



The aim of the animal welfare science update is to keep you informed of developments in animal welfare science relating to the work of the RSPCA. The update provides summaries of the most relevant scientific papers and reports received by the RSPCA Australia office in the past quarter. Email [science@rspca.org.au](mailto:science@rspca.org.au) to subscribe.



## MEAT. SUPPLY AND DEMAND

Humane farming in a modern world



**World Farm Animal Day Symposium**

Friday 4 October 2013

RSPCA Animal Care Campus - Wacol, Brisbane QLD

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The symposium will examine humane farming and what this means to consumers, animal welfare advocates and farmers. The keynote speakers, Dr Tania Signal and Dr Nik Taylor, have a long history of research into the relationship between animals and humans and will discuss the factors that influence people's attitudes to animals and the consumption choices they make.

There are also speakers representing the feedlot industry, the kangaroo meat industry, the meat industry employees union, Coles and the RSPCA Approved Farming Scheme, along with an egg and beef producer and a researcher into consumer attitudes to animal farming. Finally there is an animal law expert who will examine Australia's food labelling laws and how they do (don't) inform us.

More information on this exciting event can be found at [www.faranimalsymposium.rspcaqld.org.au](http://www.faranimalsymposium.rspcaqld.org.au)

## COMPANION ANIMALS

### The effectiveness of the Anxiety Wrap in treating thunderstorm phobia in dogs

Dogs suffering from canine thunderstorm phobia can display panting, pacing, owner seeking behaviour, vocalisation, inappropriate elimination, hiding and exhibit escape attempts, indicative of distress. This study investigated the effectiveness of the 'Anxiety Wrap', a product which applies pressure to a dog's torso whilst still allowing unencumbered movement. 32 dogs were recruited to take part in the study which involved comparing owner-reported Thunderstorm Anxiety Scores before and after use. Owners were also asked to indicate if they interacted with their dog during storms by patting and soothing the dog, or if they ignored the dog. The authors stated that there are efficacious pharmacological treatments for canine thunderstorm phobia but that some owners may not want to rely on using medication.

Based on owner reports, the study found that, by the fifth use of the Anxiety Wrap, the dog's anxiety score was almost 50% lower than the score obtained prior to the fitting of the wrap. 89% of owners reported that in their opinion, the Anxiety Wrap was effective to some degree in treating thunderstorm phobia. It was also found that there was no difference in the anxiety scores



of those dogs whose owners soothed and interacted with the dogs during storms, from those dogs whose owners ignored them, suggesting that ignoring a dog during a thunderstorm may not decrease anxiety. A double-blind and placebo-controlled study should be conducted to adequately assess the therapeutic value of the Anxiety Wrap. The authors cautioned that the results may be a reflection of a powerful placebo effect and questioned whether the product may cause an overall decrease in movement, which may be interpreted as reduced stress but may not actually be reflective of stress reduction.

Cottam, N., Dodman, N.H. & Ha, J.C. (2013) The effectiveness of the Anxiety Wrap in the treatment of canine thunderstorm phobia: An open-label trial, *Journal of Veterinary Behavior*, 8(3): 154-161.

## Brain damage in a German shepherd dog following training with a choke chain

A one year old German shepherd dog was presented at a veterinary clinic in Germany showing a loss of muscle coordination and circling behaviour to the left. The dog was also panting and anxious and was experiencing an irregular heart rate and facial motor paralysis. It was discovered that, four hours earlier, the dog had been disciplined using a technique that involved suspending the dog a few feet above the ground by its collar called 'hanging'. It has been widely recognised that 'hanging' or 'helicoptering', a form of punishment, should be avoided as it causes fear and brings about an escalation of defensive aggression and increasing intraocular pressure. Furthermore, choke chains can also cause serious damage to the larynx, oesophagus, thyroid and trachea.

