

# Tips and tools for dairy practitioners to take an active role in a dairy's foot health program

Gerard Cramer, DVM, DVSc  
University of Minnesota, St. Paul, MN 55108

## Abstract

There are copious opportunities for veterinarians to get involved in providing foot health services. The type of services that could be offered include; lame cow detection and treatment, comprehensive hoof trimming, monitoring or training of farm staff and routine monitoring of hoof health data. These opportunities come with their own unique set of barriers and challenges. However, veterinarians are ideally positioned to overcome these challenges and, at the current time, there is limited competition for these type of services thus veterinarians should consider foot health management as a practice growth opportunity.

## Résumé

Il existe d'abondantes possibilités de vétérinaires à s'impliquer dans la prestation de services à la santé des pieds. Le type de services qui pourraient être offerts incluent : détection de vache et traitement boiteux, globale ou de surveillance de fraisage, de sabot à la formation de personnel agricole et la surveillance de routine des données sur la santé de sabot. Ces possibilités sont livrés avec leur propre ensemble d'obstacles et défis. Toutefois, les vétérinaires sont idéalement placés pour surmonter ces défis et, à l'heure actuelle, il y a une concurrence limitée pour ces types de services vétérinaires ainsi devrait envisager la santé des pieds comme pratique de gestion des opportunités de croissance.

## Introduction

As the dairy industry evolves, the role of the veterinarian continues to change with it. Traditionally, veterinarians are trained in a large number of basic and advanced clinical skills, yet increasingly these types of veterinary tasks are being performed by on farm staff. As a veterinary profession we have reacted to this shift by providing more consultative services. To provide these services successfully Nordlund<sup>13</sup> described several characteristics of successful veterinarians; they have intricate knowledge of herd data and, instead of having all the answers, they have positioned themselves as part of the management team so they can play a significant role in evaluating and implementing outside advice. Not surprisingly, veterinarians have gravitated towards providing services in areas that they have interest in and sufficient clinical skills. Typically these interest areas have included treatment and reproductive protocols, nutritional and feeding

management as well as young stock and milking management to name a few. One area that has received very little attention from practicing veterinarians is foot health management. This lack of attention is somewhat surprising as lameness is a painful, costly disease that affects the productivity of cows through its effect on milk production, culling, and reproductive performance.<sup>1,2,4</sup> In addition, lameness is also a major animal welfare concern as it is prevalent<sup>5,9</sup> and highly visible to the consumer. The objective of this paper is to illustrate what opportunities exist and what skills and tools veterinarians need to successfully provide foot health services and become part of a farm's foot health team.

## Lame cow detection services

Lame cow detection services are probably the easiest services for veterinary clinics to provide. It is well established that the majority of lameness cases do not get noticed by on farm staff<sup>5,15</sup> yet it has been shown that early treatment reduces the number of lame cows in the herd.<sup>6,12</sup> In the UK lame cow detection services are being offered with some success in conjunction with hoof trimming services by some veterinary practices.<sup>3</sup> There is more variation in herd size here in North America and for this reason the feasibility of providing this service is likely dependent on herd size. Providing lame cow detection services for larger herds is more difficult as locomotion scoring requires a lot of time to complete. Alternative scoring systems have been suggested<sup>7,10</sup> that veterinarians can use while providing other routine services like pregnancy diagnoses thus reducing time required for detection. Veterinary technicians could also be a valuable resource in providing this service. The investment in skills for lameness detection are minimal and would only require training in lame cow diagnosis.

## Lame cow trimming

Most veterinarians provide some lame cow services as part of their regular practice. Expanding this service with an investment in a chute and tools to increase safety and efficacy could be a viable option. Currently, the majority of farms would benefit from veterinarians providing this service as hoof trimmers are typically too busy to provide acute lame cow services. Because hoof trimmers are so busy, there is no competition for this service either. As veterinarians we have additional tools to treat lame cows including intravenous regional anesthesia and surgical options that can improve

the outcome and reduce the severity of lameness. The skills necessary to provide lame cow trimming include proficiency in hoof trimming, and knowledge of surgical techniques for severe foot lesions. Providing lame cow trimming services also dovetails well with providing lame cow detection services and has the potential to create significant change in a herd's lameness prevalence.

