Dairy Herd Management and Veterinary Service in Michigan

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A study of dairy herd health as it relates to dairy income in New York State was supported by New York State Veterinary Medical Society and the Cooperative G.L.F. Exchange, Inc. Economic benefits to dairymen were outlined by Roberts and Decamp, 1965, and Morrow, 1966. Generally, improvement in milk production, reduced mortality and other economic factors attributed to veterinary service, showed a $3-5 return to the dairymen for each $1 invested in veterinary services. More recently, Barfoot, et al. (1971) reported that Ontario dairymen spend from $8 to $35 per cow per year on veterinary service. The Ontario dairymen who spent $35 per cow on veterinary services were receiving more net income from dairying than those that spent considerably less for veterinary service. One may conclude from these studies that veterinary service is an economically important input into milk production units.

Veterinary service in Michigan dairy herds averages about 1-3% of the total expense (Speicher, 1972). This study was initiated to determine what veterinary service is contributing to milk production units. Calving intervals, calf mortality and culling rates for health reasons were examined in each herd studied.

Dairy Herds and Veterinary Practices

Thirty-eight dairy farms were selected by their veterinarians for this study. Pairs of dairy farms were selected within each practice. The pair consisted of similar dairy farms, except that one of a pair used maximum (complete) veterinary service and the other minimal (limited) veterinary service. Veterinarians from seven different Michigan practices cooperated in this study. All of the herds were in D.H.I.A. or O.S. testing programs. The data was collected from the farm records: Breeding Calendars, testing records, and finanacial records served as sources. Veterinarians supplied the data on veterinary services in each herd. The data presented here is for the calendar year 1971 for these herds. The information was completed on 36 herds and summarized by computer.

Table 1
Herd Size and Milk Production in Dairy Herds

	Veterinary Service		
	Limited	Complete	Total
No. Herds	19	17	36
No. Cows	55.5	68.6	61.7
Milk Production	13,373	14,657	13,979
B. F. Production	499	531	514

Results and Discussion

In Table 1, the average milk production and herd size for the two groups are shown. The group using complete veterinary service averaged 13 more cows per herd and 1284 pounds more milk per cow. The overall average milk production for these herds is 13,979, just slightly higher than Michigan D.H.I.A. herds.

The difference in milk production would increase the gross income per cow approximately $65 for the herds with complete veterinary service.

The average days open per cow was 123 days and the calving interval was 402 days. The data indicated no significant difference in days open (120 vs 126) or calving interval (400 vs 404) for the two groups (limited vs complete), respectively. Services per conception average 1.7 for the 36 herds with the limited group averaging 1.6 vs 1.8 for the complete service herds, again not a significant difference.

Nearly 50% of these dairymen inseminate their own cows (Table 2) which is a trend that appears to be increasing in Michigan. There appears to be a need for short courses to train dairymen to inseminate cows and also improve their skills in semen handling and insemination. About 75% of the dairymen kept a bull mainly to breed heifers, but several dairymen were breeding cows on 3rd and 4th services to a bull.

The percentage of pregnancies from first services

Table 2

Summary of Breeding Practices in Dairy Herds

	Veterinary Service		
	Limited	Complete	Total
% of Herds:			
Use A.I.	100	94	97
Inseminate own	37	56	46
Keep a bull	68	88	78
% of Pregnancies:			
First service	49.0	44.6	46.6
Second service	18.4	23.4	21.0
Third service	8.1	13.3	10.8
More than three	3.9	11.2	7.8

averaged 46.6% (Table 2). This figure is much lower than 60-70% non-return for 60-90 days reported by A.I. Units. However, this 46.6% was calculated on the basis of pregnancies, either calvings or pregnancy diagnosis data was used to verify the pregnancy. If you total the % pregnant from the various services, an average of 86.2% of the cows were determined to be pregnant after breeding. The other 13.8% would include cows that were bred, but did not conceive or were not bred because of other reasons such as low production. The data indicated that the group with complete veterinary service get a higher % of their cows pregnant (92.5%) than the limited service group (79.4%).

Neonatal calf losses are greater in herds using limited veterinary services (16.7%) than herds on complete service (11.3%, Table 3). The calf losses are divided into three periods: at birth, 0-14, and 15-60 days of age, and the higher death rate was evident in each age category. The largest difference

Table 3

Neonatal Calf Losses in 36 Michigan Dairy Herds During 1971

	Veterinary Service		
	Limited	Complete	Total
Avg. No. calves born	56.6	65.0	60.6
% Live births	94.0	94.5	94.3
% Mortality			
At birth	6.0	5.5	5.7
0-14 days	5.8	4.6	5.3
15-60 days	4.9	1.2	3.1
Total % calf mortality	16.7	11.3	14.1

was in the 15-60 day calves (4.9 vs 1.2%) for the limited vs complete service, respectively. The dairymen in the limited service group were more reluctant to call veterinarians for sick calves than the complete service group in general. The difference in calf losses is a direct loss to the herds, but perhaps a larger loss may be indirect losses resulting from calf losses. Genetic material is lost, culling opportunities for herd improvement are decreased, and animals that recover may have lost considerable potential for maximum production; these three factors may well be a larger total cost to dairymen than death losses.

