

Welfare pulse



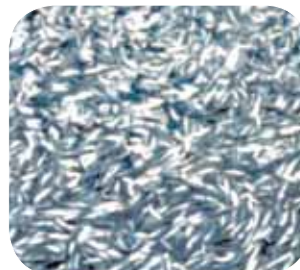
MARCH 2011 | ISSUE 07

**Rabies control
in Bali – a
model for
success**

Welcome to
World Veterinary Year

**SPCA NEW ZEALAND
ONE OF THE FAMILY CAMPAIGN**

In this issue...



Welfare Pulse

Welfare Pulse is published three times a year by the Ministry of Agriculture and Forestry (MAF). It is of special relevance to those with an interest in domestic and international animal welfare developments.

The articles in this magazine do not necessarily reflect Government policy.

For enquiries about specific articles, refer to the contact listed at the end of each article.

For general enquiries, (for example, circulation requests or information about the Ministry of Agriculture and Forestry) contact:

Welfare Pulse

Ministry of Agriculture and Forestry
Animal Welfare Standards Directorate

Postal address:

PO Box 2526
Wellington 6140, New Zealand

Street address:

Pastoral House
25 The Terrace
Wellington 6011, New Zealand
Tel: 64-4-894 0100

Fax: 64-4-894 0300

Email: animalwelfare@maf.govt.nz

Animal Welfare complaints:
0800 00 83 33

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A year IN THE CHAIR

When I oversaw the establishment of the Animal Welfare Advisory Committee (AWAC) over 20 years ago it was in recognition of how complex animal welfare issues were becoming and how important it was for the Minister of Agriculture to get advice from a broad and independent group of New Zealanders. I was also trying to get a wide range of difficult issues, which looked insoluble, off my desk. So over the past year, I have often reflected on the irony of ending up as the Chair of the National Animal Welfare Advisory Committee (NAWAC), – successor to the former Committee. Fortunately, NAWAC has far more support than the advisory committee I asked David Blackmore to chair in 1989.

I have no doubt that the value of NAWAC to the Minister is the quality and independence of its advice. But this does not happen by chance. NAWAC has developed significantly over the past 12 years, building on the experience of AWAC, and is supported by increasingly competent skills and expertise within the Ministry of Agriculture and Forestry (MAF) Animal Welfare Standards Directorate. This support has also ensured that the operating systems, policies and procedures of NAWAC are transparent, consistent and evolving.

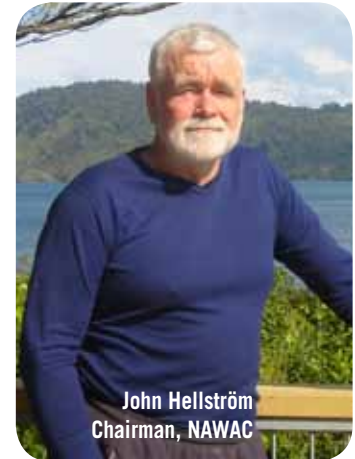
The breadth and quality of expertise brought to NAWAC by its appointed members is the other critical factor ensuring that the advice the Committee provides is deeply considered and not hostage to any particular interest group. This has been particularly important

during the past year as NAWAC has grappled with some very challenging issues such as the revision of codes of welfare for pigs and poultry, the housing of dairy cattle, and the release of the commercial slaughter code.

It is in the nature of bodies like NAWAC that the work of predecessors often comes to fruition after their terms have been completed. This has been especially apparent over the last 12 months when the huge amounts of work that have gone in to codes of welfare for dairy cattle, dogs, sheep and beef cattle and commercial slaughter have finally been formalised – in some cases, after several years of work by past NAWAC members.

For me it has been humbling to recognise the care and effort that has gone into the development of those codes and to understand that it is the institution – not just individuals – that is so committed to advancing animal welfare in New Zealand. This has also meant that the current committee has sometimes had to support past decisions that it has not had a chance to revisit in detail.

Another major impression of the year has been the effort put into managing the regularly changing membership of NAWAC. This goes well beyond simply providing a set of procedures and manuals to in-coming members and includes an induction process. In my case, this has included thorough briefings from my two immediate predecessors (Peter O’Hara and David Mellor) as well as extensive briefings with the animal welfare team at MAF.



John Hellström
Chairman, NAWAC

The public profile of animal welfare and the complexity of some particular animal welfare issues have increased hugely since I tried to avoid them in 1989. However, the processes and policies for addressing them have also developed enormously in the intervening years, as has the quality and range of skills of the people involved in addressing them.

I can’t say that my first year as Chair of NAWAC has been easy but it has been extremely rewarding to be involved as the Committee has struggled to find ways to address society’s concerns, gaps in our scientific knowledge, and the challenges for industries to change their husbandry systems. The fact is that the problems I saw as unsolvable do have answers; they are just not that easy to come by.

John Hellström
Chairman, National Animal Welfare Advisory Committee (NAWAC)
john@puhikereru.net



From the Minister – late addition

I know that all *Welfare Pulse* readers will join me in sending our thoughts and best wishes to the people of Christchurch and all those affected within New Zealand and internationally by the devastating earthquake on 22 February.

As Minister of Agriculture, responsible for animal welfare, I am full of praise for all the volunteers and organisations doing their bit to lend a hand in the

city – particularly the hundreds of farmers pitching in with the clean up, and those people providing pet support services for distressed or lost and found animals.

While the clean up and recovery will be a mammoth task, I thank all those from the rural community and animal welfare organisations for stepping up so quickly to assist in Christchurch’s time of real need.



SPCA NEW ZEALAND ONE OF THE FAMILY

Continuing conversations of empathy through 2011

Royal New Zealand SPCA “List of Shame” is one of New Zealand’s most critical pieces of information to help assess some of our country’s worst animal welfare issues and SPCA National Chief Executive Robyn Kippenberger has the difficult task of putting plans in place to help combat animal cruelty in society.

Seeing Kim Hill interview successful Dancing with the Stars champion and All Black hard man, Norm Hewitt, as he spoke from his heart of his motivation and efforts to help young boys and men in his work led her to a unique partnership. Together they created the empathy education programme “One of the Family”, now moving into a fifth year of presentations throughout New Zealand, that is still the most successful empathy programme to be delivered in schools in any country.

SPCA Ambassador, Norm Hewitt, and National Education Co-ordinator, Shelley Ryan, have presented to over

50 000 Year 7 and 8 students in more than 300 schools across the country. From large Intermediates to the smallest country schools, it is heart-warming to experience the buy-in from communities to address the links of domestic violence and animal cruelty. And the presentation has gained “holistic depth” over time from the conversations shared with students.

In schools Norm confronts the cycle of violence, talking of the children’s “choice” to treat animals with care and respect. He shares his violent childhood experiences where animals were his best friends and the “safe place” he needed most. Growing up in a household of violence is a cycle that Norm has chosen to break for his own family, with animals playing an important part. “We’re teaching them to be kind to animals, so they’ll grow up to respect others”.

Shelley Ryan brings a balance to the program from an SPCA perspective.

Having both male and female presenters has added to making the powerful messages successfully heard and ensures that conversations of care, respect and kindness have a shared balance and is



likened to a mother/father, aunt/uncle family network.

Shelley grew up surrounded with animals – as an only child the companionship of a dog, cat and budgie were shadows. Life experiences over the other side of the fence with gangs and drugs proved another learning never to be forgotten. “SPCA has been a passion of life and as an adult to make a difference for both animals and children is a privilege,” she says.

The power of the One of the Family presentation is tangible and the energy and the essence of change that moves through a school hall or classroom is indescribable but something that has been said many times is “Once you see it, you get it”.

From research undertaken to gauge One of the Family’s effectiveness:

“Educationally, it is a crafted masterpiece. The key messages of the benefits of caring for animals, the link

between family violence and animal cruelty, and the choice each of us can make to live free of violence, are repeated throughout.”

When we talk to teachers, they readily admit their knowledge that family violence is a part of the lives of many of their students. We know those students are part of the audience during “One of the Family” presentations. As responsible and caring adults, the program designers and presenters check regularly that schools have support in place for any child who may be negatively affected by being part of the “One of the Family” presentation.

One of the Family continues across the country and now also supports Regional SPCA Educators to step up in further work with schools and community groups.

Shelley Ryan
National Education Co-ordinator
Royal New Zealand SPCA
shelleyr@rnzspca.org.nz



Shelley Ryan
National Education Co-ordinator
Royal New Zealand SPCA



NAWAC investigates indoor HOUSING OF DAIRY CATTLE

When the Dairy Cattle Code of Welfare was issued in 2010, the Minister of Agriculture asked the National Animal Welfare Advisory Committee (NAWAC) to investigate indoor housing of dairy cattle, in case any additional requirements were needed in the code of welfare. As part of its investigation, NAWAC has been visiting dairy farms that use indoor housing. Here, Karen Phillips of NAWAC reports on a field trip to two farms using different types of housing.

The first farm visited was located near Timaru. The shed had been completed 18 months before and was 105m long x 45m wide and housed up to 500 cows. There was a central feeding race and a large pen on either side, with cubicle accommodation for the cows to sleep in. A scraper system moved along where the cows stood to feed to remove manure and urine. The rubber-matted cubicles were designed so that, as the cow stood up, a bar was situated in a place that contacted the back of her neck and caused her to step backwards so she would defecate in the scraper area and not the sleeping area. Watering troughs were situated at the ends of cubicle areas for social gathering while drinking. The cows in this system were housed whenever supplementary feeding was required. The farmers noted



that the cows would preferentially move into the shed on very hot days as well as during the cold winter months. The cows calve outside and move into the shed once calved. The farmers allow up to three weeks for the cows to become acclimatised to the shed and after that time any cows not coping are removed and kept on a pasture system. The signs of not coping are cows that do not sleep in the cubicles or those that do not take to the feed.

The reasons for keeping the cows housed are to save the land from pugging and damage as well as better use of feed. The cows use less energy keeping warm or cool and are able to be fully fed. All effluent goes through a separation process where the solids are removed from the liquid and both parts are spread back on the land as fertiliser.