### **Providing comprehensive hoof trimming services**

In certain geographical areas, having veterinary clinics employ hoof trimmers to provide regular preventative hoof trimming services would be beneficial to producers as they would not normally have access to hoof trimming services due to the scarcity of trimmers. This is not an opportunity that is without risk, and thus would require significant investments in equipment and training. There would also be a significant time investment required before a hoof trimmer employed by a clinic has the skills to be proficient and the number of clientele has increased sufficiently to keep the trimmer busy. In areas where hoof trimmers are common, providing hoof trimming services has the potential to adversely affect the relationship with existing hoof trimmers. Veterinarians that offer comprehensive hoof trimming services need to be aware of this risk and work on maintaining a professional relationship with other hoof trimmers. To create this professional relationship with hoof trimmers it is important to know who the hoof trimmer is for each one of your dairies and communicate with that person on a regular basis. The skills required to provide comprehensive hoof trimming services are significant as it would require knowledge and skills in hoof trimming techniques as well as an extensive knowledge about lameness to support the clinic's hoof trimmers.

### **Training and monitoring on farm staff**

Possibly the greatest opportunity for veterinarians to get involved in hoof health is for them to provide training and monitoring programs for on farm staff. There is a significant need for veterinarians to get involved in training staff especially considering the turnover of employees and paucity of training programs that exist. There are several training schools that exist specific to hoof trimming, however what is truly needed on farm is a follow up program where people trained at these schools have someone that provides them with feedback and ensures there is no procedural drift down the road. Veterinarians are ideally suited to provide this feedback due to the relationship they have with farms and their routine presence on farms. Other areas that can offer opportunities for veterinary involvement are the development of treatment protocols and lameness detection programs. The skills required to develop these protocols and programs are varied. To be a competent hoof trimming trainer requires a significant skill set, however having the knowledge of what

is an appropriate functional hoof trim can be a good starting point to develop protocols and programs.

### **Monitoring hoof health data**

An area that has not been actively pursued by veterinarians is the area of actively monitoring hoof health on a routine basis. Traditionally hoof trimming records have been used retrospectively to investigate after foot health problems have occurred. With the advent of electronic recording devices for foot lesions, creating records has become more manageable but the use of electronic devices by hoof trimmers is still highly variable. An additional complicating factor when using hoof health data is the lack of standardization in coding and recording of lesions.<sup>16</sup> Several different chute side recording devices exist, however it is not always possible to link up data from these devices with on farm recording systems. With all these issues in recording hoof health, there are many opportunities for veterinarians to get involved. As a starting point, veterinarians can work with hoof trimmers and farm staff to establish and standardize the recording systems.

Record keeping systems can easily become very complicated thus veterinarians need to ensure that it is kept simple enough that the farm staff are likely to adopt it and use it properly. To keep record keeping simple, herd level monitoring systems can be developed to capture digital dermatitis, sole ulcers, white line disease and thin soles. An "other" category can be added to keep track of minor lesions. Simply tracking these 4 main lesions would capture the majority of lameness causes. Once a data recording system has been established, it becomes possible to set data driven goals, evaluate the process to achieving those goals, and make evidence based decisions.

With comprehensive recording systems, routine monitoring becomes possible. Initial monitoring for foot health starts with asking the question, "Have things changed recently?" Figure 1 shows a sample report that veterinarians use to quickly monitor foot health over a specified time period on a routine basis. If this initial screening report indicates a potential change in foot health status, further questions can then be asked from the foot lesion data collected. Further analysis of foot lesion data requires it to be linked with cow demographic data. Once this link exists it is possible to investigate foot health further by determining the distribution of lesions in different risk periods and age groups. In larger herds that have a routine trimming schedule, monitoring should also determine if the timing of hoof trimming is occurring according to the farm's stated goals. Figure 2 shows 2 examples of a routine monitoring report. Similarly, a simple report that shows the total number of hoof trimmings and lame cows per week could serve as a useful initial monitor in larger herds.

For veterinarians, the natural progression to getting involved in monitoring foot health is to work with farms to investigate problem areas and develop preventative practices

to minimize the impact of lameness. The skills necessary to get involved in monitoring hoof health data are an interest in records analysis and sufficient knowledge of foot lesions to identify and act on the data.