Brain tissue has a high oxygen demand and irreversible damage can be sustained to the brain within 20 seconds of oxygen restriction. The dog presented in this study was found to have sustained ischemic brain damage as a result of strangulation and the clinical features were so severe the dog was euthanased. Use of this punishment technique can have severe deleterious effects in dogs, and even restricting oxygen flow to the dog for short time periods can cause irreparable damage which can be fatal. The use of 'hanging' or 'helicoptering' should not be used.

Grohmann, K., Dickomeit, M.J., Schmidt, M.J. *et al.* (2013) Severe brain damage after punitive training technique with a choke chain collar in a German shepherd dog, *Journal of Veterinary Behavior*, 8(3): 180–184.

## FARM ANIMALS

### Preference of beef cattle for feedlot or pasture

Intensive feedlot finishing is perceived to affect welfare because cattle cannot perform normal behaviours evident in pasture environments. Expressing normal behaviour is recognised as one of the Five Freedoms. Previous studies have been performed that have examined the preference of dairy cattle for pasture over indoor housing, and have found that these cattle exhibited a preference for pasture. This study aimed to examine the preference of beef cattle for pasture with different amounts of feed on offer, or a feedlot, and hypothesised that, as the feed on offer declined, that cattle would spend more time in the feedlot.

It was found that cattle showed a strong preference for pasture over the feedlot and in fact, spent 75% of their time at pasture, and only 25% of their time in the feedlot. Cattle preferred the pasture environment at night, with 90% of cattle choosing to be at pasture. Cattle had a preference to lie down at pasture. While at pasture at night, cattle spent 80% of their time lying down. This is a similar result to studies performed previously. The study found that cattle showed a

preference for pasture which was not influenced by pasture feed on offer, as the preference for pasture remained even as the amount of feed in the pasture lessened. Cattle spent 25% of their time in the feedlot where they consumed sufficient amounts of the feedlot ration to meet their daily nutritional requirements. The authors suggest that future research to assess cattle motivation and tradeoffs between resources in a feedlot and pasture environment would provide information on the relative importance of resources for cattle. This would provide a better understanding of how cattle perceive the feedlot environment which may enable improved welfare of cattle in feedlots.



Lee, C., Fisher, A.D., Colditz, I.G. *et al.* (2013) Preference of beef cattle for feedlot or pasture environments, *Applied Animal Behaviour Science*, 145(3–4): 53–59.



## FARM ANIMALS

### Opioid analgesia in laying hens with bone fractures

Bone fractures are commonly sustained in laying hens in a range of housing systems. Fractures usually heal within 35 days, but callus formation at the site of the fracture may mean that birds experience long term pain following healing.

This study aimed to examine if this was the case using two groups of laying hens, 35 that had sustained keel fractures, and 12 with no fractures. The hens were firstly trained to associate the colour and position of an environment with the effects of an injection of an opioid analgesic drug and trained to associate a different environment with an injection of saline. Hens were then allowed to make choices between the two environments using a T-maze. It was found that birds that had healed keel fractures chose the environment where the opioid injection had been administered over the environment where they had experienced a saline injection. Birds that had no fractures showed no preference for either environment. This result indicates that the opioid drug was chosen by the hens with keel fractures for its analgesic effect and provides further evidence that healed keel fractures are a source of chronic pain. This study has implications for the welfare of birds sustaining keel fractures in housing systems and indicates that measures should be taken to eliminate the problem to ensure good welfare for laying hens.



Nasr, M.A.F., Browne, W.J., Caplen, G. *et al.* (in press) Positive affective state induced by opioid analgesia in laying hens with bone fractures, *Applied Animal Behaviour Science*.

### Measuring chronic social tension in pigs

Pigs held under commercial production conditions can be placed under prolonged stress as a result of the close presence of unfamiliar pigs when they are first mixed into a new group. Pigs can exhibit aggression as a result of mixing and the chronic social stress that they can experience can have negative impacts on growth performance, health and welfare. Individual pigs, and groups of individuals, show differing levels of aggression and competition for resources and the aggressive behaviour can have deleterious results such as the pigs sustaining skin lesions.

