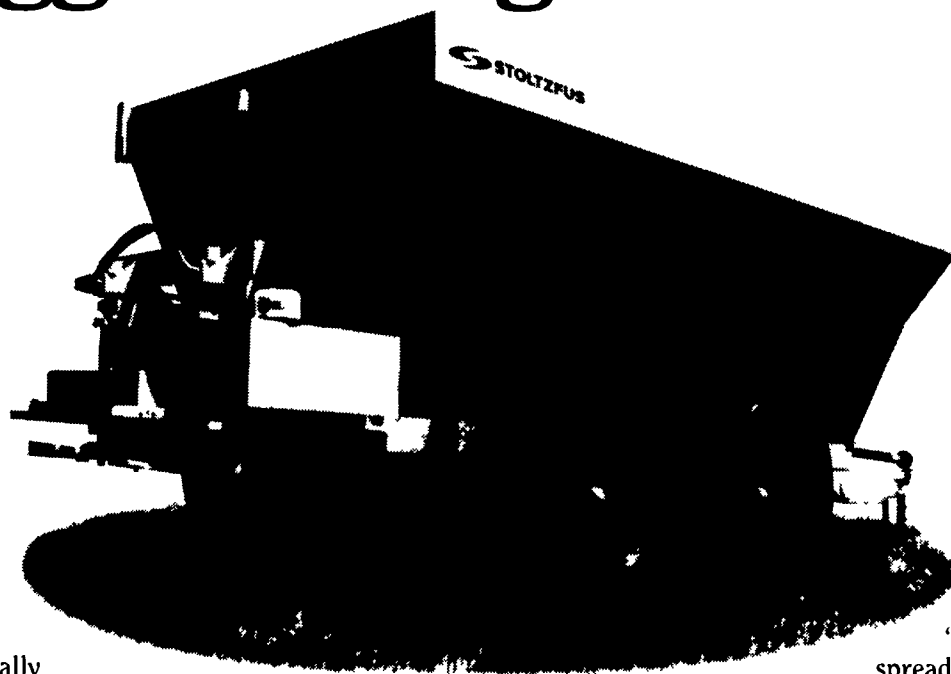
Would you volunteer to feed your cows treated sawdust to see if they will eat it and give milk on it? Would you be willing to dump milk from 10 or 15 of your cows for a year while FDA approval is obtained? The answer is obvious — better our cows than yours.

This then is why Penn State has a Dairy Cattle Research and Education Center. The most important product that leaves our dairy isn't the milk in the bulk tank. It's the research findings and resulting extension recommendations that become part of your accepted practices.

Findings and recommendations help you to become more efficient, to improve your bottom line. These findings and recommendations ultimately will benefit all Pennsylvanians by helping ensure a milk supply that is wholesome, safe, and readily available at the least possible cost.



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