

Feeding patterns

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feed less than two pounds of hay equivalent per 100 pounds of bodyweight per day for very long," the dairy scientist cautioned.

"I like to think in terms of maximum feeding levels, rather than minimum amounts," he continued. He affirmed that a dairyman "would never go broke feeding an early lactation cow," and suggested that at least one forage in the total ration be offered to the point of near refusal.

Getting back to hay equivalents, Ace explained that three pounds of corn silage testing 30 per cent moisture are equal to one pound of hay (figuring hay to be 90 per cent dry matter). With haylage (testing 50 per cent moisture) it takes about 1.8 pounds to equal one pound of hay.

"If you can't get it into 'em in terms of forage, then you've got an expensive feeding program," Ace warned. He pointed out that grain feeding levels have become much more critical since protein prices skyrocketed a couple years ago and the economics of

feeding are therefore much more important today than they were "in the good old days."

Ace suggested that dairymen calculate their hay cost: milk price ratio as well as their grain costs: milk price ratio. To keep things on a standard basis, he recommended that a formula be used to correct all milk to four per cent buterfat content. This figure can be obtained by multiplying the pounds of milk given on a daily basis by .4 and adding this figure to the daily pounds of buterfat produced after you've multiplied that by 15.

Ace offered feeding ratios, but pointed out that such formulas would not hold true for top producers. He recommends feeding early lactation cows in a more liberal manner, while closely monitoring the feed and production status of cows in mid-lactation or beyond.

If a dairyman wishes to test his cows for production responses to varying levels of feeds, Ace suggests that it be done abruptly, explaining that any response would

come within 24 to 48 hours. Then, if the cow cuts her production as a result of lower levels of grain, for example, the dairyman can switch her back to stronger levels the next day and not risk a permanent loss in production. A permanent loss for the lactation would not usually occur in less than seven to 10 days, Ace said. Another advantage to making such changes abruptly is that there is less chance of other factors, such as the weather, varying, and interfering with your experiment.

Regardless of how a dairyman operates, Ace is a firm believer in forage testing, and he recommended the practice to all who are concerned about their feed costs. Beyond that, he stressed the importance of having balanced diets before the cows and emphasized that balancing rations properly is next to impossible without some sort of feed analysis taking place first.

Ace further recommended that dairymen feed their roughages "in proportions to the forage supply that you have." Explaining the statement, the dairy scientist said that such a procedure would balance the feed supply more evenly,

avoid drastic changes in qualitative feeding patterns, and reduce subsequent reactions in the cow's gut to a very minimum.

"If you must make changes, do it when you have the fewest fresh cows coming in," Ace continued. He told the dairyman that the rumen is a marvelous organ - capable of digesting and using a wide variety of materials which non-ruminants can't utilize. But, he cautioned, the rumen is also a delicate organ which can't be expected to adjust from one feed to another and another without showing some drop in milk production. Therefore, the fewer changes the better.

"Anytime you put great emphasis on either hay or corn silage you have a greater chance of problems," the dairy specialist went on. Mineral balances are of particular concern in these instances, and he suggested that proper balances be calculated. Over-feeding of minerals is being encountered. Another concern with silage - especially haylage - is heat damage. Up to 80 per cent of the digestible nutrients could be lost through this process, he warned.

A forage feeding program for dry cows would not in-

clude more than 50 per cent corn silage or 35 to 50 per cent alfalfa, Ace recommended. Corn silage is low in calcium, phosphorus and protein, he explained, while alfalfa in large amounts would give the cow an oversupply of protein and calcium. "Go to a balanced feeding program, one that's unbalanced is likely to cause more metabolic problems," he warned.

"If you have generally poor quality forage - silage or hay - you can improve digestion and minimize metabolic problems with a pound or two of good alfalfa hay added to the ration, the Penn Stater continued. He also recommended that the poorer quality forages be limited in the feeding program during base building periods, but not for more than 60 to 90 days.