The second farm visited kept 450 cows fully housed for 10 months of the year. The cows calved outside and were then brought into the shed. Each cow wears a transducer collar that records and controls, via a computer, everything that happens to that cow. Robotic milking is used, and the cows go into the milking area whenever they want to be milked. A food reward is given in the milking crate while the cow is being milked. If she comes back to be milked before a set amount of time has passed, no reward is given and she is let back out into the pens. The feed can be adjusted on an individual basis to provide for individual cow needs. Each transducer collects all sorts of information, like how many times the cow ruminates, how much she is walking around, how much she is eating. Brushes mounted on rollers were provided as back scratchers, which the cows made constant use of. The cows in this herd were all quite young and of an even size, which



Members of NAWAC at the unit.

makes management easier when setting up cubicle size and feeding levels. Cows were milked an average of 2.2 times per day. Any cows that do not present themselves in a 24-hour time period are identified and taken out to be milked. The cows were calm and quiet and were well used to people walking through their shed.

The robotic sweeper pushing the feed back towards the cows (photo – C O'Connor, Ministry of Agriculture and Forestry).

The welfare issues identified by members of NAWAC centred around cow selection to fit the system. Cow size, weight, conformation and temperament all influence how she manages in an indoor housing unit. Stockmanship is again highlighted as the most important aspect of welfare management in these more intensive systems, because early identification of issues reduces any ongoing problems.

This year, NAWAC will be considering these and other issues highlighted in a review being completed by DairyNZ. The report from this review will be available on the Ministry of Agriculture and Forestry animal welfare website during the year (you can sign up for an electronic alert on the website).

Karen Phillips
Member, National Animal Welfare Advisory Committee (NAWAC)
karenvet@windowslive.com

NAWAC appointments

The Minister of Agriculture recently appointed Ms Susan Brown to the National Animal Welfare Advisory Committee (NAWAC) and reappointed Mr Donald Nicolson for a second term. Both appointments are for a three-year period.



Sue Brown replaces Mrs Peggy Burrows who had served on the committee for three years. Sue was nominated by the Ministry of Women's Affairs and provides knowledge and experience of 'the public interest in respect of animals'. A chartered accountant, Sue has extensive senior management experience in various financial and executive management roles. Her industry experience at a senior executive level includes experience in veterinary practice, in the aged care industry and long spells in New Zealand Police and local Government.

Don Nicolson is National President of Federated Farmers of New Zealand, who nominated him to NAWAC. He provides knowledge and experience in the

commercial use of animals.

Don has a sheep, cattle, bloodstock and forestry operation in Southland and is a former President of Federated Farmers Southland. He is also an elected trustee of the Southland Electric Power Supply Consumer Trust.

Judicial review update

As detailed in an earlier edition of Welfare Pulse, a legal challenge was initiated in August last year by representatives of the Wellington and Auckland Jewish communities over the issue of the Animal Welfare (Commercial Slaughter) Code of Welfare 2010.

The code required all animals being commercially slaughtered in New Zealand to be stunned before slaughter.

Following extensive discussions with legal representatives of the Jewish communities a settlement was agreed to that will allow limited numbers of poultry to be slaughtered by the shechita method for consumption in New Zealand. An amendment to the code, which included a further minimum standard to provide for shechita slaughter of poultry, came into effect on 16 December 2010.

The settlement recognises that although cooked and heat treated poultry products may be imported into New Zealand, current biosecurity requirements prevent raw poultry products from being imported at this time. However, if the situation changes in the future, this exemption from the Code will be looked at again.

Under the terms of the settlement, there will be further discussion regarding shechita slaughter of sheep in New Zealand. The settlement confirms the status quo for cattle; all cattle must be stunned before slaughter.

Visit the animal welfare pages at www.maf.govt.nz to find out more about the Animal Welfare (Commercial Slaughter) Code of Welfare 2010 and the resulting Amendment to the Code.

CODES OF WELFARE

– update on issue, consultation, development and review

Codes of welfare issued 2010:

- Dairy Cattle
- Commercial Slaughter and 16 December 2010 Amendment
- Dogs
- Sheep and Beef Cattle
- Pigs

In post-consultation process:

- Transport in New Zealand
- Broiler Chickens
- Goats

Consultation on codes of welfare:

- Layer Hens (Public Consultation closes 29 April 2011)

Under development:

- Temporary housing (including boarding establishments)
- Camelids
- Saleyards
- Equine

Codes of welfare under review:

- Painful Husbandry Procedures
- Rodeos

Cheryl O'Connor
Manager, Animal Welfare Standards
Codes of Welfare Programme
Ministry of Agriculture and Forestry
cheryl.o'connor@maf.govt.nz

TAIL DOCKING OF LAMBS

The Animal Welfare (Painful Husbandry Procedures) Code of Welfare 2005 states that painful husbandry procedures must only be performed where there are no other “practical, economically viable, effective, less noxious alternatives to the procedure”.

The pain involved in the docking of sheep is considered to be outweighed by the benefits conferred in terms of reduction in faecal soiling and dag formation; a reduced risk of flystrike and facilitation of dagging (removal of dags from the hindquarters); crutching (shearing of wool from the hindquarters) and shearing – in themselves stressful procedures for sheep.

The Code recommends that “when sheep are tail docked, their tails (excluding any wool) should be left long enough to cover the vulva in females and at a similar length in males”. However, in the main, New Zealand farmers do not follow this recommendation and most prefer a slightly shorter option.

Research on the matter of tail length has produced some equivocal results [Fisher MW, Gregory NG, Kent JE, Scobie DR, Mellor DJ, Pollard JC. Justifying the appropriate length for docking lambs’

tails – a review of the literature. *Proceedings of the New Zealand Society of Animal Production* 64, 293-296, 2004 and Fisher MW, Gregory NG. Reconciling the differences between the length at which lambs’ tails are commonly docked and animal welfare recommendations. *Proceedings of the New Zealand Society of Animal Production* 67, 32-38, 2007]. Researchers looked at five docking lengths (no-tail, short, medium, long and undocked) and there is no doubt that shorter tails are easier to shear and crutch. While this is of benefit from the human point of view, it is also important for sheep welfare because



it reduces the amount of time the animal is subjected to another more frequent, although arguably less stressful, procedure.

However, while the researchers are at pains to point out that further work needs to be done, the results do indicate that the acute pain experienced at docking is greater the shorter the tail is docked.

The possibility of chronic pain also needs to be considered. Post mortem results have demonstrated neuroma formation and nerve degeneration following docking, with the incidence increasing as tail length shortens. A neuroma is an overgrowth of nerves following amputation, which may result in chronic pain or increased sensitivity long after the procedure has been carried out.



Very short docking also affects the muscles around the perineal region. The shorter the tail is docked, the lighter, and therefore less effective, the muscles. This reduction in effectiveness has been linked with an inability to lift the tail – with possible increase in dag formation and rectal prolapse. A link with vaginal prolapse or “bearings” has been demonstrated in some but not all studies.

As a final point, there is an increased risk of perineal and vulval cancer if the tail is too short to cover this area (although the incidence of such a problem in New Zealand is unknown).

Clearly, there are multiple factors at work when considering the welfare aspects of docking, and the aim is to balance the stress and potential physical problems caused by the procedure itself with the welfare implications of the increased frequency of dagging and crutching when tails are longer. The researchers concluded that the Medium and Short tails appear the most appropriate, but that the risks of cancer and prolapse with the No-tail as well as potential pain implications indicate that it is not in the best interest of sheep welfare.

Ultimately, with appropriate use of genes for short tails and reduced dag formation we may be able to abandon tail docking in much of the New Zealand sheep flock.

Virginia Williams
Animal Welfare Co-ordinator
New Zealand Veterinary Association
v.williams@xtra.co.nz

New code of welfare for pigs released

The Animal Welfare (Pigs) Code of Welfare 2010 issued late last year by the Minister of Agriculture encourages all those responsible for pigs to adopt the highest standards of husbandry, care and handling.

While the code does not immediately ban the use of crates and stalls, it does introduce a five year phase out of dry sow stalls and sets new limits for the amount of time they can be used for pregnant sows after mating, and for farrowing and lactation.

Accordingly, The Animal Welfare (Pigs) Code of Welfare 2010 contains standards that:

- limit the use of dry sow stalls to four weeks after mating from December 2012;
- prohibit the use of dry sow stalls after mating from December 2015.

National Animal Welfare Advisory Committee (NAWAC) Chair Dr John Hellström said the code signals the direction the Committee and Government wants the industry to take and strongly encourages the identification and adoption

of systems that improve overall animal welfare as soon as possible.

“We have set a clear end point for sow stall use after mating to improve pig welfare and sent a clear signal that highly intensive, indoor pork production is not acceptable to many New Zealanders. This is a strong message to intensive producers that they need to make changes”.

Dr Hellström adds that the code reduces the maximum time sows can be confined to half that of current standards by the end of 2012, and the maximum time is further reduced by the end of 2015 ensuring all sows have freedom of movement for the majority of their life.

Other significant areas addressed in the code include stockmanship; the provisions of food and water; shelter; disease; injury control; and welfare assurance systems.



The Animal Welfare (Pigs) Code of Welfare 2010 is available online at www.biosecurity.govt.nz/animal-welfare/codes/pigs/index.htm or by request from animalwelfare@maf.govt.nz.

Feedback sought on draft code of welfare for layer hens

The National Animal Welfare Advisory Committee (NAWAC) has completed a review of the Animal Welfare (Layer Hens) Code of Welfare 2005 and a draft code has been released for public consultation.

The review has been a priority for NAWAC and was programmed so it could re-examine the use of cages for layer hens in light of new research and current good practice.

The draft code proposes that the use of cages be phased out. From a date to be determined following consultation, all housing for layer hens must provide sufficient space to allow hens to stand erect over all the available floor space and to extend and flap their wings. Housing must also allow hens to lay their eggs in a discrete nesting area, perch, and show foraging and dustbathing behaviour. This could include housing in enriched colony systems, barns (hens are loose inside a shed) and free range housing (hens have access to the outdoors).

NAWAC Chairman Dr John Hellström says the challenge with non-cage alternatives for layer hens is that management has to be sufficient to deal with disease and aggression problems that can arise.

“NAWAC does not want to see layer hens experiencing worse animal welfare as a result of any transition away from cages. Changes to management practices take time and are essential to ensure that welfare is improved.”

Dr Hellström notes that despite NAWAC proposing a phase out of cages it will not make a final reconsideration on when this will occur until after public consultation.