### Barriers to Involvement.

There are barriers that may exist for veterinarians to get involved in foot health programs. One commonly cited barrier is lack of knowledge about lameness. Even though there is a lack of knowledge about effective trimming and treatment strategies,<sup>14</sup> veterinarians have access to a significant body of knowledge that is sufficient to gain the skills necessary to make a difference in a dairy's lameness risks. Two other commonly cited barriers are a lack of safe and effective facilities to work on feet and lack of client's willingness to pay for these services. Both these are valid concerns. In an ideal world every farm would have facilities to safely handle lame cows. However, if veterinarians are serious about getting involved in hoof care, an investment in a hoof trimming chute is minor compared to some of our other investments

such as an ultrasound machine. This willingness to invest in equipment can also overcome the willingness to pay barrier as shortage of farm staff time, skilled labor and equipment have been shown to be some of the barriers for farmers to address lameness.<sup>8,11</sup> Furthermore, work in the UK has also shown that veterinary involvement in developing foot health plans is less likely to result in the implementation of adverse practices that would increase the risk of lameness.<sup>17</sup>

### Conclusion

There are a variety of options for veterinarians to get involved in foot health. Several levels of involvement exist and they each come with their own challenges and skill set requirements. There are also various barriers that exist for increased veterinary involvement in foot health. However, veterinarians are ideally positioned to overcome these challenges and, at the current time, there is limited competition for these type of services thus veterinarians should consider foot health management as a practice growth opportunity.

