

VETERINARY IRELAND MEDIA RELEASE

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Irish Vets Can Partner Farm Expansion, Efficiencies and Quality

“Ireland faces into its biggest opportunity to grow its food production from livestock and dairy sectors since joining the EU, when milk quotas are abolished in 2015. Vets can play a critical partnership role with farmers at this time in minimising animal disease risk and the consequent losses in output and production,” said John Gilmore, Chair Cattle Association of Veterinary Ireland, whose annual conference takes place in Galway over three days from 11th – 13th October, 2013

“Maintaining and improving herd health contributes to improved farm efficiencies, improved animal welfare and supports food quality standards in light of potential farm expansions,” said Mr. Gilmore.

Delegates to the CAVI conference heard specifically about the need for further farmer education related to the risk, prevention and cost savings associated with the management of animal diseases ranging from mastitis, to Bovine Respiratory Syncytial Virus (BRSV); as well as the role of the veterinary practitioner as a guardian of the food chain. Paradoxically, delegates also heard about some technologies designed to improve efficiencies, which have been shown to be less effective than conventional farming systems.

Two hundred livestock vets and experts from the island of Ireland are participating in the CAVI conference. Expert commentary includes:

“The most dramatic change to Irish agriculture, since the impact of accession to the EU, is likely to come with the abolition of milk quotas in 2015.” - Alan Renwick, Professor of Agriculture & Food Economics, UCD.

“The total economic damage caused by production diseases in livestock is larger than the damage caused by notifiable diseases such as Foot & Mouth.” - Henk Hogeveen, Associate Professor, Business Economics of Wageningen University & the Department of Farm Animal Health, Faculty of Veterinary Medicine of Utrecht University

“The business case for farmers to improve mastitis control in their herds is very clear. The research shows us that there are significant economic gains to be made through increased production, a reduction in cases treated etc.” - Finola Mc Coy, Programme Manager for CellCheck, Animal Health Ireland

“Infections with bovine viral diarrhoea virus (BVDV) cause substantial economic losses to cattle industries. Reliable and rapid detection of persistently BVDV infected (PI) calves is of utmost importance for the efficacy of modern BVDV control programs.” Robert Fux, Institute for Infectious Diseases & Zoonoses, Ludwig-Maximilians-University, Munich.

Bovine respiratory syncytial virus (BRSV): *“The major viral cause of severe respiratory disease in young cattle, the distribution of BRSV is worldwide with Ireland being no exception.”* – Peter Nettleton, formerly with the Virus Surveillance Unit, Moredun Research Institute, Edinburgh.

Irish Agriculture – What Does the Future Hold ?

“The most dramatic change to Irish agriculture, since the impact of accession to the EU, is likely to come with the abolition of milk quotas in 2015. There are ambitious goals for growth in the value of the beef and sheep sectors here, however the most cited statistic in rural Ireland is the Food Harvest 2020 goal of a 50% increase in dairy production by 2020,” said Alan Renwick, Professor of Agriculture and Food Economics at UCD.

Prof. Renwick was previously Head of the Land Economy and Environment Research Group at the Scottish Agricultural College and also spent 12 years with the University of Cambridge in the Department of Land Economy.

He identified a number of possible constraints to growth in production, ranging from farm structures to environmental pressures; and considered the responsibilities of those involved in the sector – ranging from policymakers to farmers and vets – to helping to overcome these constraints, so as to enable Irish agriculture to grow and take advantage of the opportunities that are arising at a global scale.

Alan Renwick, Matt Dempsey and Andrew Cromie were the speakers in a CAVI conference session entitled “Agriculture – What Does the Future Hold?”, Chaired by Damien Barrett. Alan Renwick’s presentation focused on the evolving nature of agricultural, environmental and trade policies within an Irish context of optimism concerning growth in the sector.

The Economics of Disease – Health & Fertility Problems Account for 10% Production in Dutch Dairying

Henk Hogeveen, who holds an MSc in Animal Health Economics and Epidemiology; and a PhD in mastitis diagnosis, delivered two presentations at the session on the Economics of Disease, Chaired by Conor Geraghty. Henk Hogeveen is associate professor at the Business Economics of Wageningen University and the Department of Farm Animal Health of the Faculty of Veterinary Medicine of Utrecht University.

The total economic damage caused by production diseases in livestock is larger than the damage caused by notifiable diseases such as Foot & Mouth, according to Henk Hogeveen.

Mr Hogeveen said that the economic damage caused by production diseases, which are chronic in nature, is spread out over the year. He said that farm accounting reports give all kinds of detail about the costs of production, such as feeding costs, machinery costs and health costs comprising veterinary fees and veterinary medicines.