Three economic analyses of the effects of prohibiting the use of conventional cages have been conducted. The timeframe over which changes are implemented will impact significantly on producers and consumers so NAWAC has considered these analyses and developed suggested options to also be considered during the consultation.

The draft code is available at www.biosecurity.govt.nz/biosec/consult and the closing date for submissions is 29 April 2011.

Anyone making submissions should do so by email to aws submission@maf.govt.nz or in writing to:

NAWAC Secretary
Ministry of Agriculture and Forestry
PO Box 2526
Wellington 6140



Latest news from the NEW ZEALAND THREE RS PROGRAMME

The New Zealand Three Rs Programme has been established to promote the understanding, application and development of the Three Rs in New Zealand.

We are the Champions

We have successfully recruited five Three Rs Champions in a range of institutions within New Zealand. Their role will be to encourage awareness of, and enthusiasm for, the Three Rs and the New Zealand Three Rs Programme. The group will be acting as contacts for information sharing between research organisations/industry and the Three Rs Programme and we are delighted to finally have this network in place.

Don't grab it by the tail – a recent example of the 3Rs

Refinement includes the improvement

of animal handling methods in the laboratory. Handling can be a source of anxiety and stress and therefore can affect experimental results. A recent study by Hurst and West (*Nature Methods* 7, 825-826, 2010) has assessed the effects of routine laboratory animal handling procedures on anxiety and stress responses in mice in anticipation of handling. Their results showed that picking mice up by their tails caused aversion and high anxiety levels while the use of tunnels or open hands led to voluntary approach and low anxiety levels.

Useful links

Procedures with Care –
www.procedureswithcare.org.uk

This web site provides information to assist research workers develop their skills in the administration of substances to laboratory animals. The site focuses

particularly on the manual skills needed to carry out the different procedures humanely and efficiently, and on the need to handle animals carefully to reduce any distress caused by the procedure.

The Enrichment Record –
www.gr8tt.com/enrichrecord.html

This is a free quarterly online magazine/forum for discussing environmental enrichment in the care of laboratory animals; documenting best practices and approaches for addressing challenges of implementation and assessment at every level; sharing data on the impact of environmental enrichment on science; and building the case for integrating enrichment into research design.

Tamara Diesch
Technical Adviser, Animal Welfare Standards
Ministry of Agriculture and Forestry
tamara.diesch@maf.govt.nz

AEC Workshop

A function of the National Animal Ethics Advisory Committee (NAEAC) is to provide advice and information to animal ethics committees (AECs). One of the ways NAEAC provides this support is by hosting biannual workshops for AECs to discuss topics and issues of relevance.

NAEAC held such a workshop in Wellington on Friday 26 November 2010, the theme of which was *Ethics in Action* and 22 of New Zealand's 33 AECs were represented on the day.

Professor Donald Evans from the Bioethics Centre, Dunedin School of Medicine, University of Otago, provided the first, and very thought provoking keynote presentation of the day – “Are animals our equals?”

In addition to hearing presentations from Professor Evans and Mr James Batty, attendees were also able to participate in workshops on statistics, monitoring, grading of manipulations, genetic modification and ethics, new experimental models, administrative processes, animals in teaching and health monitoring and endemic illness.

Feedback has been positive and the continuation of these workshops will allow NAEAC and the Ministry of Agriculture and Forestry (MAF) to ensure that effective and consistent regulation of research, testing and teaching is taking place in all New Zealand organisations.

Enquiries relating to the 2010 workshop should be directed to NAEAC@maf.govt.nz.

NAEAC Occasional Papers

From time to time the National Animal Ethics Advisory Committee (NAEAC) publishes papers it considers will be of relevance to those with an interest in the use of animals in research, testing and teaching – particularly animal ethics committee members.

The publication of the first two papers was reported in Welfare Pulse Issue 3 and since then there have been another three papers published.

Paper 3 is entitled *Regulation of animal use in research, testing and teaching: Comparison of New Zealand and European legislation*. Paper 4 is entitled *Compliance monitoring: The University of Auckland approach*. Paper 5, *Monitoring methods for animal ethics committees*, was issued in October 2010.

The occasional papers are available from the Ministry of Agriculture and Forestry website: www.biosecurity.govt.nz/regs/animal-welfare/pubs/naeac

Unitec receives award for humane use of animals in RESEARCH, TESTING AND TEACHING



The teaching team in the Department of Natural Sciences at Auckland's Unitec has been selected as the recipient of the 2010 National Animal Ethics Advisory Committee (NAEAC) Three Rs award.

The team received the award in recognition of their consistent and deliberate adherence to Three Rs principles and the embodiment of them into their teaching programmes and practices.

NAEAC selected the Department's work from several high calibre nominations and considered their efforts to consistently make a point of promoting commitment to humane education to have far-reaching



effects within the community.

The concept of the Three Rs, from which the award takes its name, is to *replace* live animal subjects, *reduce* the number of animals used and *refine* experimental techniques to minimise pain and distress.

"The Department of Natural Sciences teaching team at Unitec have developed a shared vision across all programmes that reflects these ethical concerns" said NAEAC chairperson, Dr Virginia Williams.

"Guidelines have been developed and aligned with the underpinning philosophy that the use of animals in teaching is only acceptable if it contributes to an understanding without necessitating harm or

suffering."

A major achievement for the Department has been the development of a dedicated simulation suite – with specially designed models and mannequins – that allows students to practise their skills without the requirement for access to real animals until later stages in their training. This has allowed the team to substantially improve student training and ethical awareness, as well as reduce and replace animal use in teaching.

Although difficult to measure the reduction in animal use in teaching, staff have estimated that across all programmes, animal use has been reduced by at least 25% overall.

This national award is co-ordinated by NAEAC and is made annually to an individual, group or institution within New Zealand that epitomises best practice with regard to the Three Rs.

Minor amendments to codes of ethical conduct

Code holders may make minor amendments to their code of ethical conduct. Code holders are reminded that if they have made any minor amendments during 2010, they are required by law to notify MAF in writing of the changes as soon as practicable and by 31 March 2011 at the latest.

The Animal Welfare Act 1999 defines a minor amendment as one "that would not materially affect the purposes of the code".

Linda Carsons
Principal Adviser, Animal Welfare Standards
Ministry of Agriculture and Forestry
linda.carsons@maf.govt.nz

The National Animal Ethics Advisory Committee (NAEAC) invites applications or nominations for the:

THREE Rs AWARD 2011

To reward and promote implementation of Three Rs principles in research, testing and teaching

The Three Rs (replacement, reduction and refinement) are the cornerstone of the ethical use of animals in research, testing and teaching. This award celebrates achievements in the implementation of the Three Rs and promotes the concept within the scientific community and to the wider public. The award is co-ordinated by NAEAC and is made to an individual, group or institution within New Zealand that shows great commitment to, or innovative implementation of, the Three Rs, or whose work will help to promote awareness of Three Rs principles.

The prize will consist of a certificate and a significant financial award, to be presented at an appropriate formal occasion later this year. Receipt of the Award will be publicised in selected media, although specific details of the work involved can be restricted if appropriate.

Applications or nominations (with knowledge of nominee) should be sent to:

NAEAC Secretariat
c/- Ministry of Agriculture and Forestry
P O Box 2526
Wellington 6140

There is no application form but you must provide:

- evidence of how the applicant or nominated individual, group or institution qualifies for the Award (maximum of three pages)
- curriculum vitae of the applicant(s) or nominee(s)
- the names and contact details of up to two potential referees (who may, at the committee's discretion, be approached for comment)

Applications close on Friday 6 May, 2011.

Please direct enquiries to the NAEAC Secretariat (email naeac@maf.govt.nz)

NAEAC APPOINTMENTS



Dr Justine Stewart is a veterinarian with laboratory animal experience. She began her career in clinical veterinary practice and has

also worked for the New Zealand Food Safety Authority Verification Agency, in the veterinary pharmaceutical industry,

and with the Ministry of Agriculture and Forestry.

Until recently, Justine was the Animal Welfare Officer at the University of Auckland and she is currently working at Auckland Meat Processors.

Professor Martin Kennedy works in the Department of Pathology at the University of Otago, Christchurch, and is also the Director of the Carney Centre for Pharmacogenomics. He is a member of the Editorial Advisory Boards of Personalized Medicine and



of the Australian and New Zealand Journal of Psychiatry.

Martin was a member of the Australian and New Zealand Council for the Care of Animals in Research and Teaching Board from 2001 to 2006.

His current research focus is on psychiatric genetics and pharmacogenomics.

He was nominated to NAEAC by the Health Research Council of New Zealand.

CODES OF ETHICAL CONDUCT

– approvals, notifications and terminations since issue 6

All organisations involved in the use of live animals for research, testing or teaching are required to adhere to an approved code of ethical conduct.

Codes of ethical conduct approved: Nil

Transfers of codes of ethical conduct approved: Nil

Code holder name changes: Nil

Amendments to codes of ethical conduct approved: Nil

Notifications to MAF of minor amendments to codes of ethical conduct: Nil

Notifications to MAF of arrangements to use an existing code of ethical conduct

- Anderson, Peter (to use Landcare Research NZ Ltd's code)
- Cropmark Seeds Ltd (to use Lincoln University's code)
- New Zealand Institute for Plant and Food Research Ltd – Nelson (to use Nelson Marlborough Institute of Technology's code)
- Otago Polytechnic (to use University of Otago's code) (renewal – arrangement expired)

Codes of ethical conduct revoked or expired or arrangements terminated or lapsed:

- Intervet Ltd

Approvals by the Director-General of MAF for the use of non-human hominids: Nil

Approvals by the Minister of Agriculture of research or testing in the national interest: Nil

Linda Carsons
Principal Adviser, Animal Welfare Standards
Ministry of Agriculture and Forestry
linda.carsons@maf.govt.nz

UPFRONT AND INVOLVED

– a proactive approach to animal welfare



Fonterra is committed to animal welfare on many levels, to support both farmers and regulators and to satisfy our customers. We actively work with our suppliers and with organisations such as the Ministry of Agriculture and Forestry (MAF), DairyNZ and the New Zealand Veterinary Association (NZVA) so we can spot issues before they become serious and help our suppliers improve their practices.

