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Lameness and Welfare of Dairy Cattle

A.S. Leaflet R2520

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Program Summary and Situation Statement

A prominent veterinary researcher from Cornell University estimates that the most costly diseases of dairy cattle are displacement of the abomasum and lameness resulting in the \$489 and \$478 per case, respectively. However, when economic losses are computed on a herd basis, none rival lameness as the most costly disease of dairy cattle. Reasons for this are largely related to its insidious nature and the relatively high incidence of this disease compared to abomasal displacement, mastitis and other common health disorders. Although variable, it is not uncommon to find herds with annual incidence rates of 30% or higher. Lameness disorders are often neglected because early symptoms are subtle causing a failure of owners to observe or recognize them in timely manner. Detection is also complicated by the cow's natural instinct to disguise her discomfort which results in only mild alterations of gait and posture. Ultimately, this leads to treatment delays and the development of more serious conditions that increase animal suffering and reduce welfare. Despite its impact on performance, profit and animal well-being, attention to this health problem by the dairy industry is lacking. For example, dairy record-keeping systems are designed to capture multiple bits of information on most health disorders in dairy cattle with exception of lameness events. Data that is recorded is usually provided by trimmers, but much of it cannot be conveniently transferred to the farm's record-keeping system. Furthermore, terms used by trimmers and data captured is not consistent or easily interpreted since there is no standard nomenclature used amongst trimmers. As a consequence, there is little or no data available for regular evaluation of foot care information on farms by veterinarians or others.

Another issue of growing concern for the Iowa dairy industry is that promulgated by activist organizations charging that the welfare of animals in production agriculture is compromised for the benefit of profit. These organizations are well organized and support their arguments with video footage taken by persons working undercover in packing plants, livestock markets and on farms. For the most radical of these organizations the primary objective is to end animal agriculture. Unless the dairy industry can develop an effective pro-active approach to assuring consumers of its commitment to humane care of its animals, it faces a greater likelihood of increased regulation by outside agencies.

Implications to the Iowa Dairy Industry

Assuming a conservative rate of lameness at 30% and a cost of \$478/case, economic loss to the Iowa dairy industry (215,000 cows) is nearly \$103 million dollars annually. This loss represents more than that caused by any other disease and by a disorder that is believed to be one of the most painful for the cow. Failure to properly address this problem results in tremendous financial loss and needless animal suffering.

Throughout recent history, the dairy industry has enjoyed the benefit of strong consumer trust in the safety and wholesomeness of its products. Today its image is threatened by consumer concerns for the welfare of its animals. If confidence erodes so will demand and prices paid to farmers for milk. The future success of our industry requires that the dairy industry maintain consumer confidence in the safety and wholesomeness of its product, and the welfare of its animals.

Extension Program Activities Planned to Address the Problem

Lameness disorders are poorly understood by many within the dairy industry. Therefore, a primary effort of this extension program effort will be to **improve awareness and understanding of this disease**. This will be accomplished in part through the **development of appropriate publications, the delivery of seminars at veterinary and producer meetings, and via other forms of media communications**. There are also plans to establish a training program on foot care for on-farm and commercial trimmers throughout Iowa. A program developed previously at the University of Florida will now become the **ISU Master Hoof Care Program**. Its objective will be to provide training in foot care and claw trimming for trimmers with an advanced version of this training program for veterinarians. The program will be presented in English and in Spanish in order to address the needs of Hispanic participants. Finally, since the ISU College of Veterinary Medicine now graduates the largest number of food supply veterinarians, a **concerted effort will be made to assure that veterinary students are properly trained in foot care**. A well-trained and knowledgeable veterinary profession is surely the most efficient and best way to advance the cause of improved foot health in the Iowa dairy industry.

Programs to address issues related to welfare of dairy cattle are continuing to evolve. As with foot care, a primary objective at the present time is to **improve awareness of the welfare issue**. This will be accomplished using many of the same approaches as cited above (i.e. **presentations, publications and other media**). **Training programs in English and Spanish for on-farm workers** are being considered as a possible mechanism for addressing some of

the specific needs of dairymen relative to appropriate care and handling of animals.

Program Accomplishments to Date (since start date of June 1, 2009)

The **Master Hoof Care Program** has trained nearly a thousand workers since it was instituted in 1996. Since its move to Iowa in June of 2009, our office has continued to see steady demand for this training program. Large operations with on-farm trimming personnel frequently request individualized instruction for their workers. This is easier since farms cannot always afford for these people to be gone and travel is costly and difficult, particularly for Hispanic people who don't have good command of the English language.

To address the needs for better records of lameness disorders on farms, this author has developed a touch-screen computer application. Using a claw zone diagram and the international system for numbering of claws, feet and limbs, this author in collaboration with a Wisconsin-based software company has **developed a touch-screen system for the capture of lameness disorders**. This system is able to record cow identification by Radio Frequency Identification (RFID), as well as information on claw, foot or limb lesions with the simple touch of a corresponding region on a touch-screen computer. RFID technology permits the automatic recording of the animal's identification number thus reducing transcription errors that normally occur when this information is manually recorded or later when transcribed into herd records. The software is built into a specialized computer that is able to function at very low as well as high temperatures. The computer is also rugged enough to take

the kinds of physical abuse that it would naturally be exposed to in the farm environment. The touch-screen system is marketed as "**Hoof Supervisor**", and although it has been on the market since the spring of 2009, response has been very positive. For example, the Alberta Milk Board (Alberta, Canada) purchased *Hoof Supervisor* computer units for a large number of its commercial trimmers in order to develop a better understanding of foot health in the Alberta dairy industry. This has spurred additional requests for this technology in Manitoba and Ontario. In the United States, *Hoof Supervisor* is selling well, but current economic conditions have limited demand since units sell for 5-6 thousand dollars each. Nonetheless, *Hoof Supervisor* has just received a "**World Ag Expo Top-10 Award**" for outstanding product innovation for the World Ag Expo to be held in Tulare, California, February 9-11, 2010. This distinction means that the *Hoof Supervisor* will be featured on the Expo's web site and in the World Ag Expo program brochure.

This author is **actively involved in a number of welfare-related activities with prominent national organizations** (Chair of the Animal Welfare Committee of the American Association of Bovine Practitioners, Board Member of the Professional Animal Auditors Certification Organization, North American Food Animal Well-Being Commission – Beef and Chair of the American Veterinary Medical Association's Euthanasia Guidelines, Food Animal Committee). Involvement with these organizations yields important perspective on the direction of national initiatives with respect to animal well-being. These are essential to continued development of a relevant extension program in welfare.