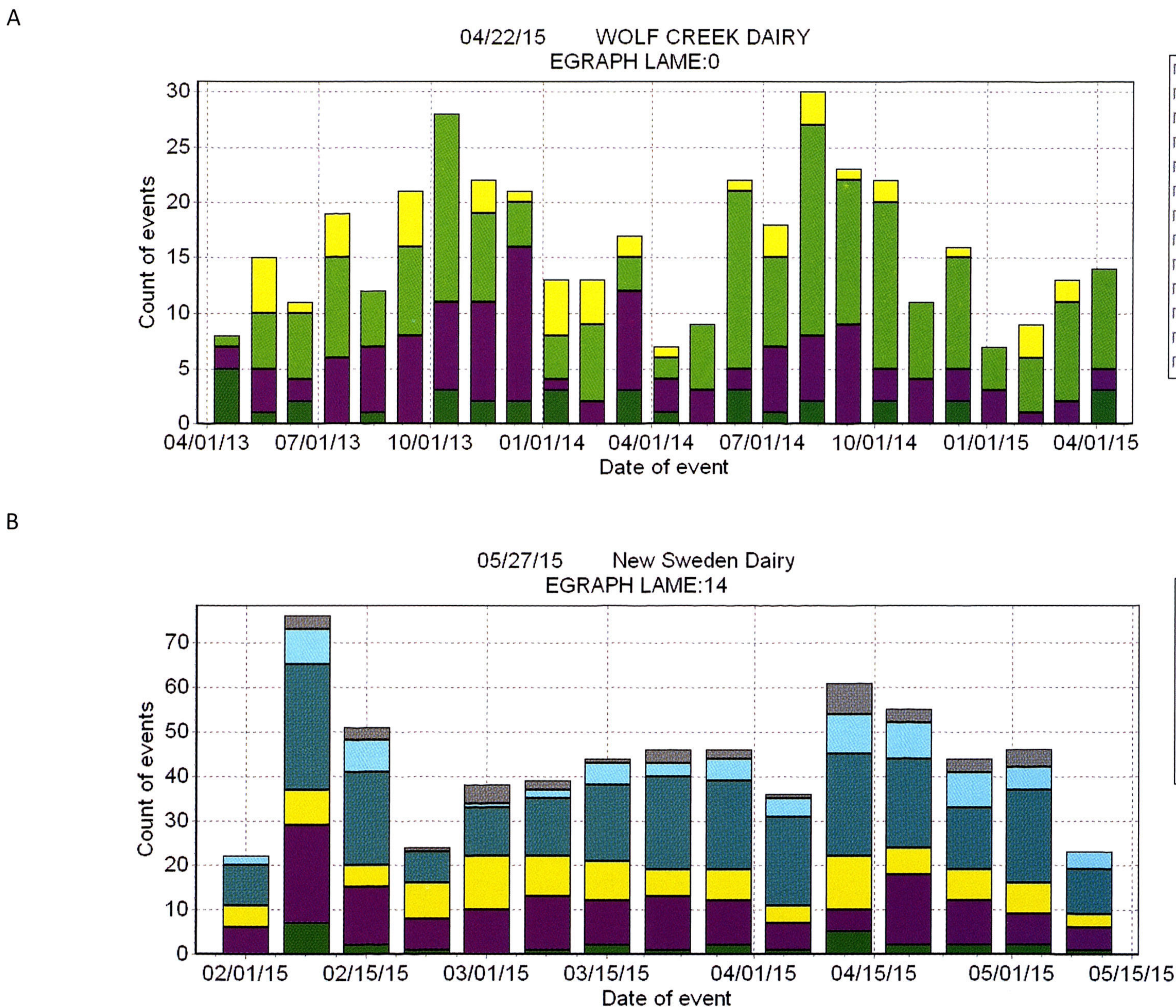
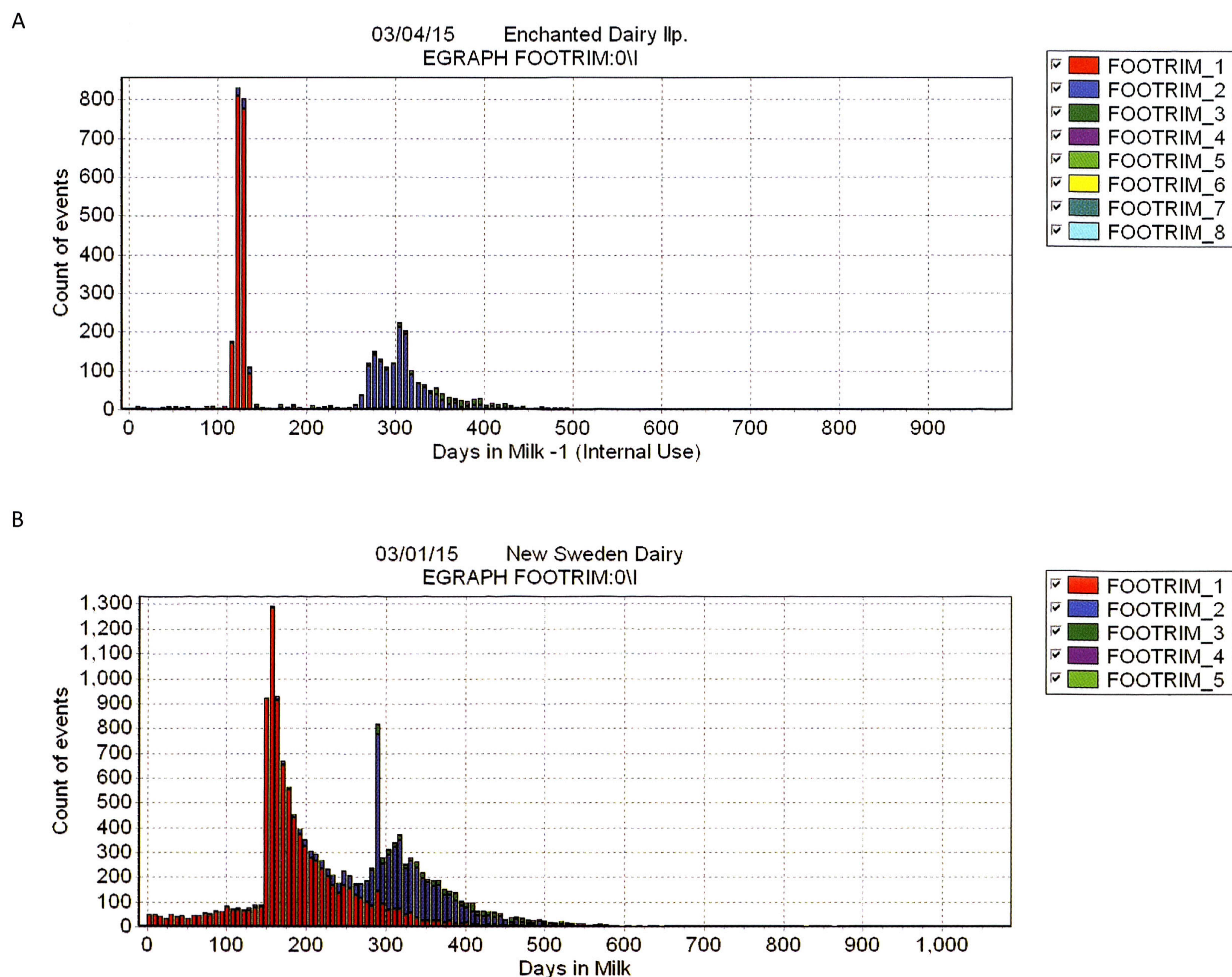


Figure 1. Two example reports showing how a hoof health can be monitored.