Turning his talk to the use of non-protein nitrogen (NPN), Ace said it was alright to use such feeds, but the key is to incorporate them into the ration properly. "The cows should have a two to four week acustoming period because it takes a little while for the organisms in the gut to learn how to utilize NPN," explained Ace.

"In the Fall we always encounter a few problems with green-chopped corn - corn which hasn't been fermented," Ace continued. "Corn needs from three to five weeks to ferment in the silo," he explained, "green-chopped corn is just not well used by the milking animal." He also suggested that dairymen shy away from feeding freshly fermented silage.

Dry cows should be limited to one-half a pound of grain closer to home, Ace bodyweight, according to Ace. Also, the grain ration should not be changed for these animals, especially

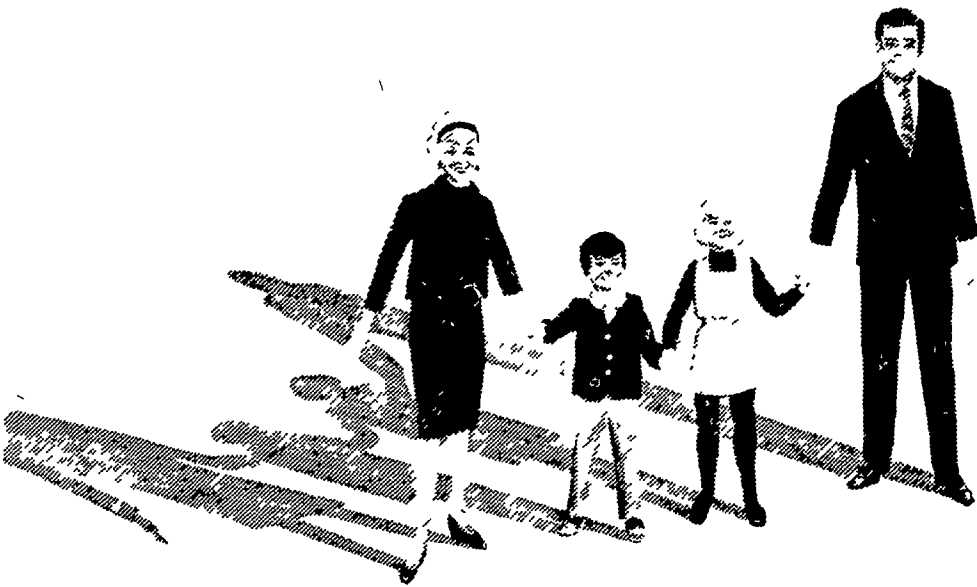
near the end of their dry period. "Get them accustomed to the milking ration several weeks before they come fresh," Ace recommended. In any case, dry cows should have access to all the good forage they can handle.

Grain feeding programs for lactating cows have changed considerably, Ace said. "We have been so accustomed to feeding large amounts," he exclaimed, pointing out that it often wasn't necessary. He recommends that a ration contain no more than 55 per cent grain. "A cow can't use a higher level of energy than that," he noted, "and the rumen organisms can't use the extra grain." Hitting closer to home, Ace suggested that feeding excessively high amounts of grain to a cow would be like a man working all day on coconut cream pie. "You wouldn't last on such a diet," he lectured.

A practical maximum for grain feeding is 2½ pounds per 100 pounds of bodyweight under conventional feeding systems. In a complete ration program, not more than 55 per cent of the dry matter intake of the cow should be from grain.

A final topic in Ace's presentation was mineral feeding. He noted that there are many good products on the market, but - "if you don't need 'em, you're wasting money." In contrast to years gone by when mineral deficiencies were rather common, today's feeding programs have oftentimes become so sophisticated that minerals are contained in various supplements and grain mixtures. Feeding additional amounts may not be necessary, and there is a possibility that many dairymen are actually over-feeding minerals now.

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