

(Continued from Page A28)

used, and you start seeing some of the whole seed appearing in the feces.

"We max out the whole cotton seed and then we start to bring in some more megalac," he said.

He said the four-way juggling act begins at about this point in creating a ration.

"Putting in fat . . . What's happening, we're putting in fat and we're decreasing the amount of soybean meal and increasing the amount of bypass protein," he said. He said he uses blood meal for bypass protein for simplicity.

"It's important to keep these balances of energy and protein and fat and bypass protein.

"If we're doing this, we're maxed out at 7- to 7½ -percent fat. I know some nutritionists and dairy-men who feed more fat, up to 8, 8.5 percent. In some cases, it works. But I get nervous when I'm above 7½ -percent fat," Chalupa said.

"I like to hold it to about 7 percent. And when we're doing this, we're still holding our ABF at about 18 percent," he said.

But good total mixed rations requires a little extra upfront money, in order to get the extra milk.

"People say, 'Oh, that's fine. You're using all these speciality feed ingredients, but the ration is costing more,'" Chalupa said. "And I've been doing this for about 25 years and I don't know how to make the ration better and have it cost less or cost the same.

"If we're going to have more nutrients in the ration, it's going to cost more," Chalupa said.

At first level of milk production, about 20 kilos of milk, he calculated that his ration would cost about 10 cents per kilo of the ration, or about a nickel a pound.

Go up to much higher levels and feed costs rise.

"What we contend is not the cost of the ration, but really the income over feed cost, and also that will depend on what the genetic potential of a specific herd is," Chalupa said.

"If for an example, we have a herd that has a genetic potential for about 25,000 pounds of milk, and

we feed it rations to support that level of milk, starting early in lactation, and then drop back to some of the less nutrient dense rations, and in fact the cows do milk at that level, you can see we are still increasing our income over feed costs.

"We haven't reached the point of diminishing returns.

"We suggest, go ahead and feed this ration, and if your other management factors are correct and your cows really do have the genetic potential, they will increase production and you will see and increase in income over feed cost.

"And if you don't, there's either some other management component that's not correct, or your cows really do not have that genetic potential, and then we better drop back to the next level," he said.

Mike O'Conner, dairy specialist with Penn State University, talked about keeping high producing cows reproducing and attempted to dispel some myths surrounding these cows.

He said it's not so much the far-

mer's cow as the farmer, in most cases.

"First thing is an attitude problem," O'Conner said. "I think high production is often blamed for low reproduction performance."

He said that some farmers come to him, throw their hands up in the air and claim the can't get their cows bred because they are producing too much milk.

O'Conner said that there is no significant, direct correlation between high milk production and low breeding performance.

He said nutritional upsets in cows caused by farmers who improperly ration feed for high production, or, in some cases, farmers who deliberately wait to breed their cows, are more at cause for poor reproduction behavior.

"Also you allow those cows that are high producers more opportunity to conceive. That's not quite fair to the low producer," O'Conner said.

"Also as days open increases, a longer dry period results. Cows tend to get overconditioned in that late lactation period and the dry

period. So a lot of those four items account for some of that bias towards the high producers," he said.

"Secondly, the low producers, you cull them earlier . . . and they are not given a chance to reproduce or become a repeat breeder and physiologically, inside of them, they may be a repeat breeder, only you don't give them an opportunity to show that," O'Conner said.

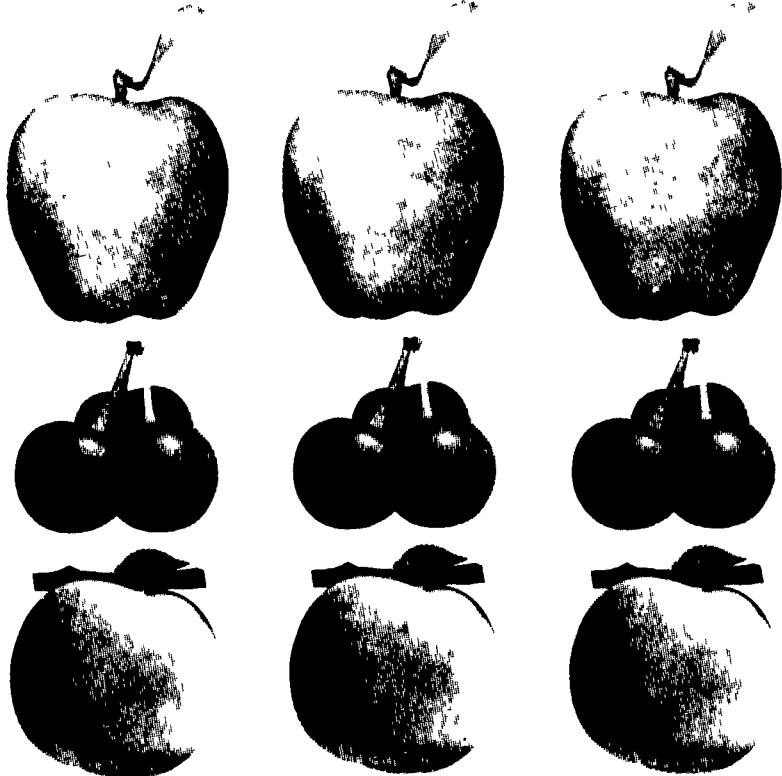
"Be cautious of reading some of this (DHIA) information and showing a negative effect on reproduction, especially for the high producer," he said.

O'Conner said there were some interesting results from studying DHIA records taken from 4,800 Holstein herds in Northeast U.S. that were grouped according to production.

The groupings ranged from classes of 19,000 pounds milk to 13,700 pounds milk. And data showed that while the high producers had longer days in milk, the calving intervals basically remained the same.

"What I'm getting at is, these

(Turn to Page A31)



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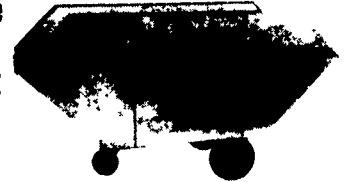
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*Shear, C. B. and M. Faust 1971. Nutritional Factors Influencing the Mineral Content of Apple Leaves. J. Amer. Soc. Hort. Sci. 96(2): 234-240

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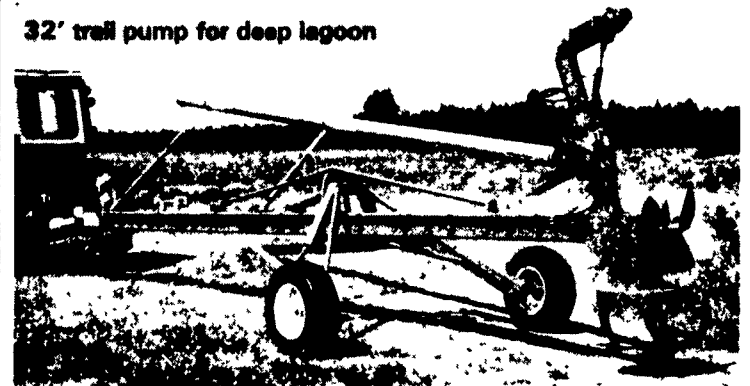


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