It's important to Fonterra that our farmers demonstrate good animal husbandry practices and education is the best way to keep standards high. Our animal welfare expectations are clearly defined in the Fonterra Suppliers' Handbook, along with policies to suspend collection if our requirements are not met.

On a day-to-day basis, our Area Managers in the field and our Supplier Services Team on the phone can answer questions about animal welfare. Area Managers also have material to discuss and leave with suppliers. To ensure that farmers know that animal welfare isn't just about "skinny cows", we have specific information and regulations available so they can learn more about husbandry procedures, sheltering animals properly and transporting animals correctly.

We also examine suppliers' practices every year during the Farm Dairy Assessment. This is when we check specific animal welfare practices including docking and inductions.

If an occasional or potential animal welfare issue is noticed on-farm there is a clear process that our Area Managers follow in conjunction with DairyNZ. If the matter is more serious, a Fonterra Milk Quality Advisor and MAF work with the supplier to create an action plan to remedy the situation.

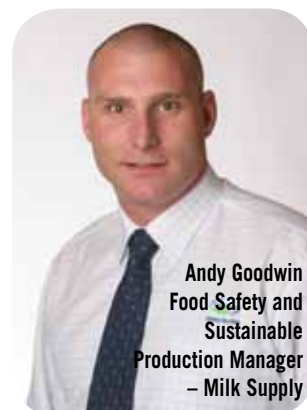
We continuously consult with DairyNZ and MAF to improve our early warning systems as well as our action plans so we can provide our suppliers with appropriate solutions to any animal welfare issue. We contribute to, and review, the extensive collateral produced by DairyNZ. We also contribute to the Agriculture Industry Training Organisation's animal welfare training material.

In regard to animals provided for slaughter, we work with the meat industry, the slaughter plants, the New Zealand Food Safety Authority, the NZVA and Road Transport Association to develop guidelines for our suppliers. When these

agencies have feedback or provide new information, we share it with farmers and get their feedback to maintain a consultative process.

Fonterra takes responsibility for ensuring that our farmers do the right thing and we encourage them to ask questions at any time – either directly to us or to the regulators that we work with. This proactive approach to our suppliers and industry partners helps keep animal welfare practice and its perception positive.

Andy Goodwin
Food Safety and Sustainable Production
Manager – Milk Supply
Fonterra Co-operative Group Limited
andy.goodwin@fonterra.com



ANIMAL WELFARE

Compliance and Enforcement Programme

Programme Manager Leonie Ward provides an update on the progress of this new programme.

In July 2010 the *Safeguarding our Animals, Safeguarding our Reputation – Improving Animal Welfare Compliance in New Zealand* plan was finalised. This plan charts a course for improving animal welfare compliance in New Zealand through everyone taking responsibility for the welfare of animals. A critical element of the successful implementation of this plan is the development of effective partnerships between government and industry.

I was appointed Compliance and Enforcement Programme Manager in August and since then have been busy meeting with key industry stakeholders and putting together a programme of work. It is encouraging to see how much animal welfare related activity there is going on and how open groups have been to working in partnership.

During the last six months I have focused on developing Memorandums of Understanding (MOUs) between the Ministry of Agriculture and Forestry (MAF) and animal welfare stakeholders; researching the ability of MAF and industry groups to share animal welfare information; and confirming sector governance arrangements.

The MOUs formalise an intention to work in partnership, and clarify roles and responsibilities in relation to specific animal welfare initiatives. There are seven MOUs at the development stage and an additional three out for consultation.

The Primary Industries Chief Executives Animal Welfare Forum is a new committee that will act as the oversight body for the livestock production sector. Membership comprises of Chief Executives and senior management across livestock industry groups and government. This forum will encourage collaboration and information sharing on animal welfare initiatives, as well as provide advice to MAF on the strategic direction and implementation of the Compliance and Enforcement Programme

and work plans.

This oversight forum will be supported by an operational reference group called the Producer to Processor Animal Welfare Forum. This forum is a previously established committee, now assuming the joint role as the Operational Reference Group for the Compliance and Enforcement Programme. The purpose of the Producer to Processor Animal Welfare Forum is to provide a point of coordination and information sharing for animal welfare related initiatives across the pastoral livestock production sector, and to improve the relationship between industry groups and MAF.

As well as finalising the MOUs and implementing the governance structure outlined above, the Compliance and Enforcement Programme includes other significant initiatives for 2011. These include:

- revising the Federated Farmers Toolkit for farmers helping to resolve animal welfare issues and developing a similar toolkit for veterinarians;
- the third year and consolidation of the Bobby Calf Project;
- exploring the options of combining animal welfare components in the current Risk Assessment audit for Layer Hens;
- working with Verification Agency veterinarians to improve calibration and consistency regarding animal welfare issues at slaughter plants across New Zealand.

Many of these are joint industry/government initiatives and all will require robust planning, agreed objectives and performance measures. While there is a lot of work ahead, I am enthusiastic about 2011 and believe that the Programme will help deliver a significant improvement in the welfare of animals in New Zealand.

I am happy to meet with anyone who is interested in the Compliance and Enforcement Programme or working on animal welfare related initiatives. Please feel free to contact me by phone or email.

Leonie Ward
Manager, Animal Welfare Compliance and Enforcement Programme
Ministry of Agriculture and Forestry
leonie.ward@maf.govt.nz

Investigation of former Crafar-owned farms concludes

An investigation by the Ministry of Agriculture and Forestry (MAF) into the operations of former Crafar-owned farms has concluded, with MAF determining breaches of the Animal Welfare Act.

Charges have been filed in the Taupo District Court against five parties for being owners/in charge of animals and not meeting their welfare needs.

The charges relate to a farm investigated by MAF in October 2009 as part of a wider review of all Crafar owned properties.

MAF Acting Deputy Director-General Peter Thomson says "Given the complexity of some of the alleged breaches and the co-operation needed to gather evidence this investigation has taken time, but as with any investigation, we wanted it to be thorough and robust".

"There were also several complex relationships involved and part of the work we have undertaken has been to get to the bottom of these to assess ownership, control and responsibility for animal welfare".

As Warranted Inspectors under the Animal Welfare Act (1999), MAF's role is to investigate any possible offences and ensure that if any unreasonable or unnecessary pain or distress is being suffered by animals on the farm, they prevent or mitigate it by ensuring appropriate steps such as veterinary treatment and husbandry procedures are carried out.

DOG OWNERSHIP AND ANIMAL WELFARE

an overview of legislation and your responsibilities

As we all know, a well cared for dog will provide a lifetime of friendship and fun. Most responsible dog owners are aware of their dog's basic needs and know that providing for these needs will ensure that their companion is kept healthy and happy.

However, not all dog owners are aware of the various types of legislation that govern their responsibilities as a dog owner and their specific legal responsibilities to ensure that the welfare of their pet is maintained.

The welfare of animals in New Zealand is governed primarily under the Animal Welfare Act 1999 (the Act) which is the overarching piece of animal welfare legislation and is applicable to all animals, including dogs, within New Zealand. It imposes obligations on owners and persons in charge of animals to ensure that the physical, health and behavioural needs of all animals in their care are met.

As the Act covers the welfare of all animals, used for all purposes, it doesn't contain specific details and requirements as to how to care for any specific species. To include such detail would make it far too large to be practical. Instead, the Act addresses this by containing provisions for the development of codes of welfare.

Codes of welfare are physically separate documents from the Act itself and contain detailed information that outline how to care for specific species of animals, or animals being used for particular activities – for example, those used in rodeos, held in zoos or being transported.

The Animal Welfare (Dogs) Code of Welfare 2010 was issued by the Minister of Agriculture following an extensive process of public consultation and development. This code applies to all dogs in New Zealand that are kept for all purposes: for companionship; for sport, breeding, or for working purposes. It contains a number of minimum standards that set specific minimum requirements relating to the care and management of dogs.

These minimum standards relate to everything from food and water, to exercise, debarking, transportation, whelping, supply of puppies and body condition. The code also includes recommendations for best practice to encourage standards of care that are better than just the minimum, and advice and information to encourage a high level of welfare.

It is important to be aware that codes of welfare do not provide an exhaustive list of the Act's requirements and owners, and those in charge of dogs, must comply with the minimum standards in the code *and* the general provisions of the Act.

The minimum standards contained in codes of welfare have a legal effect in that a breach of a minimum standard can be used as evidence in court if a person is charged with an offence. On the other hand, a person charged with such an offence can also use the fact that he or she has met a minimum standard as a defence.

Other legislation that is relevant to the welfare of dogs includes the Dog Control Act 1996 (covering the registration and public control of dogs), the Biosecurity Act 1993 (covering the feeding of offal to dogs to manage hydatids and sheep measles) and the Consumers Guarantees Act 1993 (which ensures the right of purchasers of puppies or dogs to receive individuals that are "fit for purpose" and "free of defects").

Codes of welfare that will address the



transport of animals within New Zealand and boarding of animals in temporary housing facilities (i.e. boarding establishments, pet shops etc) are also currently under development. All dog owners should be aware of the legislation that is relevant to their own situation.

Knowledge of the legislation governing animal welfare in New Zealand is beneficial for all responsible dog owners. In particular, a familiarity with the contents of the Code of Welfare (Dogs) is recommended for both first time and life-long dog owners and will help to ensure that the dogs in their care are both healthy and happy. The Animal Welfare Act and the Code of Welfare (Dogs) can both be found online at www.biosecurity.govt.nz/regs/animal-welfare

Nicki Cross
Technical Adviser, Animal Welfare Standards
Ministry of Agriculture and Forestry
nicki.cross@maf.govt.nz

Welcome to 2011 and WORLD VETERINARY YEAR

2011 marks the 250th Anniversary of the start of veterinary education with the first veterinary school “in which the principles and methods whereby livestock diseases may be cured will be taught in public” being established in Lyons, France in 1761 by Claude Bourgelat.

Bourgelat – Grand Equerry of France and Director of the Lyon Academy of Horsemanship – was the first scientist that dared to suggest that studying animal biology and pathology would help improve understanding of its human counterparts and the concept of comparative pathobiology upon which modern medicine is based.

A profession that started out as an examination of the anatomy of the horse and a King’s blessing, to establishing a school, veterinary education and medicine has come a long way.