Dairymen were asked how they handled dry cows regarding mastitis treatments and 61% treated only problem cows, 28% treated all dry cows, and 11% did not treat any dry cows for mastitis. There were no significant differences between groups due to type of veterinary service used.

In Table 4, the dollars spent per cow by dairymen is shown. The herds using complete service spent significantly more per cow, $20.29 vs

Table 4

Dollars Spent on Veterinary Service by Dairymen on a Per Cow Basis

	Veterinary Service		
	Limited	Complete	Total
Total	12.70	20.29	16.69
% of total for:			
Professional service	44	50	48
Drugs	36	31	32
Call charges	20	19	20

$12.70 than those herds using limited service. Professional service accounted for 48% of the total $16.69/cow, 32% was medicine and vaccine costs, and 20% of the total was considered call charges. As more money was invested in veterinary services by dairymen, an increasing percent of total was for professional services. Consultation, examinations, and diagnostic work were the major items termed professional services in this table.

An average of 42 calls were made on these diary farms during 1971, (Table 5). The average call was $24.52, however, the calls in complete service

Table 5

Number of Calls per Dairy Farm

	Veterinary Service		
	Limited	Complete	Total
Number of calls	35	51	42
% Emergency calls	23	29	27
Avg. charge/call	$20.14	$ 27.30	$ 24.52
Total drug purchases (other than veterinarian)	$92.00	$128.00	$109.00

herds averaged $7.16 more than calls in limited service herds. Most of the herds using complete veterinary service had a regular schedule for herd work. When work was planned in advance, more work was completed during each call, accounting for the higher cost per call. Surprisingly, the percent of calls classed as emergency by veterina-

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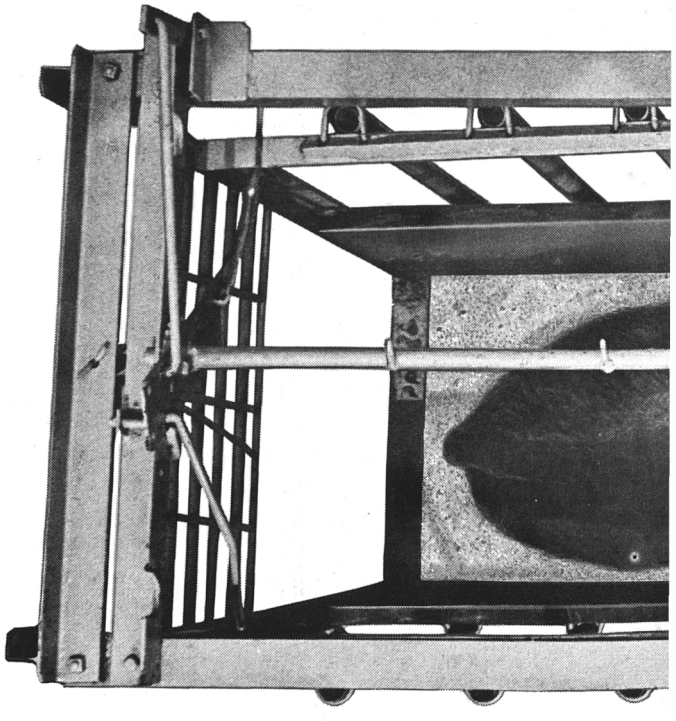

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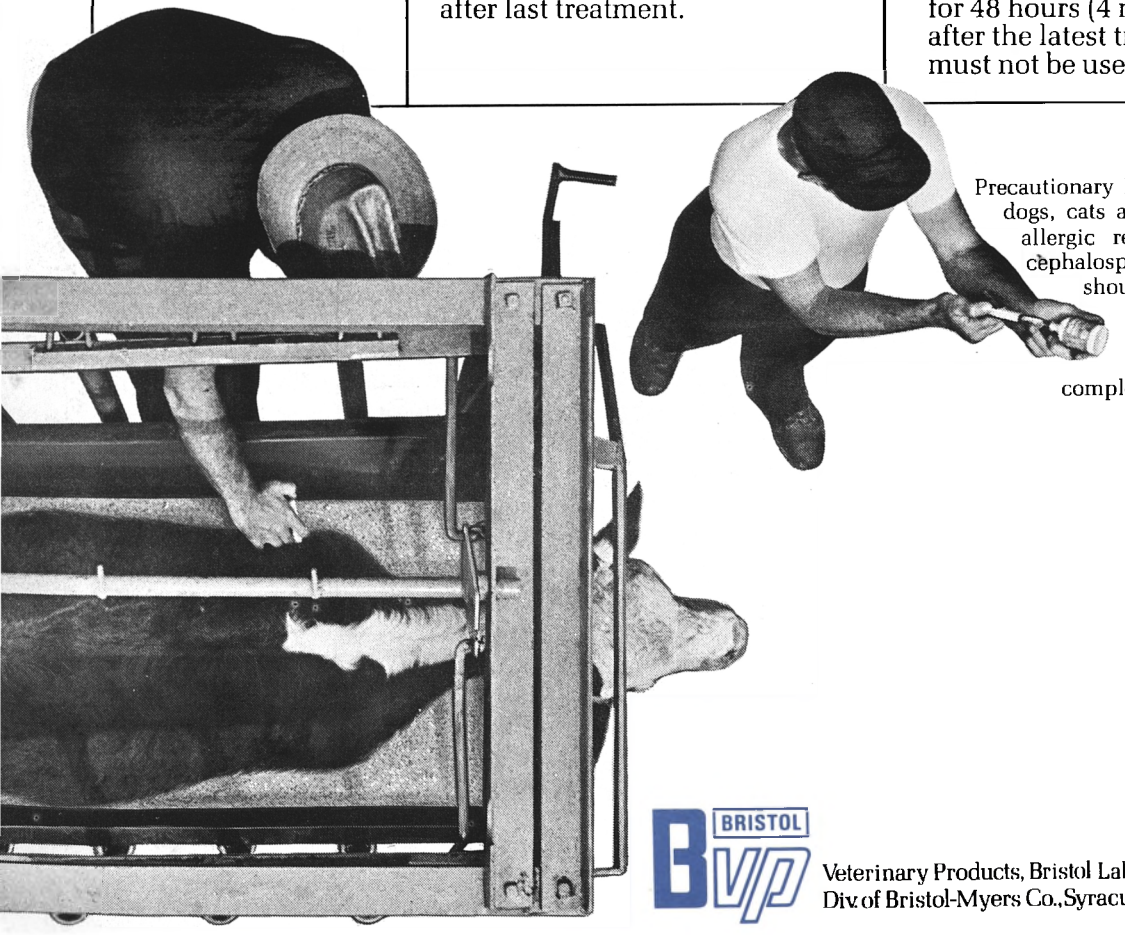