The development of methods that would reduce this social tension and understand the variation between pigs, and groups of pigs, in their experiences when mixing would benefit pig welfare. This study aimed to examine spacing behaviour and other behavioural and performance traits which have been shown to be sensitive to chronic stress. Pigs were housed in groups of 20 or 80 individuals, using two different feeder space allowances for each of the two group sizes, in an environment set up to simulate commercial conditions. It was found that the mean growth rate was poorer in

large groups of pigs and the number of skin lesions was higher in pens with a small feeding space, suggesting an increase in social tension in these conditions. It was also found that pigs which spaced large distances from other group members had a high average daily weight gain, and large distances between pigs were also associated with more activity, fewer feeding bouts and total feeding duration. The distance between pigs also differed on different days in terms of how it affected the presence of skin lesions on pigs post-mixing. The results gained from this study are complex. Although spacing behaviour may have potential to be used in quantifying the experience of social stress, more information about how the individual pigs acted to obtain the space that they occupy at any one time would provide more information about how best to measure and interpret spacing in pigs to obtain more information about chronic stress.

Turner, S.P., Nath, M. & Horgan, G.W. (2013) Measuring chronic social tension in groups of growing pigs using inter-individual distances, *Applied Animal Behaviour Science*, **146**(1–4): 26–36.

## Welfare of bobby veal calves at slaughter premises in New Zealand

Surplus calves from the dairy industry, known as bobby calves, are usually sent for slaughter at 4–7 days of age and the reported mortality rate during this process in New Zealand has been reported as 0.64%. Recently, national standards were introduced, covering the transportation, care and slaughter of bobby calves, and additional initiatives aimed at reducing mortality levels also instigated by the Ministry for Primary Industries (MPI) including maximum time-frames relating to feeding, transportation and time in lairage for these calves. This study aimed to examine the reasons for bobby calves succumbing to pre-slaughter mortality, the reasons for post-slaughter wastage, and aimed to identify indicators of non-compliance with national standards for the welfare of bobby calves at a single slaughter premises in Southland, New Zealand.

All calves transported to the slaughter premises in the July 2011 bobby veal-processing season were examined by experienced stockmen upon arrival at the premises. Calves that were considered dull and lethargic or obviously diseased or in pain were euthanased upon arrival and ante-mortem examinations were performed by MPI veterinarians. It was found that the overall mortality risk to calves was 0.7%, and 64% of these calves had died of digestive tract problems (41%) or problems relating to omphalitis (infection

of the umbilical cord) (23%). Omphalitis (54%) and septicaemia (37%) were the most common reasons for post-mortem wastage. Further examination of current feeding and husbandry practices is recommended to determine compliance with current welfare standards, together with the initiation of training programmes for suppliers, to reduce the occurrence of mortality in bobby calves sent for slaughter.



Thomas, G.W. & Jordaan, P. (2013) Pre-slaughter mortality and post-slaughter wastage in bobby veal calves at a slaughter premise in New Zealand, *New Zealand Veterinary Journal*, 61 (3): 127–132.

## The effect of morphine on intraperitoneally vaccinated Atlantic salmon

Atlantic salmon are an important aquaculture fish species, but little is known about this species' response to pain, in particular, the response to visceral pain (dull, widespread and vague pain). Vaccination is an important part of modern aquaculture, and vaccinations are currently given to all salmon put to sea in Norway, but the intraperitoneal vaccination has the potential to cause pain and can also have deleterious physical and physiological side effects on the fish, including peritonitis.

