Carnation Milk Farm

Veterinary work and research carried on at the Carnation Farm

*E. M. Gildow, D.V.M., M.S.**

VETERINARIANS are being called upon more extensively of late to aid commercial enterprises in their problems with diseases of animals and birds. After fourteen years of association with experimental work, teaching and farm practice with land grant colleges, the opportunity was presented the author to act as veterinarian at Carnation Milk Farm and as supervisor of Albers Milling Company feed research carried on at Carnation Milk Farm.

It is hoped that this report will give some idea of the type of work involved in a project of this kind.

The number and type of animals and birds at Carnation Milk Farm is as follows: pure bred Holstein cattle, 658; miscellaneous calves for research, 50; pure bred Percherons, work horses, saddle horses, and ponies, 35; dogs, (Great Danes, English Setters, Dalmations, Springer Spaniels, Scottish Terriers, and other miscellaneous dogs, 50; chickens, 5,000; pheasants (mostly Chinese), 500; mink, 26; and rabbits, foxes, hogs and the like have been or are now available for use in feed and disease studies.

The veterinary work on the dairy herd is not a cross section of an average dairy practice. Every effort is made to keep old cows that have good milk and fat records in breeding condition. This increases to a large degree the study and the treatment of breeding problems. In cows, the two most serious causes of sterility are cervicitis and metritis. Cystic ovaries, whether or not the condition is associated with metritis, causes considerable trouble. The most serious causes of sterility in heifers has been vaginitis (granular vaginitis, trichomoniasis, and possibly other causes). This problem has been practically eliminated by the use of artificial insemination. Many other causes of sterility are encountered. Certain families of cows are apparently less susceptible to breeding disturbances than others.

The most successful means of treating the above conditions are: for vaginitis—none (artificial insemination); for cervicitis—surgical removal of a portion of the protruding cervix if present, followed by swabbing the cervix with Lugol's solution; for metritis—induced heat followed by douching the uterus with one quart of a solution of one ounce of tincture of iodine in one gallon of water or the injection of two ounces of a 1:1,000 soution of tincture of iodine in glycerine (7½ cc. of tr. of iodine in one pint of glycerine) into the uterus; for cystic ovaries—rupturing of the cysts and the injection of 10 cc. of corpora lutea extract weekly.

Artificial Insemination

Artificial insemination has been carried on in the Carnation herd for the past two years. It has been possible by this means to more extensively use the proved herd sires (All-American bulls and bulls proved for milk and butter fat by dam-daughter comparisons). It has made possible the breeding of many heifers by aged bulls that would have been necessarily bred by young bulls. Finally it has made possible the complete elimination of all evidence of trichomoniasis.

* Carnation Milk Farms, Carnation, Washington.

The following table (Table I) on 912 inseminations shows the breeding efficiency of five of the bulls used most. The tube method. The calves were tested before vaccination and at monthly intervals after vaccination. No evidence has been

TABLE I

Age of Semen	1st Day	2nd Day	3rd Day	4th Day	Single Insemination, 471 Heat Periods	Double Insemination, 378 Heat Periods
Cows pregnant	253	41	18	2	144	179
Cows not pregnant	472	94	29	3	227	199
Inseminations per conception	2.86	3.29	2.61	2.50	3.20	2.65

comparative breeding efficiency of cows inseminated with one, two, three, and four day old semen, and the comparative breeding efficiency of cows inseminated once during a heat period as compared with those inseminated twice at a twenty-four hour interval is shown. The breeding efficiency data presented in this table is based on all cows bred, whether or not they ever conceived, and not on a selected group of cows. A definite diagnosis of pregnancy by manual examination was made in every case.