“These are only a small proportion of the total economic damage of a production disease. The total costs of disease can be large. For instance, for the Dutch dairying situation, it was estimated that the costs of health and fertility problems accounted for 10% of the gross production value.”

Mr Hogeveen said that a good understanding of the costs of a disease is important to support decisions of farmers with regard to animal health.

He said that whilst production functions can vary from farm to farm, it is possible to be pragmatic and identify factors to determine the cost of disease, as described by Halasa et al. (2007). These are: Decreased (milk) production, veterinary services, diagnostics, drugs/medicines, discarded milk, labour, decreased product quality, increased risk of new cases of the same disease or of other diseases, increased risk of culling and the materials and investments for prevention.

Automatic Milking

The conference also aimed to bring veterinary practitioners up to speed with developments in precision agriculture, such as robotic milking and real time monitoring of dairy cows.

In his second presentation at the Veterinary Ireland conference, Mr Hogeveen explored the concept of Precision Dairy Farming developments, evolving since the introduction of electronic cow recognition.

Mr Hogeveen cited the Dutch example, where automatic milking was first introduced in 1992. “From an economic point of view, automatic milking is not cost-effective. Several studies have been published on economic consequences of automatic milking using normative models. The general trend in these studies was that automatic milking has negative effects on the economic performance of the farm when compared with conventional milking.” (overview by Hogeveen et al. 2008).

Mr Hogeveen said that despite this, the introduction of automatic milking has gone quite fast in North-Western Europe. “Farms milking with an automatic milking system seem to be those farms that are working mostly with family labour who see the use of automatic milking as a way of increasing their farm size without the burden, risk and management of hiring external labour. For larger farms, having experience with hired labour, the situation is different.”

Some of the developments in Precision Dairy Farming technologies are associated with the introduction of automatic milking, where the detection of normal clinical mastitis can not be done as readily by visual inspection of the milk and/or udder. Mr Hogeveen said that farmers are able to detect clinical mastitis as part of standard milking procedures and have information about somatic cell count measurements within milk recording data to help them to identify potential subclinical mastitis. Therefore the 'added value' of PDF technology in relation to mastitis detection is unclear. However where automatic milking systems are introduced visual inspections of the cow and her milk become more labourious and therefore mastitis detection systems are being more widely used.

Automatic estrus detection is an area of Precision Dairy Farming which can save labour in terms of the time spent on visual inspection of cows; coupled with increased estrus detection rates.

Significant Economic Gains to be Made From Improved Mastitis Controls

Motivating behaviour change in mastitis control was explored by Finola Mc Coy, Animal Health Ireland. A vet with a MSc in Livestock Health and Production, Finola has extensive experience of the dairy sector in Ireland, UK & New Zealand. Previously a mastitis research officer with Teagasc's research team in Moorepark, Finola is currently Programme Manager for CellCheck.

The business case for farmers to improve mastitis control in their herds is very clear. The research shows us that there are significant economic gains to be made through increased production, a reduction in cases treated etc. Farmers report that dealing with mastitis is very stressful, thus reducing the prevalence and incidence of infection would reduce that stress level. There are also longer term gains at an industry level; having a constant supply of raw product of a high quality increases our competitiveness and provides market security.

Whilst there is a clear economic argument for improving udder health, and no shortage of evidence-based recommendations, there are still some farmers who do not adopt and implement those recommendations in order to have the best mastitis control.

Ms McCoy said that a 'whole-of-industry, collective approach' would be valuable when it comes to improving udder health on a national level. She encouraged livestock vets to consider how they can influence farmer behaviour

"If a farmer does not believe that mastitis is currently a problem, or a threat to their herd, then they will not perceive the advice that follows to be relevant to their situation. Records, data and benchmarks may be useful in influencing the degree of 'perceived threat. Similarly, the use of evidence for the effectiveness of the recommended course of action may improve the 'belief of self-efficacy'," said Ms McCoy.

She encourages vets to ask questions about the farmer's goals, perceptions and previous experiences. She also recommended that livestock vet practices develop a communication strategy around mastitis control. "Have a common and consistent message. Create a demand for mastitis control services by offering them! Start with proactive and engaged farmers, who will then become positive advocates for what you can offer," said Ms McCoy.

Infectious Diseases

The CAVI conference featured two sessions on Infectious Diseases, sponsored by Animal Health Ireland and Zoetis.