This study examined the occurrence of peritonitis in singly housed Atlantic salmon. Four groups of fish were examined, those injected with a) vaccine and saline, b) vaccine and morphine, c) saline only, d) saline and morphine. It was found that fish which had received the vaccination and saline showed a decrease in swimming behaviour during feeding two days following vaccination, and also were slower to eat than the group of fish injected with saline only at 6.5 and 2 days following vaccination. Histopathological examination showed no evidence of peritonitis in the fish, but this may have been due to the short time period between injection and sampling. The morphine did not seem to exert an analgesic effect, but it did seem to have an anxiolytic effect as fish given the morphine were observed to swim out in the open more rather than remaining in their hiding place. The lack of analgesic effect in these fish could indicate that morphine is not an effective analgesic for fish and further research should be performed to find a substance that can reduce pain during potentially painful husbandry procedures in Atlantic salmon.

Nordgreen, J., Bjørg, M.H., Janczak, M. *et al.* (2013) The effect of morphine on changes in behaviour and physiology in intraperitoneally vaccinated Atlantic salmon (*Salmo salar*), *Applied Animal Behaviour Science*, 145(3–4): 129–137.

## Responses of chickens to low atmospheric pressure stunning

At the present time, techniques used in the commercial stunning and killing of chickens involve shackling conscious birds, which causes them significant stress and, in addition, a number of birds are not stunned adequately, meaning that they are fully conscious when killed. Low atmospheric pressure stunning is a new method of stunning whereby oxygen is gradually removed from a chamber containing the animals, causing loss of consciousness and death. This technique has the potential to improve welfare for animals being stunned. It is important however, to ensure that the animals do not experience pain and distress in the period before the animal loses consciousness to ensure welfare standards are upheld.

This study examined the effects of low atmospheric pressure stunning on broiler chickens by examining both their brain responses, which were recorded by using small portable mini-loggers worn by each bird, and their physiological responses during stunning. It was

found that low atmospheric pressure stunning caused the birds to lose consciousness in approximately 40 seconds. This time period until loss of consciousness is longer than some other stunning methods, but the only sign of potential distress in the birds, which was wing flapping, was seen after they had lost consciousness, and so would not be experienced by the conscious bird. There were no physiological responses indicative of pain or distress prior to the birds losing consciousness. This method of stunning could have implications for use in the commercial situation by inducing unconsciousness without distressing the birds, eliminating the need for shackling and ensuring that all birds are adequately stunned prior to killing.

McKeegan, D.E.F., Sandercock, D.A. & Gerritzen, M.A. (2013) Physiological responses to low atmospheric pressure stunning and the implications for welfare, *Poultry Science*, 92(4): 858–868.

## The effect of grazing on dairy cow welfare

Allowing dairy cattle access to the outdoors to graze is seen as 'natural' by many people in society and an appropriate method to keep cattle. However, intensive systems where cattle don't have access to the outdoors for many months of the year are common in many countries and are raising interest in the general public as to their acceptability. Previous studies have looked at the effect of grazing on different aspects of cow welfare, but have not addressed the question of whether grazing is a benefit for cow welfare 'as a whole'. This study examines cattle welfare using a technique based on the Welfare Quality® assessment scheme, which is regarded as the most advanced and up to date assessment scheme for assessing animal welfare using a multidimensional approach.

Seventeen measures of welfare were evaluated in 41 herds of cattle during summer, where the cattle had access to the outdoors, and during winter when they were kept in barn housing systems. It was found that the welfare index of cattle that had access to summer grazing was better than that of cattle kept in the winter barn systems. Cattle in the summer grazing systems showed improved condition of their hide, in addition to a number of other behavioural and physical attributes indicative of improved welfare. An increased number of grazing hours had a beneficial effect on the cattle and improved their welfare. Increasing the amount of time that cattle have access to grazing in summer can also help them recover from welfare deficits, which it is likely they have sustained during their time kept in the barns. This research suggests that providing dairy cattle with outdoor access to grazing can improve their welfare in a number of aspects.

Burrow, E., Rousing, T., Thomsen, P.T. *et al.* (2013) Effect of grazing on the cow welfare of dairy herds evaluated by a multidimensional welfare index, *Animal*, 7(5): 834–842.



