

# Computer Technology and Dairy Management

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Dairy producers really became involved with computerized dairy management during the early to mid 1950s. This was before the small electronic calculator or hand held computer were common.

The North Dakota Dairy Herd Improvement Association (DHIA) started recording all of the data necessary for a complete dairy management program about this same time. Many different programs were developed by more than a dozen state and regional centers.

Progress and improvements have eliminated some of the dairy records processing centers. The remaining ones have become very efficient in processing records and returning them to the dairyman for use in making management decisions.

North Dakota dairy producers have their records processed at Ames, Iowa by the Midwest Dairy Records Processing Center. Most data is still mailed to Iowa, but the butterfat test, protein and somatic cell counts are recorded by a personal computer and transmitted to Iowa via telephone each test day. Producers receive their records from the processing center approximately six days after test day.

These records contain production, feeding, and breeding records which dairy producers use in routine management of their herds. Perhaps the feeding recommendations are of most interest to dairymen because they have a nearly immediate impact on profitability of the herd. The feeding suggestions include protein level and amount of grain required for each cow in the herd.

These feeding recommendations work well for producers who house their herds in stanchion barns where individual feeding is practical. Cows housed in free-stall or loose housing systems and milked in parlors do not receive the proper amount of grain because the length of time the cows are in the milking parlor is not compatible with length of time required for cows to eat the recommended amount of grain. Few cows received the proper amount of grain but most are over- or under-fed.

Several approaches have been taken to assure proper nutrient intake by cows of various sizes, ages and produc-

tion levels. These included total mixed ration (TMR), supplemental grain feeding, and in the mid 1970s the magnetic activated feeding stall appeared on the dairy feeding scene. The TMR feeding system involves mixing rations of various nutrient content to meet requirements of different groups of cows. It has met with most success when used in large herds or as a means of providing energy to cows which cannot eat enough grain during milking.

The magnetic feeding system does not utilize computers. The system provide grain to cows which have magnets attached. There is no limit to grain intake and some feed is wasted. The difference between magnet and transponder controlled feeding systems is in the amount of control over grain intake. The transponder allows the cow to have a certain amount of grain available to her during a 24-hour period. The grain may be allocated to a certain proportion of total during four six-hour periods of the day.

The early transponders were adjusted for proper feed allocation by catching the cow and manually making the adjustment. The feeding systems currently being marketed can be controlled via computer without catching individual cows.

Dairy producers have many options when purchasing feeding systems. They may:

1. Adjust grain allowance according to milk production.
2. Feed a grain mix only or feed grain mix plus mineral or protein supplement as required.
3. Report which cows did not eat all of the grain allowed.
4. Number of times a cow goes to the feeder can be recorded for management purposes.
5. Interface with electronic milk meters that automatically adjust amount of grain available to cows.

The emphasis and need has been in, but not limited to, the area of least-cost balanced feeding programs. Availability of PC hardware and software has made it possible for dairy producers to employ computer technology to provide a variety of management reports.

Managers can detect drops in milk production and/or feed consumption which may help in heat detection.

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Records produced may indicate average days cows are dry, expected calving dates, expected heat dates and other management reports.

A Florida producer generates between 60 and 100 management reports per week! The list of useful management reports is probably limited by lack of imagination rather than by computer and/or electronic technology.

The electronic age as brought dairy management into a very sophisticated state and promises to do even more that will help managers know more about their operation than

ever before. Time saved may not be great but wiser decisions will be made because of more and better information.

New techniques must result in greater profitability if they are to survive the test of time. The projected "pay back" in increased production or feed and labor saved should be in the range of 2.00 to 3.5 years depending upon system purchased, production level, herd size, interest rate and use made of system. At the present time there are at least 20 computerized feeding systems in use by North Dakota dairy producers.