This includes our own beginnings in New Zealand when the first veterinarian arrived on the shores of Taranaki in 1843, only to die when he was kicked in the head while unloading horses in the surf. The first recorded veterinary practice was set up the same year in Wellington by John Webster.

Vet for health, vet for food, vet for the planet

Today’s veterinarians are not only animal doctors and animal welfare advocates, they’re also key public health stakeholders because of their crucial role in controlling many of the world’s diseases.

With the major challenges the world faces – increasing human populations, food security, the impact of climate change and extensions in the range of zoonotic diseases, ecosystem damage and loss of biodiversity – the veterinary profession is at the forefront of the “One Health One World” concept where veterinarians and their human medical counterparts play a major role in a changing world, and our future contribution to society.



Let the celebrations begin

World Veterinary Year 2011 will be celebrated by veterinary associations around the world. The New Zealand Veterinary Association (NZVA), Ministry of Agriculture and Forestry (MAF), Massey University and the Veterinary Council of New Zealand, have a range of media and marketing events planned throughout the year to celebrate this milestone in New Zealand.

The year started with the official launch of World Veterinary Year at the French Embassy in Wellington, as a celebration of the French connection. Hosted by the Hon David Carter and French Ambassador Francis Etienne, it was well attended by key stakeholders in the veterinary industry.

Back to the Future is the theme of the NZVA multidisciplinary conference being held in Christchurch in June. With a blended programme to suit specialists, general practitioners, vet nurses and paraprofessionals, there’s something for everyone. Celebrating the past, present and future of the veterinary profession, this event promises to write itself into the history books and more information about

it can be found at

www.conference2011.nzva.org.nz

Veterinary and paraprofessional students are invited to share in celebrations by entering an essay competition aimed at finding out what the next generations’ vision of the veterinary profession is.

250 years on, Claude Bourgelat’s theory that by studying animal biology and pathology would help improve our understanding of human biology lives on. If Bourgelat were alive today, he’d be proud of the significant steps that have been made in the profession’s contribution to improving animal and human health worldwide.

Let’s take time to reflect on the past, present and future of the veterinary profession and make 2011 a year to celebrate success.

For more information about World Veterinary Year 2011 visit www.vet2011.org, or go to www.vetspace.org for detail about celebratory events.

Jacqui Sadler

**Marketing Communications Manager
New Zealand Veterinary Association
Jacqui.Sadler@vets.org.nz**

CATTLE:

Freeze branding recommended

Accurate and permanent identification of cattle is clearly an important procedure for farmers involved in their breeding. While electronic identification of cattle will be compulsory under the National Animal Identification and Tracing (NAIT) system from 1 November this year, farmers still need to be able to identify their animals from a distance. Numbered eartags work well, but branding has traditionally been used, particularly by stud breeders.

However, Minimum Standard 13(b) of the Sheep and Beef Cattle Code of Welfare released in 2010 states that “hot branding must only be used with pain relief” in acknowledgement of the pain caused by this procedure. Requests to veterinarians for help from those breeders who had traditionally used this method of identification led to discussion within the Sheep and Beef Special Interest Branch of the New Zealand Veterinary Association as to the best way to provide such pain relief. It was decided that the application of local anaesthesia was unlikely to provide adequate pain relief and that

the only feasible way to prevent the pain was with systemically applied analgesics or anaesthetics. Given the economics of applying these drugs on a large scale, the sheep and beef veterinarians elected freeze branding as their recommendation to those farmers who still wanted to brand.

Freeze branding, which involves the application of liquid nitrogen to the skin, has been shown to be less painful than hot branding, although the code of welfare still recommends it is done using pain relief. Concerns have been expressed by farmers that it is less effective than hot branding, but it appears this is most likely due to faulty application rather than an innate problem with the branding procedure itself. To this end, the sheep and beef veterinarians are in the process of drawing up guidelines for the effective use of freeze branding so that the brand remains visible throughout the life of the animal.

Virginia Williams
Animal Welfare Co-ordinator
New Zealand Veterinary Association
v.williams@xtra.co.nz



Research relating to animal welfare

The Ministry of Agriculture and Forestry (MAF) supports animal welfare research according to priorities that are agreed to by the National Animal Welfare Advisory Committee (NAWAC) or the National Animal Ethics Advisory Committee (NAEAC).

Research reports are available on request by email to animalwelfare@maf.govt.nz or through www.biosecurity.govt.nz/biosec/research#fund.

Reports completed in 2010:

- Can New Zealand develop a tissue-bank or tissue-sharing system to reduce animal use in research, testing and teaching?

- How humane are our vertebrate pest control tools, including assessment of the alternatives to chloropicrin for rabbit control.
- Pain relief during painful husbandry procedures in livestock.

Projects due to be completed in 2011:

- Evaluation of colony systems (furnished cages) for the New Zealand egg market (using the same assessment measures as the Operational Research project on layer hen welfare across all housing systems).
- World leading sustainable sow management – an investigation of welfare and productivity outcomes, and

- husbandry and management practices that make group housing systems work on commercial units in New Zealand.
- Optimum time for pre-transport standing off green feed and impact on the welfare of sheep (cull ewes).
- A survey of the incidence and causes of lameness in New Zealand broiler chickens.
- An animal welfare risk assessment of housing systems for dairy cattle.
- Public attitudes to animal welfare.

GLOBAL ANIMAL PARTNERSHIP

and the 5-Step Animal Welfare Rating Standards

Can farmers, retailers, scientists and four of the world's largest animal advocacy organisations not only find common ground but work together? Can a single voice emerge from so many opinions? What was the impetus behind forming a multi-stakeholder, non-profit organisation and developing a groundbreaking, multi-tiered rating programme that encourages ever higher farm animal welfare?

Global Animal Partnership is a US-based international charity founded in 2008. We bring together stakeholders to advance our singular mission of actualising continuous improvement in the welfare of farm animals, principally through our signature initiative – the 5-Step Animal Welfare Rating Standards.

This unique 5-Step programme is the only animal welfare rating system developed by producers working collaboratively with non-profit animal advocacy organisations, where retailers' needs are integrated with concern about animal welfare, and where scientific research joins with on-farm wisdom.

Each Step – from 1 to 5+ – has its own requirements that must be met before certification to that particular level is assigned and its own distinct label identifying the Step achieved. In essence, Step 1 prohibits cages and crates. Step 2 requires environmental enrichment for indoor systems; Step 3, outdoor access; Step 4, pasture-based production; Step 5, an animal-centred approach prohibiting all physical alterations; and, finally, Step

5+, the entire life of the animal on the same integrated farm.

In contrast to single-tiered programmes, 5-Step's very design engages a broad spectrum of producers. Essentially, it recognises producers for the welfare they afford their animals, encourages innovation and incentivises even higher welfare farming. The programme informs consumers about production methods and provides them with real choices at different welfare levels, and it affords purveyors a wide range of products to offer.

As the standard-setter, Global Animal Partnership elected to work with third-party certification companies authorised to assess compliance with the programme. These certifiers perform the audits and issue Step certificates using trained and ratified auditors and expert consultants, including Dr Jim Webster from AgResearch in New Zealand. Farmers, consumers and retailers alike can be assured that Step ratings are fair, accurate and free of any conflict of interest.

We recently welcomed the conclusion of an exclusive, two-year pilot partnership with Whole Foods Market, North America's largest natural and organic food grocer. This was the first of three sets of on-farm standards – for broiler chickens, beef cattle and pigs. In these early years, our 5-Step initiative has become a leading animal welfare rating certification programme, and we are already engaging new retail partners, both restaurants and groceries, in North America and beyond. We are well into the second phase of programme development, revising current standards based on new science and key learnings from our pilot, and developing multi-tiered standards for laying hens, turkeys, sheep and lambs. The third phase will include



Step-rated chickens (image courtesy of White Oak Pastures)

standards development for other aspects of production, such as breeding and slaughter.

As of 31 January 2011, nearly 1200 operations, raising more than 140 million animals annually, have been audited and certified to the 5-Step standards – 318 beef cattle, 423 broiler chicken and 450 pig farms.

Global Animal Partnership strives to change the landscape of animal agriculture through a positive, rewarding, multi-stakeholder approach.

Will Harris, owner and operator of White Oak Pastures, a US farm that achieved a Step 4 rating for cattle and Step 5 for chickens, shares: "Global Animal Partnership is uniquely inclusive. They listen to the concerns of producers and are eager to learn from the experiences of herdsmen and farmers. They truly are a multi-stakeholder partnership – in practice and in name – and I am proud to be a part of this team."

We seek to collaborate with anyone concerned about the welfare of farm animals and invite you to join us.

Miyun Park
Executive
Director
Global Animal
Partnership
mpark@
globalanimal
partnership.org



Step-rated pigs (image courtesy of Niman Ranch Pork Company)

WSPA AND SAMOAN GOVERNMENT work together to improve animal welfare

In April 2009, the government of Samoa declared its support for the development of a Universal Declaration on Animal Welfare (UDAW) and requested that the World Society for the Protection of Animals (WSPA) partner with the Ministry of Agriculture (MAF) to develop animal welfare legislation and integrate animal welfare into existing farmer training.

By September 2010, Samoa MAF advisory staff had received training about animal welfare and how to integrate it into their existing training for improved poultry, pig, and cattle production, as well as humane slaughter.

WSPA is continuing to work with the Samoan government to help draft national animal welfare legislation and a Samoan animal welfare organisation partnered with WSPA and Unitec (Auckland) to conduct a public survey on the attitudes and care towards dogs to support future policy, legislation and education. This initiative is seen as a great example of a Pacific nation's commitment to improving animal welfare.

Many Samoans traditionally raise free range poultry and pigs for cultural and societal reasons. These animals are fed leftovers and forage around the village with little management, being killed as needed for local ceremonies or celebrations. A more recent trend is the

growing number of farmers with small intensive systems yet little knowledge of providing for their animals' basic needs. As a consequence, significant new welfare issues are arising.

Raising cattle is the main commercial livestock industry in Samoa with its own farming association. However, nutritional, disease and breeding management still raise welfare concerns. Inhumane home methods of slaughter are another key issue for all farm animals and Samoa does not currently have a single abattoir.