**Figure 2.** Comparison of 2 dairies' reports to evaluate if the dairy's stated preventative hoof trimming schedule is being followed.

## References

1. Archer SC, Green MJ, Huxley JN. Association between milk yield and serial locomotion score assessments in UK dairy cows. *J. Dairy Sci.* 2010; 93:4045–4053.
2. Bicalho RC, Vokey F, Erb HN, Guard CL. Visual Locomotion Scoring in the First Seventy Days in Milk: Impact on Pregnancy and Survival. *J. Dairy Sci.* 2007; 90:4586–4591.
3. Burnell, M.C., and J.D. Reader. Mobility Scoring On Farm—The Team Approach. *In Cattle Lameness Conference.* 33, 2010.
4. Cramer G, Lissemore KD, Guard CL, Leslie KE, Kelton DF. 2009. The association between foot lesions and culling risk in Ontario Holstein cows. *J. Dairy Sci.* 92:2572–2579.
5. Espejo, L.A., M.I. Endres, and J.A. Salfer. 2006. Prevalence of Lameness in High-Producing Holstein Cows Housed in Freestall Barns in Minnesota. *J. Dairy Sci.* 89:3052–3058.
6. Groenevelt M, Main DCJ, Tisdall D, Knowles TG, Bell NJ. 2014. Measuring the response to therapeutic foot trimming in dairy cows with fortnightly lameness scoring. *Vet. J.* 201:283–288.
7. Hoffman, A.C., D.A. Moore, J. Vanegas, and J.R. Wenz. 2014. Association of abnormal hind-limb postures and back arch with gait abnormality in dairy cattle. *J. Dairy Sci.* 97:2178–2185.
8. Horseman, S.V., H.R. Whay, J.N. Huxley, N.J. Bell, and C.S. Mason. 2013. A survey of the on-farm treatment of sole ulcer and white line disease in dairy cattle. *Vet. J.* 197:461–467.
9. Von Keyserlingk, M.A.G., A. Barrientos, K. Ito, E. Galo, and D.M. Weary. 2012. Benchmarking cow comfort on North American freestall dairies: Lameness, leg injuries, lying time, facility design, and management for high-producing Holstein dairy cows. *J. Dairy Sci.* 95:7399–7408.
10. Leach, K.A., S. Dippel, J. Huber, S. March, C. Winckler, and H.R. Whay. 2009. Assessing lameness in cows kept in tie-stalls. *J. Dairy Sci.* 92:1567–1574.
11. Leach, K.A., E.S. Paul, H.R. Whay, Z.E. Barker, C.M. Maggs, A.K. Sedgwick, and D.C.J. Main. 2013. Reducing lameness in dairy herds – Overcoming some barriers. *Res. Vet. Sci.* 94:820–825.
12. Leach, K.A., D.A. Tisdall, N.J. Bell, D.C.J. Main, and L.E. Green. 2012. The effects of early treatment for hindlimb lameness in dairy cows on four commercial UK farms. *Vet. J.* 193:626–632.
13. Nordlund KV. Grumpy old vets revisited. *In: 2012 AABP Proceedings.* Montreal; 2012.
14. Potterton, S.L., N.J. Bell, H.R. Whay, E.A. Berry, O.C.D. Atkinson, R.S. Dean, D.C.J. Main, and J.N. Huxley. 2012. A descriptive review of the peer and non-peer reviewed literature on the treatment and prevention of foot lameness in cattle published between 2000 and 2011. *Vet. J.* 193:612–616.
15. Wells, S.J., A.M. Trent, W.E. Marsh, and R.A. Robinson. 1993. Prevalence and severity of lameness in lactating dairy cows in a sample of Minnesota and Wisconsin herds. *J. Am. Vet. Med. Assoc.* 202:78–82.
16. Wenz, J.R., and S.K. Giebel. 2012. Retrospective evaluation of health event data recording on 50 dairies using Dairy Comp 305. *J. Dairy Sci.* 95:4699–4706.
17. Whay, H.R., Z.E. Barker, K.A. Leach, and D.C.J. Main. 2012. Promoting farmer engagement and activity in the control of dairy cattle lameness. *Vet. J.* 193:617–621.