## Use of quantitative risk assessment to assess the welfare of sheep subjected to mulesing

Mulesing is a practice used in Australia to prevent the occurrence of flystrike in Merino sheep by altering wool and breech conformation. It is performed by removing two strips of skin from the hindquarters of Merino lambs to remove the wool covered wrinkled skin. Although mulesing has welfare benefits in preventing the potentially fatal occurrence of flystrike, the practice has also attracted concerns as a result of the pain and distress that is caused to the lamb by the procedure itself. This paper attempts to examine, using a quantitative risk based assessment, the welfare costs and benefits to the animal over its lifetime as a result of mulesing. Comparisons were made of mulesing with and without pain relief, mulesing using a skin folding clip, and no mulesing (with and without genetic selection for breech-strike resistance).

The welfare challenge for the Merino sheep was found to be more severe for those that were mulesed in their first year of life, as a result of the short and long term pain caused by mulesing. However, over five years, the highest severity of welfare challenge was found to be for those sheep that had not been mulesed, and the lowest was those sheep that had been mulesed using the plastic skin folding clip. The research shows that mulesing does provide a welfare benefit for the sheep under Australian conditions, but to ensure the welfare of the sheep, less invasive procedures need to be developed to prevent flystrike. Genetic selection of animals with reduced wrinkle on the hindquarters, together with the use of modern insecticidal flystrike prevention treatments would produce the best sustainable animal welfare benefits.

Fisher, A.D., Giraud, A., Martin, P.A.J. *et al.* (2013) The use of quantitative risk assessment to assess lifetime welfare outcomes for breech strike and mulesing management options in Merino sheep, *Animal Welfare*, 22(2): 267–275.

## On farm inspection of animal welfare: Inspect, motivate or both?

One of the primary aspects that animal welfare inspectors face when performing on farm investigations is how best to interact with the farmers to obtain the desired result — an increase in animal welfare. One of the dilemmas they face is the conflict in their duties in ensuring compliance on farm and performing a regulatory role, versus the option of entering into dialogue with farmers, providing education and guidance and performing a proactive role in encouraging and helping the farmer to meet animal welfare standards. This conflict can lead to different individual strategies being employed among different animal welfare inspectors working for the same organisation. The different methods that each individual inspector uses 'adds up' to how the enforcement agency as a whole behaves and how it is viewed by others. The techniques that each individual inspector uses affects, therefore, both the organisation at which they are employed, the farmers being inspected and ultimately, the farm animals.

This study examined a number of different interviews that were held on farm between investigators and the farmers whose properties were being inspected, and examines the views of the farmers and the investigators

in separate follow up interviews after the inspection procedure. The paper takes a detailed look at how the different inspectors view their own roles and tasks and examines and discusses how the different strategies employed by the inspectors could affect the short and long-term outcome of animal welfare inspections. It highlights the range of views of different animal investigators about their options of entering into dialogue with farmers, and the difficulties that they have encountered whilst doing so. This dilemma faced by investigators each time they step on a farm has important implications for animal welfare as it is important that all inspectors are seen to be acting in an agreed manner to ensure that the regulatory system functions fairly and efficiently. To ensure that this is the case, it is suggested that the conflict that the inspectors face by working in a proactive and educational role versus their role as an enforcement officer is discussed in an open manner.

Anneberg, I., Vaarst, M. & Sandøe, P. (2013) To inspect, to motivate – or to do both? A dilemma for on-farm inspection of animal welfare, *Animal Welfare*, 22(2): 185–194.



## Food sensory characteristics in feeding domestic ruminants

Ruminants living at pasture have a large range of food items that they can choose from. The feed items available will differ in quantity and availability depending on the stage of growth that the plants are at as well as environmental factors, such as humidity. Ruminants kept in housing systems will be presented with a food diversity that is much lower, commonly only one or two types of forage or concentrates. In a situation where ruminants are presented with feed options, they select feed depending on pre-ingestive information (food sensory information perceived by the animals prior to swallowing the food), and post-ingestive information (digestive and metabolic consequences felt by the ruminant as a result of eating the feed). The ruminant combines both pre- and post-ingestive information, the final information also being influenced by the genetic background of the animal, its environment and social context, to provide an overall palatability of any particular food.