MAF farmer training sessions are held regularly throughout the year and are free for farmers. The aim of the WSPA farm animal welfare training was to ensure MAF staff had a good understanding of animal welfare principles and address locally relevant issues, approaches and solutions to integrate with existing farmer training.

After an initial review of Samoan farmer systems, practices and MAF training syllabus, it was decided to relate animal needs to the natural behaviours in free range systems with which Samoans were traditionally familiar. The training then focused on each species, integrating the "Five freedoms" into husbandry principles and practices with videos, discussion and farm visits. A participatory and practical training approach was emphasised. "Train-the-trainer" sessions for MAF advisory



Samoa MAF advisory staff (left) and pig farmers discussing welfare at a semi-free range pig system

and animal health staff were provided with practical relevance also to MAF pig and poultry breeding systems (which provide improved genetics to Samoan farmers). Next, the MAF staff provided training to a small pilot group of pig farmers. Locally available, low cost improvements for pig farmers such as constant access for pigs to water; improved feed; appropriate bedding and nesting materials; weaning; and comparison of various systems were discussed. Humane handling and slaughter principles were also integrated into MAF farmer training which will improve safety, meat hygiene and quality.

The training was very well received by both Ministry staff and farmers. It was very rewarding to see how quickly Ministry staff understood and conveyed key principles. Farmers were genuinely interested in the needs and behaviours of farm animals, reflecting the potential for changing farmer attitudes and practices. Some more experienced farmers were also able to relate improved practices to newer farmers during the sessions and farm visits. Not only does this peer discussion create supportive farmer networks but it has proven to be a good mechanism for farmer learning.

Kate Blaszk
Veterinary Consultant
World Society for the Protection of Animals
blaszakkate@yahoo.com.au





Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Photographer: Cortiz Rigas.

WORSE THINGS HAPPEN AT SEA: The welfare of wild-caught fish

The magnitude of an animal welfare problem may be quantified as the product of the severity, duration and number of animals affected. In the case of commercially caught wild fish, the severity of suffering is likely to be high, the duration extended and the numbers huge. This suggests that commercial fishing is a major welfare issue. Suffering caused to fishes could be substantially reduced by measures to reduce the stress caused during capture and killing; the duration of capture and the numbers of fish caught. Such measures could also promote sustainability and fish eating quality.

There is good reason to believe that fishes are sentient. In her recent book *Do Fish Feel Pain?*, fish biologist Dr Victoria Braithwaite argues there is now sufficient evidence to conclude that fish do feel pain (or enough to give them the benefit of the doubt). A growing acceptance of fish sentience has brought concern for the welfare of farmed fish during rearing, transport and slaughter. Humane slaughter technology, including automatic percussive and electrical stunning machines, has been developed for aquaculture. Meanwhile, the welfare of commercially caught wild fish is a

neglected but emerging issue.

My concern for this issue was awakened after watching an English trawl fisherman gutting his catch on television. The still flapping fish was then thrown into a bucket. I later realised that live gutting of fish without prior stunning is standard practice. Similar treatment of mammals or birds would be almost universally condemned. I wrote my report, *Worse Things Happen at Sea: The welfare of wild-caught fish*, to raise awareness.

Fish are likely to be caused considerable suffering during capture, landing and subsequent processing, for example, when they are:

- crushed under the weight of other fish in trawl nets;
- raised from deep water and suffer decompression effects;
- snared in gill nets;
- impaled live on hooks as bait.

Duration of capture can be long, lasting hours or even days. Most fish that are alive when landed are either left to asphyxiate, or die during further processing, which may include gutting, filleting and freezing while alive and conscious.

I have estimated the number of fish landed

globally each year as 0.97–2.7 trillion, or in the order of a trillion individuals, based on World Food and Agriculture Organization fisheries statistics and estimated mean weights for fish species (excluding shellfish, discards and illegal fishing).

The welfare of individual fish caught could be improved through measures that include:

- reducing duration of capture;
- using methods of capture and types of net/hook that reduce injury to fish;
- reducing stress and injury during landing;
- avoiding the use of live bait fish;
- humane slaughter methods.

High-value tuna are sometimes killed by spiking the brain to improve fish quality. Many anglers manually stun the fish for welfare and quality reasons. However, in commercial fisheries humane killing is the exception rather than the rule. Manual stunning could be practicable for larger or higher value fish. For larger numbers of smaller fish, automated stunning or killing needs to be developed or adapted from aquaculture.

Animal welfare impacts could also be reduced by catching fewer fish through

Photo: Alaska Fisheries Science Center, Marine Observer Program, National Oceanic and Atmospheric Administration/Department of Commerce.



Fish caught in a trawl showing signs of decompression.

a range of fish conservation strategies, including measures to reduce bycatch and lower, more sustainable, fishing levels.

There would be economic consequences. Humane slaughter will require additional labour. Shorter duration times may also increase labour and reduce catch sizes. However, there are likely to be fish eating and welfare quality benefits that many consumers would appreciate the opportunity to pay for.

The report *Worse Things Happen at Sea: The welfare of wild-caught fish* and the estimate of numbers are available at fishcount.org.uk.



Alison Mood
fishcount.org.uk
amood@fishcount.org.uk

People in animal welfare

The Ministry of Agriculture and Forestry (MAF) Animal Welfare Standards Directorate is pleased to announce the appointment of the following staff:

Dr Mark Fisher – Senior Adviser



Mark joins the team for a 12 month period to cover the secondment of Dr Kate Littin to another group within MAF, and will be working on Codes of Welfare.

Mark has a background in sheep and beef farming and has been a scientist with interests in the reproductive physiology and welfare of farm animals. More recently, he developed an agricultural ethics programme and established a science and ethics consultancy addressing issues related to animal welfare, especially extensive farming, and biotechnology. Mark has also served on the National Animal Welfare Advisory Committee (NAWAC).

Dr Nicki Cross – Technical Adviser



Nicki has a background in animal behaviour, physiology and welfare, and gained her PhD in Neuroscience and Animal Behaviour at the University of

New England, Australia. Her thesis was on stress physiology and its relation to behaviour. She undertook her post doctoral fellowship at the Centre for Animal Welfare and Ethics (CAWE) at the University of Queensland.

The focus of Nicki's work at MAF will be Codes of Welfare.

Penny Timmer-Arends – Team Support Officer

Penny is NAWAC



secretary and also provides administration support for leg-hold traps and live animal export applications. She graduated in 2009 from Massey University with a Diploma in Science and Technology.

Brigid Jenkins – Team Support Officer

Brigid will be working on international and domestic liaison meetings and providing general administration assistance to the group during her six months with the team. She has recently returned to New Zealand after spending time in Canada and the United Kingdom, and has a background in education.



BRAZIL HOSTS

major international conference

A landmark international animal welfare conference was held in Goiânia, Brazil last year, from 14 to 15 October. The “First International Transdisciplinary Congress on Fauna Protection” was sponsored by the Prosecutor General’s Office of the State of Goiás and supported by both the Regional Veterinary Association and Regional Veterinary Council.

The decision to hold such a conference in Brazil indicates a developing interest worldwide in animal welfare relating to the use of animals in agriculture, in science and for other purposes. The conference attracted around 300 delegates and received considerable local media attention.

The Prosecutor General’s Office was established in 1988 to ensure that societal views could be expressed, and heard, on a range of issues and concerns. This role requires close interaction with non-governmental organisations (NGOs). Inevitably, tension can arise from the State mandate to enforce existing law versus (often single issue) NGOs wishing to influence legal change. The Prosecutor General’s Office has, however, played an important role in relation to general environmental, forestry and land rights issues. It is envisaged the Office will assume an important role in the future in relation to ongoing dialogue and debate on animal welfare and bioethics issues.

The conference represented a significant joint leadership initiative by the legal and veterinary professions. In his opening address, the President of the Regional Veterinary Council referred to the intensification of agricultural production systems to satisfy global food needs. He emphasised, however, that the time has also come to address the associated animal welfare issues in order to create a more compassionate Brazilian society.

Conference abstracts and presentations are available on www.congressofauno.com.br, and future conferences are planned at both



Left to right – Dr Bryan Howard, United Kingdom, Dr Ekaterina Rivera, Brazil, Dr David Bayvel, New Zealand

a national and an international level.

The conference closed with discussion on a formal Declaration, which included the following recommendations.

That it should be made compulsory for environmental law to be taught in law schools and that courses should include the topics of ethics and animal welfare, which should be taught, as far as possible, by veterinarians specialised in this area.

That it should be made compulsory for ethics and animal welfare to be included in courses in schools of medicine, veterinary medicine, biology, zootechny and agronomy.

That a transdisciplinary group be established to draw up a proposal for a core syllabus, specifying the topics that should be taught in the classes identified in terms 1 and 2.

That universities be encouraged to re-evaluate their animal-based teaching and research strategies, so as to give priority to alternative methods and otherwise to minimise the numbers of animals used.

To make it compulsory for all persons who will use animals in teaching and/or research to have successfully completed a previous qualification in Laboratory Animal Science.

To promote permanent and continuous collaboration among professionals from

the law area and those whose work is to deliver high standards of animal welfare.

To establish a transdisciplinary working group, within 60 days (date to be defined), to prepare a proposal for a new law on animal welfare to be sent to the National Congress.

To adopt a set of standards involving a major collaboration between the Executive, Legislative and Judiciary powers relating to the protection of fauna.

To urgently implement public policies on fauna protection.

To engage in an ongoing dialogue with animal protection and animal rights groups, and other interested organisations, with the objective of seeking common ground, by reflection on controversial issues, looking for mediation, balance, knowledge and understanding of animal-related issues, working in partnership and avoiding radicalism.

To raise awareness in children in schools by means of lectures, video exhibitions, distribution of educational material and other means, of the need to protect fauna.

To establish a partnership with SICA (Central American Integration System) by means of a Cooperation Agreement, or other similar document, in order to interchange experiences about the issues addressed by this congress and to develop

future joint activities in the area of environmental protection.

To establish a partnership with OIE/ OMSA (Organisation Mondiale de la Santé Animale) by means of a Cooperation Agreement or other similar document, in order to exchange experiences concerning the issues addressed in this congress and

to develop future joint activities in the area of environmental protection.

To maintain the partnership between the State Public Ministry and the veterinary associations of all Brazilian states in order to implement State initiatives addressing fauna protection and to integrate the activities of professionals in this area.