Calfhood Vaccination

The following table (Table II) on calfhood vaccination shows the result of vaccinating calves at 8 to 11 months, and 5 months of age, and on the durations of reactions at 1 month, 3 months, 6 months, and 12 months. The tests were all conducted by Dr. C. M. Hamilton of the Western Washington Experiment Station at Puyallup, Wash., using the standard

TABLE II

Number of Calves Vaccinated	Age at Vaccination (months)	Agglutination Reactions Before and After Vaccination											
		Before Vaccination	After Vaccination										
			1 Month			3 Months			6 Months			12 Months		
			Pos.	Sus.	Neg.	Pos.	Sus.	Neg.	Pos.	Sus.	Neg.	Pos.	Sus.	Neg.
25	8 to 12	All	22	3	0	6	18	1	3	6	16	0	10	15
36	6 to 7	Negative	31	5	0	7	19	8	1	6	27	2	6	25
41	5		36	4	1	4	18	21	1	10	29	..	..	..
42	5		37	5	0	..	..	..	..	..	..	..	..	..
144 (total)			126	17	1	17	55	30	5	22	72	2	16	40
Percent			87.5	11.8	0.7	16.6	53.9	29.4	5.5	22.2	72.7	3.4	27.6	69.0

as well as for poultry. The veterinarian is especially well prepared to guard the

Nutrition Studies

One of the most interesting parts of the work at Carnation Farm is that concerning the Albers Research Station which has to do with the proving of feeds put out by the Albers Milling Company. Many trials are conducted each year on feeds for poultry, dairy cattle, horses, hogs, milk goats, sheep, turkeys, pheasants, dogs, foxes, mink, and rabbits.

Animals used for feed research must be healthy. Birds with coccidiosis, paralysis, coryza, or other disease conditions make poor subjects for nutrition trials. This situation is true for other animals (such as foxes, pheasants, hogs, and dogs)

(Continued on page 46)

CARNATION MILK FARM

(Continued from page 19)

health of animals used for feed trials, and is, furthermore, well prepared to accurately determine the various types of nutritional deficiencies that may show up on nutritionally inadequate feeds.

All of us realize the necessity of supplying housed poultry with an adequate, balanced ration. All essential nutrients must be supplied. Dogs, as well as foxes, mink, hogs, and even large roughage consuming animals (cattle and horses), fed exclusively on commercial feeds must in most cases be supplied with specially balanced nutritious feeds. Dog food must contain adequate vitamin D to prevent rickets. The Great Dane puppy requires ten times the amount of vitamin D per pound of body weight that the terrier does. Vitamin A must be provided foxes and mink. Iodine must be present in the feeds of all domestic animals on the Pacific Coast and in the Great Lakes region. Extra iron must be provided in some areas, and even cobalt in some. The proper amount of manganese must be present in poultry starter feeds.

Present Problems

In addition to the gradual accumulation of nutritional knowledge that must be incorporated into commercial feed operations, present Government restrictions, unavailability, and high prices have made it necessary for new products to be tried out. Some of these problems are as follows:

1. The Federal Government has recently put a limit on the amount of vitamin A as found in fish oils in livestock feeds. Artificially dried grasses are a good source of carotene, the precursor of vitamin A, but carnivora do not relish dried grasses in their feed. Palatability is an important factor in commercial feeds as it is in all feeds.

2. The rapid rise in price of powdered milk has made its use prohibitive in some feeds. Milk has been used extensively in poultry starter and breeder feeds, and in dog, mink, and calf feeds. The protein and minerals in milk have high nutritional ratings; but it was for the vitamin B fraction, riboflavin, and to some extent other B fractions that in the past has made powdered milk practically indispensible in many feeds.

During the past two years, feed research at the Albers Research Station has made available lower priced sources of the vitamin B fractions for use in poultry, dog, and calf rations, has proved the nutritional adequacy of valuable low priced sources of vitamin D, and has discovered valuable protein substitutes through the combination and balance of essential amino acids from various sources.

The present wide-awake commercial feed concern is very much aware of the importance of the vital nutritional factors in feeds for livestock, and is bending every effort to make feeds that are superior. Such a concern is also endeavoring to supply the essential nutrients from sources that will allow competitive prices and at the same time that will effect savings for the feeder of domestic animals. More veterinarians should have the opportunity to observe the exhaustive tests that are conducted on feed ingredients (moisture proteins, minerals, vitamins, and fiber) by commercial concerns in order that they may be blended into a balanced diet for the purpose and species intended.

MEDICINE

(Continued from page 17)

the American Veterinary Medical Association.

Dr. Cornwell was born near Ankeny, Iowa. Immediately after Iowa State awarded him his degree in veterinary medicine, he began work as an assistant in the small animal clinic. Dr. Cornwell is a member of Gamma Sigma Delta, Phi Zeta, and the American Veterinary Medical Association.