This paper discusses the sensory characteristics that allow animals to distinguish between different food items and suggests that some of the sensory

characteristics of feed are able to influence a ruminant's willingness to eat feed, independently of any post-ingestive consequences. Some sensory characteristics have, therefore, already been determined in a ruminant's mind as positive or negative, depending on the individual ruminant's learning experiences and genetic make-up. These sensory characteristics could be used in husbandry systems as an indicator that allows ruminants to anticipate the post-ingestive consequences of eating a particular food, and allow farmers to use this information to improve palatability of new or poor quality feeds, at least in the short term. It is suggested that this knowledge of how to influence food palatability could be used to enrich a ruminant's environment when housed, and improve its welfare. Sensory cues could also be created by animal managers to help animals anticipate the post-ingestive consequences of some toxic plants so that they avoid them in the field.

Favreau-Peigne, A., Baumont, R. & Ginane, C. (2013) Food sensory characteristics: their unconsidered roles in the feeding behaviour of domestic ruminants, *Animal*, 7(5): 806–813.

## Attitudes towards factory farming

People differ in the depth of knowledge that they have about intensive farming practices and the attitudes that they have towards the use of animals for food. Disapproval of animal's suffering during factory farming, however, is frowned upon by society as a whole. Some people, whilst remaining meat eaters, may be 'committed' to preventing animal suffering as much as possible while using animals for food, by purchasing animal welfare friendly options. Other people may not have taken this stand, through lack of information or a wish not to find out more about the industries that create our animal based food. This study examined whether people who have already taken a stand in their own minds to reduce the pain and suffering of intensively farmed animals, have a heightened reactivity to an anti-factory farming message than those who have not taken this stand.

This study examined the views of 62 non-vegetarian people before and after reading a booklet that was designed to provide information about the pain and suffering that animals are subjected to in intensive farming industries. The study compared those participants who had a 'committed' view on reducing animal suffering whilst using animals for food, to those who had no committed view. The research showed that those who had already committed, be it personally or publically, to their own disapproval of intensive farming techniques, had a heightened reaction to the booklet. Committed participants tended to be more open to eating less meat, were more concerned with the issue and were more accepting of the information contained in the booklet suggesting that more should be done to prevent animal abuse in factory farming. The authors suggest that a key ingredient to raising awareness about animal welfare issues is to build upon pre-existing concerns about animal welfare issues. The goal to prevent suffering of animals in farming is to firstly ensure that society has a common value that animals should not suffer for our food.

Prunty, J. & Apple, K.J. (2013) Painfully aware: The effects of dissonance on attitudes towards factory farming, *Anthozoös*, 26 (2): 265–278.



## ANIMALS USED FOR SPORT, ENTERTAINMENT, RECREATION AND WORK

### The effect of positive reinforcement to aid learning in horses

Positive reinforcement techniques have been used in a number of species of animal to increase motivation, efficiency and quality of training, but the use of these techniques on the horse have, until now, been limited to training being performed from the ground. Ridden training in general has been restricted to negative reinforcement. In this study apparatus was developed that would allow the rider to administer positive reinforcement while riding to see if this influenced the horse's ability to learn. The apparatus was named the TriggerTreater™ and, using this equipment, the rider was able to deliver a food reward to the horse whilst riding.

Eighteen horses were used in this study, and were separated into two groups and riders were not aware if they were in the test or control group. Two markers were set, and riders instructed to walk forward on their horse and begin to sound a whistle at the first marker. At the second marker, the horse was instructed to halt by the rider by use of the reins. The test group of horses (but not control) also received a treat from the TriggerTreater™ equipment. It was found that the horses that received positive reinforcement in the form of the food reward delivered by the TriggerTreater™



were more likely to learn to halt upon the sound of the whistle alone than the control group that received negative reinforcement alone. These results suggest that the addition of positive reinforcement techniques to training schedules of ridden horses can improve their learning and welfare.