A C David Bayvel
Director Animal Welfare Standards
Ministry of Agriculture and Forestry
Chair, OIE Animal Welfare Working Group
David.bayvel@maf.govt.nz

ECONWELFARE: Socio-economic aspects of farm animal welfare

The European Commission recently funded a three year project under the Seventh Framework Programme entitled *Good animal welfare in a socio-economic context: project to promote insight on the impact for the animal, the production chain and European society of upgrading animal welfare standards* or, to give it its shortened title, “EconWelfare”.

The project consists of a programme of stakeholder based research which aims to assess current welfare standards for farm animals both in Europe and in countries which are trading partners with the European Union (EU), including New Zealand. Based on an analysis of the information collected, the project ultimately aims to determine what policy instruments could promote higher animal welfare standards and what influence the new upgraded standards might have on international trading patterns.

At the present time, three EconWelfare reports have been published which are based on an analysis of the data collected since the commencement of the project. The first report is entitled *Technical report on grouping methods for animal welfare standards and initiatives* and outlines the main animal welfare initiatives (regulatory and non-regulatory) that are used in the EU for organic and non-organic agriculture. The report concluded that regulatory initiatives, such as legislation and private standards, are more successful

in improving animal welfare than non-regulatory methods, for example education campaigns.

The second published report is entitled *Overview of animal welfare standards and initiatives in selected EU and third countries*. This report aimed to examine, in depth, the regulatory framework governing animal welfare in Europe and in the non-EU third countries and determine the type and extent of European and international private standards that are relevant to animal welfare. Differences in animal welfare standards applying to organic and non-organic farming were also emphasised.

The Ministry of Agriculture and Forestry (MAF) was requested to be involved in this part of the project and completed a survey providing detailed information about animal welfare legislation and current animal welfare practices and initiatives in New Zealand. This information was compared against animal welfare standards in the EU, as well as another six “third country” standards: Argentina, Australia, Brazil, Canada, China and the United States of America. The results of the comparison are shown below:

Switzerland was categorised as having an animal welfare status clearly above those in the EU (Group A).

New Zealand and Argentina were

categorised as having an animal welfare status comparable to that in the EU (Group B).

Australia, Canada and Brazil were categorised as having an animal welfare status slightly below that in the EU (Group C).

China and the USA were categorised as having an animal welfare status clearly below that in the EU (Group D).

The third published report is entitled *Strengths and weaknesses for the animal of upgraded welfare standards* and outlines the conclusions of discussions from a meeting of experts in farm animal health and welfare. The meeting was held to scrutinise results obtained in the second EconWelfare report, and, through discussion, determine the changes in animal husbandry that would have the most impact in increasing levels of welfare for farm animals. Expert opinion was gained on the potential strengths and weaknesses of the suggested ‘upgraded’ standards and the benefits that the animal would gain from bringing these new standards into force.

The three published EconWelfare reports can be accessed at: www.econwelfare.eu/publications/Default.aspx

Nicki Cross
Technical Adviser, Animal Welfare Standards
Ministry of Agriculture and Forestry
nicki.cross@maf.govt.nz



RABIES CONTROL IN BALI

a model for success

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Joanna Tuckwell, Senior Policy Adviser within the Animal Welfare Standards Directorate of the Ministry of Agriculture and Forestry (MAF), has been seconded to the World Society for the Protection of Animals (WSPA) for the first half of 2011 as project manager for the humane rabies control programme being led by the Balinese Government and supported by a range of international partners, including WSPA.

WSPA is the world's largest alliance of animal welfare organisations, currently representing more than 1000 member societies in over 150

countries. WSPA brings about change at both grassroots and governmental levels to benefit animals and has consultative status at the Council of Europe and the United Nations.

More than 120 people have died since rabies was first confirmed in Bali, in late 2008. The island's dog population has been identified as the primary reservoir of the disease.

The humane rabies control programme involves mass vaccination of Bali's dog population, as an alternative to inhumane (and ineffective) methods of disease control such as culling healthy dogs. Humane euthanasia is used for suspect rabid dogs, unvaccinated dogs bitten by rabid dogs and dogs with incurable or infectious diseases.

Mass vaccination of the animal reservoir species is internationally recognised as the

most effective way to control and eliminate rabies. Without a reservoir for the virus, this will also result in eradication of the disease from other species, including cats, monkeys and humans. In this way, rabies control by mass vaccination is an example of where animal welfare and human health objectives are perfectly aligned.

Based on scientific data and expert opinion, WSPA predicts that at least 70 percent of the island's dogs (around 210 000 dogs) need to be vaccinated to provide immunity of the population of dogs for a sufficient period, by one, or possibly two, further rounds of vaccination, before there will be an end to dog and human deaths from rabies in Bali. Border controls, monitoring and surveillance, and emergency outbreak response also need to be maintained. World Organisation for Animal Health (OIE) guidelines require two years of

negative surveillance, before Bali can officially be declared to be rabies-free again.

WSPA and local animal welfare organisations (Yayasan Bali Animal Welfare (BAWA), Yudisthira and Indonesian Animal Welfare (InAW)) are working with the Balinese and central Indonesian governments to implement the programme. WSPA is funding the first round of island-wide dog vaccinations, with the support of the Australian Government covering the costs of the vaccine itself. BAWA is carrying out the operational work, employing at least 320 Balinese people in the project teams.

The project involves trained, pre-vaccinated teams moving from village to village across the island, catching, vaccinating and marking dogs. Survey teams then travel through the villages, confirming that at least 70 percent of the dog population in each area has been vaccinated. Additional support is provided by a team of international experts working with local experts for data collection, analysis and monitoring the impact of the programme.

Initiatives to educate the Balinese people about rabies, including prevention

measures and post-bite procedures, are also underway.

So far, more than 152 000 dogs have been vaccinated against rabies. After the first round of mass vaccinations is completed in March 2011, the Government will assume full responsibility for funding and coordinating the programme but WSPA and local animal welfare organisations are keen to remain supportive and involved in the implementation.

Rabies has an average incubation period of between three weeks and three months in dogs and humans. This means that human rabies cases reported today reflect rabies control efforts three to four months ago. However, there are signs that the number of dog rabies cases is decreasing. Taking incubation periods into account, WSPA predicts that a further reduction in human rabies cases will be seen in the next two to three months.

The project has the support of international organisations, such as the World Health Organisation (WHO) and the United Nation's Food and Agriculture Organization (FAO), and follows successful models presented by other countries around the world. It is also consistent with work being done by the

OIE, including the implementation of the OIE's Regional Animal Welfare Strategy for its Far East, Asia and Oceania region (which includes both Indonesia and New Zealand).

WSPA hopes to promote the success of this programme in Bali across Indonesia and South East Asia as an example of the principles of humane rabies control, showing that the mass vaccination of dogs is possible and effective without the need for culling healthy animals.

Joanna Tuckwell

**Project Manager, Bali Rabies Control Project
World Society for the Protection of Animals
joannatuckwell@wspa-international.org**



Vaccinating and collaring a dog caught in a net

First International Conference on ANIMAL WELFARE EDUCATION

Under its motto “Everyone is responsible”, the First International Conference on Animal Welfare Education took place early October in Brussels. Organised by the European Commission and the Belgian Presidency of the European Union (EU), it brought together 400 academics, officials, teachers, veterinarians and Non Governmental Organisation (NGO) representatives.

The aim of the Conference was to widen access to information about animal welfare, and to increase awareness of the important role that education can play in improving responsible involvement.

The political importance now placed both upon animal welfare and education was also highlighted. Many innovative projects showed how, for instance, the use of open source teaching methods and social media can improve animal welfare knowledge

and responsibility. These projects underlined that education is a key element in securing and improving animal welfare in the EU.

As an immediate reaction after the conference, the Commission began looking into possible options on how education of animal welfare could be improved. Education is central to future EU policies for improving understanding of animal welfare legislation, and for boosting the level of its acceptance and enforcement. It should, consequently, be incorporated at the heart of the future EU animal welfare strategy that will be adopted by the end of 2011.

Oana Barbulete
Animal Welfare Unit, Directorate-General
Health and Consumers,
European Commission
Oana.Barbulete@ec.europa.eu

Involving children

As part of the First International Conference on Animal Welfare Education, the European Commission invited children to submit drawings inspired by the motto “How to Make Animals Happy”.

More than 1500 children from all over the European Union (EU) participated and 10 drawings were selected. The Commission invited the winners and their parents to take part in the Conference, at which Prince Laurent of Belgium awarded them their prizes.

The winners and further information on the conference can be found on the conference website: www.animalwelfare-education.eu

2011 upcoming events

June	Australian and New Zealand Council for the Care of Animals in Research and Teaching , 26-28 June – New Zealand Theme: Science with feeling
	15th Australasian Vertebrate Pest Control , 20-22 June – Sydney, Australia, www.avpc.net.au
	UFAW Conference , 28-29 June – Portsmouth, UK www.ufaw.org.uk/UFAWSYMPIUM2011.php
June–July	New Zealand Society of Animal Production , 29 June – 1 July – Invercargill, New Zealand www.nzsap.org.nz/con11/index.html
	HSA Recent Advances in the Welfare of Livestock at Slaughter Centenary Conference , 30 June – 1 July – Portsmouth, UK www.hsa.org.uk/symposium%202011.html
	ACVSc Science Week , 30 June – 2 July – Brisbane, Australia, http://acvsc.org.au/info/home/
August	ISAE Annual Conference , 31 July – 4 August – Indianapolis, USA, www.applied-ethology.org/isaemeetings.htm
	8th World Congress on Alternatives and Animal Use in the Life Sciences , 21–25 August 2011 – Montreal, Canada www.wc8.ccac.ca
	5th Welfare of Animals at the Farm and Group Level Conference , 8–11 August 2011 – Guelph, Canada www.uoguelph.ca/ccsaw/waf/
September	8th European Vertebrate Pest Management Conference , 26–30 September – Berlin, German, www.evpmc.org/
	International Conference on Veterinary and Animal Ethics (ICVAE) , 12–13 September – London, UK www.icvae.com/ICVAE/Welcome.html

CONNECTING THE FLOCKS:

How America is introducing members of the public to farmers



The name of the game in American food production these days is *trust*. People are less concerned with science and facts than they are about shared values, familiarity and relationships.