Peter Nettleton gave an overview on Bovine Respiratory Syncytial Virus (BRSV) in a session chaired by John Gilmore. A vet from the UK who studied Tropical Veterinary medicine, Peter Nettleton holds an MSc in virology at Birmingham Medical school, a PhD in pestiviruses and has experience working with the Virus Surveillance Unit, Moredun Research Institute in Edinburgh. He retired in 2007 but continues to be fascinated by how viruses behave and have such an impact at the farm, regional, national and international levels.

Mr. Nettleton gave tremendous insights into understanding and prevention of Bovine respiratory syncytial virus (BRSV).

The major viral cause of severe respiratory disease in young cattle, the distribution of BRSV is worldwide with Ireland being no exception (Healy et al., 1993). Disease due to BRSV occurs predominantly in cattle in their first 6 months of life during the autumn and winter months and transmission is by contact with respiratory secretions from infected animals and/or aerosols over short distances.

BRSV spreads rapidly within an infected group causing a range of respiratory disease from inapparent to peracute. Morbidity rates are high and mortality ranges from 0 to 20%. Initially relatively mild symptoms are shown with a serous nasal discharge and some coughing. Then within a few days some calves will show more serious disease with tachypnoea, dyspnoea, bouts of coughing, open-mouth breathing with forced expirations and accumulation of frothy saliva around the mouth. In extreme cases subcutaneous emphysema may occur. If death ensues pulmonary emphysema is a common post-mortem finding. For others the ensuing lung damage can result in continuing illness and a slow recovery.

A one-year longitudinal sero-epidemiological study in 6 closed Dutch dairy herds involving 884 cattle showed roughly similar incidences of infections and reinfections across all the farms. Virtually all primary infections occurred between the end of September and the middle of February with peaks in the months from October to January. In Sweden, BRSV causes respiratory disease outbreaks in dairy and beef herds most often during the winter but also over the summer. Severe primary disease was seen predominantly in isolated dairy herds, sometimes in adults and often after the purchase of new animals (Elvander, 1996).

Mr Nettleton said that the prevention of disease due to BRSV is the same as that appropriate for all causes of cattle pneumonia.:

“Attention should be given to buildings to ensure that ventilation and air-movement are good. Avoid overcrowding and prevent the build-up of excessive humidity. Rearing calves of a similar age in small groups is advisable. The mixing of cattle of different ages or origins in a shared air-space will increase the risk of disease. The introduction of even a single animal into a group can bring in a new infection. Strive for optimal nutrition and minimal stress.”

BRSV vaccines have been designed to provide protection to calves during their early lives when they are most at risk of severe disease. They should be an essential part of any respiratory disease control programme and must be used to protect calves before they are housed in autumn.

Orkney Island Case Study

Andy Cant is a partner at Northvet Veterinary Group in Orkney, a group of islands off the North coast of Scotland. He shared the experience of BVD at Orkney, where the main industry is agriculture and there is a high density of cattle on the islands - approximately 25,000 beef suckler cows and 3,000 dairy cows. In the late 1990's investigations into neonatal calf losses at the local SAC lab in Thurso attributed 45% of losses to BVDV.

The programme featured screening, where a screen was positive whole herd tests were carried out to identify PI animals. These were then culled. Vaccination of breeding animals and biosecurity were also encouraged. The result is that more than 95% of holdings are BVD free.

Based on their experiences, Mr. Cant's advise is to educate farmers, make sure all groups are represented in sentinel testing, seek out and cull PI animals. “Don't be tempted to “isolate and finish”, don't rely on vaccination alone and maintain good biosecurity.”

The Swiss Example

Walter Regli, Dr.med.vet. FVH, a Swiss specialist in veterinary laboratory medicine and microbiology, described the BVDV Eradication Scheme in Switzerland, which has a very long tradition of cattle farming, with about 700,000 calves born every year.

The BVD virus had been present for a long time in Switzerland. A study conducted in the late nineties by the Institute of Veterinary Virology at the University of Bern showed an antibody prevalence in dairy-herds of 57.7%. On average one out of eight dairy herds held a pi animal. Pi animals were mainly found in herds with an antibody prevalence above 60%

Apart from general infection causes, a specific risk factor in Switzerland is driving of cattle to alpine pastures, which accounted for a broad distribution of BVD. 20% of all farms drive their cattle to alpine

pastures in summer months. Another specific risk factor in Switzerland was the fattening of calves. The percentage of PI animals in this population was found to be particularly high.

In 2008, the first step involved investigating every bovine animal for the BVD Virus. The next step involved analysis of all newborn calves for BVD up December 2012. It has seen BVDV prevalence decline to 0.02 with 99.5% of farms free of BVDV. The last step was supposed to be a monitoring of BVD Virus Antibodies.