Lloyd, S.J. & Lloyd, S. (2013) The effect of positive reinforcement administered by a TriggerTreater™ on the learning ability of the ridden horse, *Journal of Veterinary Behavior*, 8(2): e14–e15.

### The effect of shortened reins on rein tension, stress and behaviour of the horse

Horses may be ridden with severely shortened reins by inexperienced riders making mistaken attempts to achieve collection of the horse, or to stretch the horse's muscles. It has been suggested that shortened reins to this degree may have a detrimental impact on the welfare of the horse and so this study aimed to examine this suggestion by investigating the effects that shortening the reins can have on the behaviour of the horse.

Seventeen dressage horses that were not used to being ridden with shortened reins were ridden twice in a dressage pattern with the reins at the normal length and twice with reins being shortened an additional 10 cm from normal. It was found that, in response to shortening the reins, horses shortened the steps that they took. In addition, the tension on the rein was also found to increase, adding approximately 1kg to the weight in the horse's mouth. Horses being ridden with shortened reins were seen to chew the bit less, open their mouth more often and flatten their ears backwards when compared to being ridden with reins of a normal length. Horses also carried their heads with their nose behind the vertical more often when being ridden with shortened reins. Horses therefore compensate for shortened reins by altering their step length and posture and putting more pressure on the bit, but the increased incidence of mouth opening and flattened ears during use of shortened reins indicate that horses find this riding technique aversive.

Ludewig, A.K., Gauly, M. & König Von Borstel, U. (2013) Effect of shortened reins on rein tension, stress and discomfort behaviour in dressage horses, *Journal of Veterinary Behavior*, 8(2): e15–e16.

## Opinions and beliefs of Australian, British and Irish jockeys

The use of the whip in horse racing has been a subject of increasing interest in recent years. Whip use is regulated within the racing industry. In a bid to ensure that the whip is used for ‘safety, correction and encouragement only’, industry have described ways in which the whip may be used and/or should not be used according to their rules. However, there are concerns that these regulations do not adequately protect horses and that they are not effectively enforced. This study sought to examine the thoughts and opinions of jockeys on the use of the whip in racing, and to examine their thoughts on the capacity of horses, humans and dogs to feel pain.

A detailed questionnaire was distributed to jockeys in Australia, Ireland and the United Kingdom. Only 26 responses were received however despite the response rate being small, the survey did yield some interesting results. No respondents disagreed that the use of the whip is essential to get the best finishing position, but more than half of respondents acknowledged that if a horse fails to respond to the whip, it is usually because it is fatigued. One third of respondents stated that the use of the whip can make some horses move sideways dangerously during a race and only half of respondents agreed that the rules were adequate to protect tired horses when whipped. Over one third of respondents believed that horses feel pain, but believed that dogs and humans feel pain more. Further research should explore the evidence on which these judgements are based.

McGreevy, P.D., Caspar, G.L. & Evans, D.L. (2013) A pilot investigation into the opinions and beliefs of Australian, British, and Irish jockeys, *Journal of Veterinary Behavior*, 8(2): 100–105.

## Ingestive and sleep behaviours of horses bedded on straw and shavings

Horses are often stabled overnight for practical reasons, but stabling and associated practices are contradictory to the domestic horses’ instinctive and innate behaviours. This aspect of horse husbandry therefore holds challenges in terms of maintaining their welfare. Intense stabling practices have been associated with increased restlessness, aggression and the development of abnormal behaviour in horses. Practices to enrich the horse’s stabling environment have been developed in recent years, and the use of bedding as an enrichment material has been reported to have both positive and negative effects. This study examines the use of straw and shavings as bedding materials for stabled horses and examines how it affects both their ingestive and sleep behaviours during the night.