An early effort to recapture this trust was the “Farmers Feed Us” campaign. This was devised by industry advocacy group *The Center for Food Integrity*, whose annual nationwide consumer survey showed that food safety and shared values are top of mind issues for the average customer as they purchase their meat, milk and eggs.

This message is now spreading into a new type of advertising. One that is less focused on dancing animals and glossy brands and more on connecting real consumers to real, local farmers – even in the case of national brands and fast-food products that contain hundreds of different ingredients. This is most easily seen in an array of recent prime-time television advertisements that represent a costly investment in trying to tap into

values and lifestyles the American public has a deep reverence for even in these cynical times.

The old California Dairy “Happy Cows” campaign has been replaced by “Family Farms”, a series of heartfelt testimonies by real farmers and a documentary-style focus on showing the real families that live on the farms. One farmer, Tony Martin, speaks not about milk as a product, but about her life as a farmer: “I want my kids to be raised the way I was raised.” The series of advertisements show real, named people on real, named farms. They express ideas about continuity, commitment, family, hard work and the efforts farmers make to keep their family farms profitable. There is an authenticity to the advertisements that is unmistakable. Viewers are being shown real farmers, describing their life in their own words – and these are people who are easy to like. These are people who consumers want to believe in and trust, and by extension the food they make seems safer and more wholesome.

Domino’s Pizza, long reviled as the cheap alternative for people not too worried about taste, has improved its recipe and taken another approach to the “meet your farmer” idea. Focus groups were recruited and participants encouraged to voice their suspicions about Domino’s ingredients. Then, just as the judgemental words had escaped their lips, the walls were pulled back to reveal they were actually on one of the farms that produced these ingredients. These urban consumers are a direct proxy

for the viewer, shown radically changing their opinion of Domino’s by seeing the real people and places that produce the milk and tomatoes, the people that hand-assemble the final product.

Most urban Americans are at least four generations away from a rural or farming heritage. Their understanding of farming is poor and their suspicions heightened by food-borne illness outbreaks, recall and animal abuse exposés. But the reverence for manual labour, rural communities and family traditions remains, just waiting to be tapped into – something these companies are striving to do. This is an effort that I think will be successful for the very reason that people enjoy their food, they want to trust it and enjoy it, but they need to feel that trust is not misplaced.

As New Zealand transitions from a country run by farmers to a country run by lawyers, and Fred Dagg becomes an increasingly distant memory, we may be facing a similar situation to America sooner than we think. The trust that local and international consumers place in clean, green, Kiwi products needs to be based on facts and reality, but *communicated* in emotions and values. Currently, New Zealand advertisements for everything from bacon to airlines tend to focus effectively on hitting the viewer’s funny bone, but some time in the not so distant future they may need to learn how to aim for the heart.

Emily Patterson-Kane
Animal Welfare Scientist
American Veterinary Medical Association
ekane@avma.org



Across our desks

A selection of interesting items from newsletters, journals and websites which have crossed our desks.

NC3Rs Research Published

Research on advances in the Three Rs, supported by the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) is now being published in mainstream science journals – abstracts of articles published so far are available at www.nc3rs.org.uk/news.asp?id=919

Gold standard publication checklist to improve the quality of animal studies, to fully integrate the Three Rs, and to make systematic reviews more feasible

This article provides a checklist that the authors consider should be used by researchers and demanded by journals so that future systematic reviews and meta-analyses of animal studies are possible and to enable work to be replicated and ultimately reduce the number of animals used and improve animal welfare and the quality of scientific papers.

Hooijmans CR, Leenaars M and Ritskes-Hoitinga M. *ATLA* 38 2010, 167-182

Lighting for Broiler Chickens

Broiler chickens (meat chickens) overseas are often raised in conditions where they are exposed continuously to 24 hours of light each day with the aim of increasing the amount of time that they spend feeding and hence the amount that they grow. Potential concerns have been raised however that keeping chickens in constant light may cause abnormal behaviour and increase stress and fear in young birds. The use of 16 hours of light and 8 hours of darkness was concluded to be better for the welfare of the chicks than continuous light, and caused no reduction in productivity.

Bayram, A. and Ozkan, S. (2010). *Applied Poultry Research* 19, 263-273

Lighting Intensity for Broiler Chickens

Broiler chickens are commonly reared under artificial light, although as yet it is unclear what the optimal light intensity for these birds might be. This study found that there were no differences in production

at different intensities of light ranging from 1 lux to 40 lux but did find that chickens raised in low light had heavier wings, increased levels of foodpad lesions and larger eyes suggesting that very low light levels may cause decreased levels of activity and negative welfare outcomes for the birds.

Deep, A. et al. (2010). *Poultry Science* 89 (11), 2326-2333

Humane Killing of Turkeys

Turkeys often have to be euthanized on-farm as a result of disease or injury so it is important to determine the most humane way in which they can be killed. This study showed that all birds continued to show signs of sensibility after manual and mechanical cervical dislocation, whereas the non-penetrating captive bolt device (called a Zephyr) and blunt trauma consistently induced immediate insensibility.

Erasmus, M. et al. (2010). *Poultry Science* 89, 1345-1354

A Cost-benefit Approach to Horse Welfare

Most modern horses in Australia are kept for entertainment purposes and are used in activities such as recreational riding, racing or showing. There are no restrictions on experience, age, or training for recreational horse ownership and so the potential for horses to be subjected to poor standards of welfare as a result of neglect or ignorance is high. The authors of a recent paper suggest a cost-benefit approach as one way to enable an objective assessment of the relative impacts of different activities to be performed. Those activities that are assessed as having a high impact on a horses' welfare can be identified, enabling steps to be taken to replace the high impact activities with those that may have a less detrimental effect.

Jones, B. and McGreevy, P. (2010). *Journal of Veterinary Behavior* 5, 196-202

Pain in Fish

Fish possess a nervous system that has large similarities to that of other vertebrates. This review article discusses the ongoing debate as to whether fish feel pain and presents evidence showing that fish display avoidance behaviours, a loss of appetite and will rub the affected part of the body on substrate in response to pain, suggesting that they perceive such stimuli as unpleasant. This review presents and discusses the available information on both sides of this fiercely debated topic.

Weber, E. (2010). *Veterinary Clinics of North America: Exotic Animal Practice* 14 (1), 21-32

Mirrors for Rabbit Welfare

Rabbits are commonly housed in laboratories for experimental purposes. It is often necessary to house rabbits singularly which, as they are naturally social animals, can cause them to experience reduced welfare and they often develop stereotypic behaviour such as excessive grooming. This study found that adding mirrors to the cages of rabbits reduced the amount of excessive grooming behaviour in female (but not male) rabbits.

Edgar, J. and Seaman, S. (2010). *Animal Welfare* 19, 461-471

Effects of Ammonia on Long-distance Transport of Steers

Steers may be exposed to high levels of ammonia for long periods of time during long distance sea transport. This study used simulated conditions of a 12 day journey by sea to assess the effects of ammonia on the steers. Ammonia was found to increase coughing and secretions from the nose and eyes of the steers and examination of the lungs of the experimental animals showed that the concentration of certain types of white blood cells increased in response to high levels of ammonia, indicating inflammation of the lung tissue.

Phillips, C. (2010). *Journal of Animal Science* 88 (11), 3579-3589

Enrichment and Piglet Feed Intake

Following weaning, piglets are often reluctant to eat solid food which can have negative effects on their growth rate and health and welfare. This study showed that placing piglets in enriched pens around the time of weaning in which the sow was able to move and display maternal behaviour, increased the growth rate of the piglets and reduced the incidence of diarrhoea following weaning and thus was beneficial for the piglets welfare.

Oostindjer, M. et al. (2010). *Journal of Animal Science* 88 (11), 3554-3562

Crib-biting in Horses

Crib-biting is a stereotypic behaviour sometimes shown by domestic horses, especially those kept stabled for long time periods, which involves them biting on a fixed object and swallowing air. This behaviour can lead to poor condition and weight loss. This review suggest that many of the available interventions prevent the occurrence of crib biting, but do not address the underlying motivation for the performance of this behaviour and they

argue that some of these measures may actually further reduce the horses' welfare.

Wickens, C. and Heleski, C. (2010). *Applied Animal Behaviour Science* 128, 1-9

Some recent Publications by New Zealand Researchers

Corner, R.A. et al. (2010). The effects of pasture availability for twin- and triplet-bearing ewes in mid and late pregnancy on ewe and lamb behaviour 12 to 24 h after birth. *Animal* 4, 108-115

Diesch, T.J. et al. (2010). Developmental changes in the electroencephalogram and responses to a noxious stimulus in anaesthetized tammar wallaby joeys (*Macropus eugunii eugunii*). *Laboratory Animals* 44, 79-87

Flint, E.L. et al. (2010). Characteristics of adult dog owners in New Zealand. *New Zealand Veterinary Journal* 58 (2), 69-73

Kenyon, P.R. et al. (2010). Effect of offering concentrate supplement in late pregnancy, under conditions of unrestricted herbage, on the performance of multiple bearing

ewes and their lambs to weaning. *Animal Production Science* 50, 485-492

McCracken, L. et al. (2010). Effect of age at castration on behavioural response to subsequent tail docking in lambs. *Veterinary Anaesthesia and Analgesia* 37 (4), 375-381

Scobie, D.R. and O'Connell, D. (2010). Breech bareness reduces flystrike in New Zealand crossbred sheep. *Animal Production Science* 50 (5-6), 599-602

Stafford, K.J. (2010). Painful husbandry procedures in livestock and poultry. In: *Improving Animal Welfare – A Practical Approach* (Ed. Temple Grandin). CABI, Wallingford, England, pp 88-114

Sutherland, M.A. et al. (2010). A multidisciplinary approach to assess the welfare of weaned pigs during transport at three space allowances. *Journal of Applied Animal Welfare Science* 13 (3), 237-249

Waran, N. et al. (2010). Recognition of pain and use of analgesia in horses by veterinarians in New Zealand. *New Zealand Veterinary Journal* 58 (6), 274-280

Your feedback

We look forward to hearing your views on *Welfare Pulse* and welcome your comment on what you would like to see more of, less of, or something new that we have yet to cover. Please send your feedback to us by emailing animalwelfare@maf.govt.nz

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