RESEARCH

Moredun reviews its research

A ROUND up of some of the research being conducted at the Moredun Research Institute near Edinburgh was given to the media at the institute’s annual press event on December 13.

Among the projects highlighted was work to develop a new vaccine to control haemorrhagic septicaemia (HS) in cattle and buffalo in India. This endemic disease, which is caused by *Pasteurella multocida*, affects cattle, buffalo and camels across south and south-east Asia, Africa and South America, and about half of all cattle and buffalo deaths in India are thought to be due to HS. The Wellcome Trust has awarded £1 million over three years to an international consortium of researchers, including scientists from the Moredun, the University of Glasgow and the Indian Veterinary Research Institute, for the development and testing of a new vaccine. Current vaccines provide protection for between six and nine months, but the new vaccine is anticipated to have a longer duration of immunity and to offer greater cross protection, as well as being easier to administer.

Chris Hodgson from the Moredun and the lead scientist in the consortium was optimistic that the project would be successful. ‘The first step involves us attenuating or weakening the causative bacterium so that it is unable to cause disease,’ he said. ‘The weakened bacterium will be incorporated into a prototype vaccine which will be tested in the UK and trialled in buffalo and cattle across India to determine its effectiveness at controlling this disease.’

Another project discussed was a trial of a new diagnostic test for liver fluke. Fasciolosis has increased significantly in sheep and cattle in the UK over the past 10 to 15 years and, the Moredun says, presents two main practical challenges for farmers and vets. First, they must be able to diagnose active fluke infection in the live animal and, secondly, they must be able to determine the effectiveness of any treatment. While liver fluke is relatively easy to diagnose postmortem, diagnosis in live animals is more tricky as blood tests require a vet to take the sample and can be difficult to interpret. Faecal sampling can, at best, only indicate the presence of egg-laying parasites. ‘Unfortunately, fluke egg output is highly variable,’ the Moredun says, and fluke eggs trapped in the bile ducts and gall bladder can appear for several days after successful treatment, giving a misleading indication of flukicide efficacy.

A new ‘copro-antigen’ ELISA is currently being trialled in a survey of sheep farms across the UK. The new test detects tiny amounts of fluke secretions in faecal samples. In theory, the Moredun says, it is capable of identifying active fluke infection before the adults start laying eggs. It adds that preliminary results indicate that the new test is considerably easier to use than the standard egg count and also gives a more rapid indication of whether flukicide treatment has been successful.

Research funding

Commenting on other issues of current interest, Julie Fitzpatrick, chief executive and scientific director of the Moredun, discussed the issue of food security and ways in which the institute is working to help support sustainable production. She explained the Moredun’s role in research into foodborne pathogens and into infectious diseases. Also, research on a new diagnostic test for sheep scab was progressing well, and there was a strong chance that it would also detect scab in cattle. The institute was also providing molecular epidemiological techniques to support the campaign to eradicate bovine viral diarrhoea virus from Scotland’s cattle.

‘If there is a concern, it’s that there is so much to do and, with funding income remaining tight, it’s important that research is prioritised,’ Professor Fitzpatrick said. This had been ongoing for some years across the UK. Once priorities had been determined, it was important that tangible outputs were produced and change effected. ‘The Scottish Government continues its financial support to ensure research findings reach the appropriate target audience, be they farmers, veterinary surgeons, politicians, policy makers or the public, and this is essential,’ she said. ‘It has been very encouraging indeed that, in recent months, the work of the major research providers that contributes to the Innovation Agenda in Scotland has been increasingly recognised: this includes our intellectual property, licence deals, royalty income and spin-out companies. This translates clearly into sustainable economic growth, a priority for all at the present time.’

New scholarship

The Moredun Foundation has introduced a new scholarship scheme to support livestock health and welfare projects. Three scholarships of up to £1000 will be granted in 2012 to help individuals broaden their education and experience in areas relating to livestock health and welfare and the agricultural industry. The scholarships can be used to support travel, work experience or continued research, and collaborations with science or the arts. Full details can be found at www.moredun.org.uk/scholarship.

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