

Microcomputers In Dairy Practice

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The field of computer technology is affecting all facets of our lives, not the least of which may be our veterinary practices. Articles in recent veterinary journals are quick to point out the advantages of a computer system in a practice. Two small card programmable computers (CPCs) have been in use in this veterinary practice for the past year. Judging from field experience, the small microcomputer can be a valuable tool in the diagnosis and correction of herd nutritional problems.

There are approximately three CPC models available to the practitioner for which useful nutritional programs have been or are being designed.* They are the Hewlet Packard #67 non-printer, the Hewlet Packard #97 printer model, and the Texas Instruments model #59, with or without the printer board. Depending on the source of purchase, these machines will range in price from slightly over \$200.00 to as much as \$750.00, so it is wise to shop for the best price. Newer generations of more sophisticated CPCs will become available in the future. At present, these three calculators are, in my opinion, satisfactory for any practitioner beginning nutritional consultation.

As anyone who has worked even a relatively simple dairy ration knows, it is laborious work. The large amount of addition, subtraction, multiplication and division lends itself readily to simple mathematical error. This is where the CPC takes out the drudgery. It is quite easy to do in 15 minutes with a CPC that which used to take 4-6 hours with a pencil and paper. With the program being used in our practice, once the basic ration is analyzed, it is a simple matter to compare its nutritional excesses and deficits for any cow's production level, while also considering her body weight and gestation state.

Of the two CPCs in our practice, I have a favorite, the HP #97 printer model. I would strongly recommend that anyone considering purchase of a CPC have a printer model because it leaves a written log of what has been entered. This gives one a chance to physically check the figures entered for accuracy.

As with any practice aid, the veterinarian using it must still be able to sit down and look at the final results and answer the question . . . "Do these figures make common sense?" Perhaps one of the biggest benefits I have found in the time I

have used this device is that I am much more conscious of feedstuffs and their range of normal values. It is disturbing to note the number of laboratory feed analyses which vary wildly with standard values given for that particular feedstuff. The most common error is a misplaced decimal point. I often refer to publication #1684 *U.S.-Canadian Tables of Feed Composition*, available from the National Academy of Sciences, Washington, D.C., to be certain that laboratory analyses of feedstuffs are within reasonable ranges.

The program being used in our practice was developed by Dr. Ben Norman, extension veterinarian, and Dan Drake, a graduate student, both from the University of California at Davis. Dr. Norman has explained that his program was designed not so much for a veterinarian to become a nutritional formulator, but to allow the veterinarian to use the CPC as a diagnostic tool in evaluating the general nutritional program being used in a herd. This enables the practitioner to more easily solve some of the myriad problems associated with nutritional excesses and deficiencies.

It would be my advice to any veterinarian who is contemplating the use of a CPC in his practice to attend one of the AABP nutrition seminars, either in his district or at the national meeting, as some familiarization with the programming and the use of the machine greatly facilitates one's ability to use it. The more things that you ask a CPC to do, the more complicated the program becomes, and hence, the more difficulty one has in comprehending what and how the information should be entered.

I must admit that the CPC in our practice gets used for more than just evaluating a ration for its imbalances. We use it for ration formulation too. The machine is fun to use and our clients seem quite enthusiastic about it. In most instances correction of problems with imbalances in protein, energy, fiber, Ca and P have led, over a period of time, to improved production and/or reproduction.

The most important things from my point of view for a practitioner to remember are that:

- (1) If you put garbage (wrong information) in, you get garbage (even more erroneous information) out.
- (2) The possession of a CPC and a program does not an expert make. It is my estimation that it took me about 100 hours to program the calculator and work sample rations before I felt comfortable using the machine with clients.

* *Personal communication with Dr. Ben Norman, University of California at Davis, and Dr. Tim Leasch, V.P.I., Blacksburg, Virginia.*

(3) The cow whose ration you are evaluating is the ultimate computer. It really doesn't matter how well or exacting your ration calculations are on paper. If the cows don't milk, don't be afraid to make changes. Her production is ultimately what pays the bills.

(4) **The CPC enables you to do a better job of being a veterinarian.**

References

1. Fillmore, Ivan L. "Things Computers Can Do", *Veterinary Economics*, May, 1979. - 2. Trayser, Charles V. "An Affordable Mini Computer System", *Veterinary Economics*, December, 1978. - 3. Walker, William S. "Money Saving Computer in a One-Man Practice", *Veterinary Economics*, May, 1979.