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Dairy Production Medicine in the United States

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Dairy veterinary medicine in the United States is at a major crossroad. The next decade will determine whether this sector of the veterinary profession will flourish or wither.

There are four major influences shaping agriculture in the United States and these forces shape the dairy industry and by extension the dairy veterinary profession.

1. Dairy production is increasingly consolidated and industrialized.
2. Markets for food, including dairy products are increasingly global.
3. Food safety issues (highlighted by the response to a single cow with BSE in the U.S.) are reshaping production practices.
4. Consumerism has altered the public's influence on the array of dairy products marketed and the demands placed on the producer in terms of both food content and production and processing practices.

Consolidation in the U.S. dairy industry

Consolidation in the dairy industry (fewer, larger farms) is a trend that is decades old (Table I)¹.

Consolidation within the dairy industry has been pushing the number of herds down for decades. Currently there are approximately 70,000 dairies in the U.S. By the end of the decade, projections estimate that there will be fewer than 50,000 farms (a loss of 20,000 dairies in the next 6 years) and by 2020 as few as 15,000 dairies (Table 1)². Approximately 9 million dairy cows can currently meet demand for milk in the U.S. If all herds had 1,000 cows, 9,000 dairies could meet the U.S. demand for milk. This rapid decline in the number of dairy herds will have a marked impact on dairy veterinary medicine. Herd numbers, not cow numbers, drives much of the demand for veterinary services. This conclusion is consistent with other evaluations of the demand for food animal veterinarians in the U.S. (Getz 1997, Brown 1999)^{3,4}.

The issue facing the dairy veterinary profession is not the number of veterinarians serving the dairy industry, but rather what roles they will play and whether they are suited to the roles the

industry needs. Their suitability will depend on their education, experience, personal work and lifestyle preferences and geographic distribution.

As this consolidation progresses, the types of services offered by the dairy veterinarian also changes. Traditionally (and for the most part still currently), dairy veterinarians provide four kinds of services. Veterinary education has long reflected these some of these roles for the profession, but has been slow to adapt to the educational preparation necessary for other roles. These roles are: technical services, drug distribution, management consultant, herd management. The roles needed for dairy veterinarians vary depending on the sector of dairy industry being served. The most significant challenge facing young and mid-career dairy veterinarians may be whether they can shift the focus of their professional efforts to adapt to the changing demographics of the dairy industry they serve.

Supply of dairy veterinarians

According to American Veterinary Medical Association (AVMA) figures for 2002, there are about 8,000 veterinarians in the U.S. whose practice activities probably include dairy veterinary work (Table 2) ^{5,6}. In contrast, there are fewer than 200 exclusively porcine practitioners and about 250 poultry practitioners listed, both industries that have largely completed their consolidation. Interestingly, there are about the same number of exclusively pet bird practitioners in the U.S. as there are veterinarians serving the entire poultry industry. Notably, Americans eat more chicken than any other meat. Most large animal veterinarians in the U.S. are men (77% male, in contrast to the practicing profession as a whole at 68% and 35% of new graduates) and they generally work in small practices (2 or 3 practitioners) and have slightly more than \$150,000 of their own equity invested in the practice (AVMA data). Adjusting for a reasonable return on their equity, annual earnings for large animal (bovine) veterinarians averages about \$75,000.

Currently approximately 17% of new graduates enter large animal or mixed practice. Only about 6% enter large animal exclusive or predominantly large animal practice. It seems likely that those 6% constitute the real entering pool of future dairy practitioners, roughly 150 new food animal practitioners per year. Spread evenly across the veterinary colleges of the U.S., this would be roughly 6 students per class. If the long term need for dairy veterinarians is in the range of 2,000 private practitioners, then current supply over a minimum of 20 years of practice should be adequate, even with a roughly 1/3 attrition rate.

New roles for dairy veterinarians

At the same time, it is apparent that the nation as a whole has a pressing need to sustain a cohort of food animal veterinarians to address public issues of national biosecurity, food safety and product certification, protection of the food supply, and to address issues of animal care and welfare, etc. There is a growing demand from U.S. society that food animal production be transparent in its practices, that food be produced under systems of oversight and monitoring, and the consumer products can be traced back to the producer. There are concerns by consumers that reach beyond the nutrient content or even safety of their food and retailers and food chains are demanding that specific production practices be adopted by suppliers and producers. Recent global political events have highlighted the vulnerability of U.S. animal agriculture to the introduction of rapidly contagious exotic animal diseases. Integrated food

chains that tie food systems from the producer to the consumer are seeking professional expertise in production practice efficiency, standardization and certification of production practices and in risk management. All of these are potential areas of growth for veterinarians trained to work at a broader scale with the dairy industry.

Implications for the profession and the potential for dairy veterinary medicine

The shifting demographic trends in the dairy industry and in veterinary professional education have significant implications for the profession. Periodic efforts are made to “attract” more students to food animal practice, both by the profession and within veterinary colleges. Even if these efforts were successful, it is not clear that an increased production (in number terms) is really needed. Training more students only for traditional dairy practice roles may not address the real need and may be a disservice to the student. The United States (either the government or food industries, or both) needs to build regional or national systems to support the education, employment, and professional function of veterinarians serving the dairy and other food animal industries.

Abstract

La consolidation de l'industrie laitière américaine au cours de la prochaine décennie va achever la transition des fermes laitières en un nouveau modèle de grandes fermes industrielles. Lors de cette transformation, la demande de vétérinaires en production laitière va diminuer et le rôle de ceux qui resteront va changer. La médecine vétérinaire en production laitière va en grande partie perdre son aspect technique au profit d'un travail de consultation, de régie du troupeau, d'implication à un niveau plus élevé dans la chaîne agro-alimentaire. L'enseignement vétérinaire aura aussi besoin de changer pour répondre à ces tendances.

References

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Table I.

Dairy Herds in the U.S. (1,000s)

herd size / year	1-49	50-99	100-199	200-499	>=500	All
1982	204.7	53.3	14.6	approx. 5,000 >200		277.8
1992	93.1	41.8	14.1	approx. 8,000 >200		157.2
2000	52.9 10%	31.4 19%	12.9 17%	5.4 18%	2.8 36%	105.2 100%
2010	18.2 3%	12.8 8%	7.2 10%	4.3 15%	3.3 63%	45.8 100%
2020	2.8 1%	3.5 2%	2.7 4%	2.3 9%	3.4 85%	14.7 100%

Taken from "Future Structure of the Dairy Industry": LaDue, Gloy, Cuykendall 2003
<http://agfinance.aem.cornell.edu/research.htm>. historical data from USDA / NASS

Blue #s are
% of U.S. milk

Table II.

Supply of food animal practitioners (does not include equine exclusive; most of these do cattle)

Likely bovine veterinarians	#	Other sectors	#
Bovine practice exclusive	827	Porcine practice exclusive	185
Mixed practice: 80% large	3,519	Poultry practice exclusive	251
Mixed practice	4,040	Avian exclusive (not poultry)	233
Totals	8,386		

September 2002 AVMA statistics for numbers; 2001 income figures.