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major beef breed association and most major stock shows in the country.

At first, there was a great controversy over the new policing procedure to enforce ethical and age-show rules. After Dr. Burch and I disqualified a heifer in the Chicago International Stock Show in 1955, the owner entered suit against the American Angus Association. We had expelled the animal from the show, not on a question of age, but on the basis of unethical fitting. The case was tried in court in a million dollar lawsuit and the exhibitor lost. The Angus Association and the veterinary profession won.

The Legal Rights of a Breed Association

The actual significance of this suit was to prove in a court of law that a breed association does have the legal right to police and enforce its rules and regulations and then take appropriate action. Apparently, none of the cattle, dog, horse, or other animal shows or breed associations at this point in history had their regulations brought to court trial and the legality tested.

In the late 1950's at the international show, Dr. Wayne Burch and I disqualified many steers in the three major beef breeds. This resulted in many suits, none of which ever came to trial. To the best of my knowledge, there has never been a suit involving the age determination (only) procedure brought to actual trial.

Determining age is not an exact science and does not reflect the pinpoint accuracy of chemical analysis. I wish there were a system in which chemistry could be utilized to give the exact age of an animal, but in the biological sciences there are many variables. The "mouthing" procedure is a human judgment, much like a medical diagnosis without laboratory tests based on observation, experience, and training. The judgment ability comes of knowing standards and understanding variations in dental growth and their causes. It comes with examining thousands of sets of teeth and filing away in your mind the results of these examinations. You subject yourself to this sort of decision every time you go to any professional person for diagnosis. The procedure is an art, not an exact science which is what laboratory procedures provide.

Future Needs

As long as there is competition involved in livestock shows, there will be the tendency among some breeders to attempt to bend the rules on age. This same holds true, and even more so, with performance tests and bull test stations today. As long as there is this determination among breeders to win, there will be a need for some method to determine accurately the ages of cattle. Though we realize the imperfections of the system, "mouthing" is the best measure we have been able to come up with. Though breeders may curse it, argue its merits with rancor, pro and con, or shout about its injustice, there are few who would argue that it has made a valuable contribution to protect the credibility of the industry, cattle competition, including shows and bull gain test stations.

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rians was not significantly different for the two groups. It has been theorized by some that herds on a planned veterinary service basis may have less emergency type calls, which was not evident in this study. Dairymen spent less than $2.00/cow on non-veterinary drugs (Table 5) in this study.

Generally, the dairymen that used the most veterinary service were more satisfied with results from their investment in veterinary services than the group spending the least for veterinary service. In many cases, these were the same veterinary services which one dairyman considered a good investment for his dairy operation while the neighbor considered veterinary service a cost which should be reduced for maximum profits. Most of the former dairymen and veterianarians operated on a loose verbal contract which did not specify per call or per cow charges, rather a payment for services rendered basis.

Summary

Thirty-six dairy herds were divided into two groups: 1) limited veterinary service and 2) complete veterinary service. The herds using complete veterinary service averaged 14,657 lbs. milk/cow, 404 day calving interval, 11.3% calf losses and invested $20.29 per cow in veterinary services; while the comparable limited veterinary service herds averaged 13,373 lbs. milk/cow, 400 day calving interval, 16.7% calf losses and invested $12.70 per cow in veterinary services. Except for calving intervals, the differences are statistically significant ($P < .05$). Veterinary service and herd management are important input factors for economically successful milk production units.

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