It was found that, horses bedded on both straw and shavings both spent around a third of their time overnight performing ingestive behaviours, although those bedded on straw spent more of their time ingesting their bedding. No differences were found between the amount of time that the horses were standing or lying during the night. The results obtained here found that horses bedded on shavings spent more time during the night performing behaviours that were not related to sleep or ingestion, suggesting that the use of straw as a bedding material allows horses to perform more functional behaviour in stables overnight.



Greening, L., Shenton, V., Wilcockson, K. *et al.* (2013). Investigating duration of nocturnal ingestive and sleep behaviours of horses bedded on straw versus shavings, *Journal of Veterinary Behavior*, 8(2): 82–86.

## The effect of balancing aids on horse skin temperature

Neck straps and saddle handles are used by novice riders to help them balance on a horse when riding but the effect that these aids have on the horse has not yet been objectively examined. This study investigated the temperature of the horse's skin where the balancing aids came into contact with the horse using Infrared Thermal Imaging (ITI), as temperature deviations in the skin (both increases and decreases) can indicate tissue damage. The study assessed four ponies ridden by an experienced rider. The temperature for specific anatomic locations (for neck strap — withers, both shoulders and neck base; for saddle handles - girth, cantle, under the saddle and under both saddle ring points) were then determined following exercise with or without balancing aids.

Skin temperature varied significantly between measurement positions, with significantly higher temperatures observed at the neck base than at the shoulders and withers when neck straps were used to assist balance. This study demonstrated that the use of balancing aids can have a physical effect on the horse with irregular temperatures observed where the balancing aids contact the horse. The authors stated that those responsible for the welfare of the ridden horse should be aware of this physical effect and suggested that dependency on balancing aids could be avoided by training novice riders balance techniques prior to riding.

Allin, K., Stacey, E. & Randle, H. (2013) Investigation of the effect of balancing aids on the skin temperature of the ridden horse, *Journal of Veterinary Behavior*, 8(2): e1–2.

## HUMANE KILLING

### Examination of dolphin killing methods used in the Japanese 'Drive Hunt'

Thousands of cetaceans (small whales, dolphins and porpoises) are killed each year in Japan. The Japanese government allows the herding of a large number of cetaceans, including dolphins, into harbours or shallow coves where some animals are taken for marine parks or 'swim with dolphin' programmes. The remaining dolphins are killed for their meat for human consumption or killed as a means of pest control in the mistaken perception that dolphins compete with local fisheries. In 2000, a new technique was developed that was stated to be a more humane technique for killing the dolphins than the previously used spears and knives which had been targeted at various parts of the dolphin's body. The new method involves a long rod being inserted into the animal's midline after capture, the position of insertion being approximately 10cm behind the blowhole, which is intended to sever the spinal cord. A wooden wedge is then driven into the hole to stop the flow of blood. A previous study had supported this method as humane. This study re-examined the available video evidence and performed a veterinary and behavioural analysis to assess if this is the case.

Analysis of the video evidence showed a sharp contrast to the conclusions of the previous study and concluded that this technique is not humane. The paper discusses the significant welfare concerns that exist with the drive hunt and killing methods that are presently used. Concerns are raised regarding the catching and dragging of the dolphins in the hunt, their proximity to other dolphins when killed and the use of the new technique, which does not kill instantaneously and so will cause the dolphin significant pain and distress. The current method induces paraplegia (paralysis of the body) and death through trauma and gradual blood loss. This killing method does not conform to the recognised requirement for "immediate insensibility" and would not be tolerated or permitted in any regulated slaughterhouse process in the developed world. Dolphins are sentient, highly intelligent and social animals and this paper discusses our ethical obligations to ensure they are treated humanely.

Butterworth, A., Brakes, P., Vail, C.S. *et al.* (2013) A veterinary and behavioural analysis of dolphin killing methods currently used in the 'drive hunt' in Taiji, Japan, *Journal of Applied Animal Welfare Science*, 16(2): 184–204.



## ARTICLES OF INTEREST

### COMPANION ANIMALS

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