John Gilmore, who chaired the conference session, said that the database introduced by the Swiss also allowed farmers to access information to check the BVD status of any animal. "Veterinary Ireland would encourage Animal Health Ireland to develop this concept in Ireland - it would be a valuable resource allowing farmers to check the BVD status of any stray animals or other animals which may be in contact with their stock," said Mr. Gilmore.

Rapid detection of persistently BVDV infected (PI) calves is of utmost importance

Robert Fux, Dr.med.vet, a veterinary microbiologist working with the Institute for Infectious Diseases and Zoonoses, Ludwig-Maximilians-University Munich, explored the pitfalls of BVD Eradication.

Infections with bovine viral diarrhoea virus (BVDV) cause substantial economic losses to cattle industries. Reliable and rapid detection of persistently BVDV infected (PI) calves is of utmost importance for the efficacy of modern BVDV control programs. To avoid pitfalls of BVD eradication there are two main points to be considered: (i) the need for a suitable sample and a sensitive and specific test system and (ii) a consolidated knowledge about the biology of the pathogen.

A perfect BVDV diagnostic test system would reliably distinguish between PI animals and not persistently BVDV infected (NPI) cattle in all cases.

An update on the Schmallenberg virus was presented by Ronan O'Neill, a veterinarian with a PhD on the genetic control of respiratory vaccines in cattle. Ronan is based in the Virology Division, Department of Agriculture Food & Marine veterinary laboratories at Backweston with responsibility for ruminant related work.

In the same session on Infectious Diseases Chaired by Ciaran Mellett, Dr Sam Strain, Programme Manager for Animal Health and Welfare Northern Ireland with responsibility for the Johne's Disease control programmes across the island of Ireland, gave presentations on the epidemiology, diagnosis and control of Johne's Disease.

Diagnostics

The importance of utilising the veterinary profession to attain accurate diagnosis of specific diseases at farm level with a view to improving farm profitability, was highlighted in the conference session on Diagnostics, chaired by Kevin O'Sullivan and sponsored by MSD Agvet.

Dr. Mary Sekiya is a research scientist in the School of Veterinary Medicine at UCD Dublin. In recent times, she adapted the liver fluke ELISA (based on a recombinant antigen) to bulk tank and individual milk samples.

In response to its success, Dr. Sekiya formed the veterinary service company, BoFinn Diagnostics Ltd, which operated out of the UCD Veterinary College from 2009-2012. In her work with BoFinn and as a research scientist, she aims to develop veterinary diagnostic assays that are relevant, cost-effective and viable in the marketplace.

Her presentation reviewed the potential role of bulk milk ELISA for the diagnosis of ostertagiosis, fasciolosis, parasitic bronchitis due to cattle lung worm and neosporosis; and as a tool for veterinarians as a component of herd health monitoring.

Bovine Abortion & Bovine Techniques

Walter Regli, DMV, labor-zentral.ch, Geunsee, Switzerland, gave a presentation on the Diagnosis of Bovine Abortion.

“Abortion in cows, especially when they occur repeatedly, can lead to painful economic losses, with figures of €1,000 per every single bovine abortion very probable,” said Mr Regli. “Bovine abortion has been recognized as a critical problem for a long time, not only by breeders but also by public authorities.” He reviewed the potential causes, ranging from Brucellosis, BVD or IBR to Leptospirosis or Schmallenberg virus, amongst others.

He supported compulsory investigation when an increase in abortion is observed in a farm, where a veterinarian has to be informed and samples have to be taken and sent to a laboratory. “The results may lead to negative results, however a compulsory program is very successful in proving the absence of notifiable diseases by showing that the targeted agents are not present.” It was noted that such results also provide information to farmers on which diseases are causing losses on the farm, which is a valuable tool in designing control programmes on farms.

A session on Bovine Techniques chaired by Donal Murphy featured Eoin Ryan, a European specialist in bovine health management who is lecturer in Integrated Farm Animal Health at UCD and has carried out extensive work on leptospirosis in the Irish suckler cattle population. Eoin’s presentation was on Surgical Advances & Surgical Diagnostic Techniques.

Stuart Russell from Nantwich Farm Vets in the UK provided an update on Surgical Correction of Duodenal Outflow Obstruction and other non Abomasal Bovine colic surgeries; and Annetta Zintl from UCD on the importance of Bovine Babesiosis (redwater) in Ireland.

Practitioner’s Forum

The Practitioners Forum at the conference was chaired by John O’Roarke and also featured Seamus McManus MVB MRCVS, from Ark Veterinary Clinic, Galway presented ‘A Practitioner’s Approach to Having an Effective Team’. Conor Geraghty’s presentation was on Herd Health Investigation using the BTAP model.

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