



For immediate release:
April 7, 2005

Research driving Alberta livestock care progress

Calgary, AB, April 7, 2005: State-of-the-art technology for early disease detection, objective tools to measure stress and humane on-farm euthanasia methods are just three examples of research innovations showcased at the Livestock Care Conference, April 1, in Red Deer. The Conference was hosted by Alberta Farm Animal Care (AFAC).

“Each of these projects represent major steps forward for livestock care in Alberta,” says David Hyink, a Ponoka, Alta., chicken producer who was named new AFAC Chair at an AFAC Board meeting preceding the Conference. “I have been impressed by the willingness and responsiveness of Alberta researchers to work together with each other and with their colleagues throughout North America, to understand the practical needs of the industry and to look into some of the tough areas where progress is needed. This approach is delivering results that will help the Alberta livestock industry take a leading role in animal care.”

Research is an integral part of AFAC’s mandate, says Hyink. The organization has partnered with Alberta Agriculture, Food & Rural Development (AAFRD) and Agriculture and Agri-Food Canada (AAFC) in the Alberta-Canada Livestock Welfare Research Partnership – an initiative to support livestock welfare research. Research supported by the partnership is focused on four main themes: animal husbandry, early detection of disease and stress, mitigating the effects of invasive procedures, and environment and housing.

With support from the partnership, Alberta researchers have collaborated with and built on the achievements of their colleagues at home and abroad, to bring new knowledge and technology to Alberta.

Among the technology highlighted at the Conference, Alberta researchers have developed a new, larger version of a Modified Atmosphere Chamber (MAC) for on-farm euthanasia of spent hen flocks. The system can euthanize large numbers of birds quickly, painlessly and efficiently, offering high animal care standards, major cost savings for producers and a valuable tool for responding to crises such as avian influenza.

“We believe we’ve really achieved something with this machine,” says Dr. John Church, project manager of the spent hen effort and leader of the Livestock Welfare Unit of AAFRD. A two-bin system using around 20 people to constantly load and dump the bins can handle 30,000 birds in one eight to 10 hour day. “This is a system that producers can build themselves and operate with minimal cost,” says Church.

Another research effort involving the partnership has focused on identifying non-invasive methods for studying welfare issues in poultry. “A key area of progress has been using infrared thermography,” says

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Dr. Nigel Cook, a livestock welfare researcher with AAFRD in Lacombe. “Infrared thermography images show areas of heat and cold in the birds. We’ve identified correlations between this information and factors such as feather cover. This provides a much better method of assessment than the subjective approaches typically used.”

Infrared thermography can also detect muscle soreness, says Church, who recently visited with colleagues in California to investigate the technology as it used to examine race horses. “This is the state of the art when it comes to lameness detection, and it’s something that may prove a great benefit for assessing gestating sows, dairy cows and even broiler chickens. Areas of soreness always associated with heat or inflammation. We can determine up to two weeks before an animal starts showing signs of clinical lameness that it’s going to be lame.”

Alberta researchers are also working with colleagues to examine tests to assess fear in animals, says Derek Haley, a livestock welfare researchers with AAFRD in Red Deer. Haley is participating on behalf of the partnership in a large U.S.-based project to validate existing tests. “There have been lots of different tests used, but little work has been done to compare and validate them, so that’s what we’re doing in this new multi-site, multi-species research effort. The best tests are likely to be considered for on-farm animal welfare audits in the future.”

The detection of sickness or disease in beef cattle has been another research priority, says Dr. Karen Schwartzkopf-Genswein, a livestock welfare and behaviour scientist with AAFC in Lethbridge. “It has been found that measurements of behaviour patterns, such as feeding behaviour, can be used to predict the onset of sickness and disease at an early stage, which allows for more effective treatment and lower costs to the producer.” Most recently by participating in a large Texas-based study, Schwartzkopf-Genswein and colleagues have investigated several promising methods for Alberta’s cattle industry. A major initial focus has been on improving detection of Bovine Respiratory Disease (BRD), which affects 40 to 60 percent of calves.

Improved early detection will also help reduce the use of antibiotics in beef cattle, by allowing for more targeted use, points out Dr. Al Schaeffer, a livestock physiologist with AAFC in Lacombe. “One strategy we’re looking at is a watering system where the animal triggers an infrared photo of itself. You can use that information to see what’s happening in the animals, in a non-invasive way.”

AFAC is a partnership of Alberta’s major livestock groups, with a mandate to promote responsible, humane animal care within the livestock industry.

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