



RSPCA AUSTRALIA

Animal welfare science update

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This is the second Animal welfare science update provided by the RSPCA Australia office. The aim of the update is to keep you informed of developments in animal welfare science that relate to the work of the RSPCA. The update provides summaries of recently published scientific papers that have been received by the RSPCA Australia office in the past few months.

Companion animals

1 Play and the dog-human relationship

It is often asserted that dogs should not be allowed to win competitive games against their owners, or they will attempt to become dominant over them. The authors of this paper sought to determine whether dogs behaved differently towards humans whom they had beaten in tug-of-war games, and humans to whom they had lost. Their findings indicated that dominance relationships were not affected by the outcome of the game. The authors suggest that play behaviour reflects existing dominance relationships and does not determine them. They also argue that this may only be the case when dogs recognise a game as play, and that problems may arise if a dog cannot distinguish play from other behaviour. This study involved 14 adult Golden Retrievers who did not have any previously identified behavioural problems.

Reference: Rooney NJ, and Bradshaw JWS (2002) An experimental study of the effects of play upon the dog-human relationship. *Applied Animal Behaviour Science* 75: 161-176.

2 Behavioural problems in dogs from suburban Melbourne

The authors of this study tried to determine what factors influence problem behaviours in domestic dogs from suburban Melbourne. The most commonly reported problem behaviours were overexcitement (63 %) and jumping up on people (56 %). However, a majority of people (81 %) whose neighbours had dogs reported that their neighbour's dogs barked excessively. Dogs living in families with children were less likely to display several problem behaviours including overexcitement and destructive chewing. The more time that was spent with the dog, the more often the dog was walked, and the larger the yard it was kept in, the less likely a dog was to show problem behaviours. The dogs of first-time owners were more likely to be excitable and nervous, and to have problem behaviours. There was no difference in the behaviour of male dogs compared with female dogs, or desexed compared with intact dogs.

Reference: Kobelt AJ, Hemsforth PH, Barnett JL, and Coleman GJ (2002) A survey of dog ownership in suburban Melbourne-conditions and behavioural problems. Unpublished paper.

Farm animals

3 Head height and stocking density requirements for sheep in transit

This is a short communication which reports on two UK studies, one into the head height requirements of sheep during transport and another to develop a simple, practical method for accurately estimating stocking density when loading.

In the first study, 36 sheep were videoed during road transport for five 1-hour and five 4-hour journeys. The recordings were analysed for sheep head position every 5 minutes. For 80% of the time the sheep had their heads up. The results indicated that the height above the withers required for sheep in this position was

30.5% of the floor to wither height. This translates into a recommended deck height of 95.5 cm for sheep with average weight of 65 kg. The results of this study indicated that the vast majority of 4-deck vehicles are not suitable for transporting adult sheep as they do not provide sufficient head room, however most triple, double and single decked vehicles would be adequate.

The second study used 'folding', ie moving sheep together in a pen on a marked grid, to provide estimates of stocking density. The method was accurate to within 5% for most stocking densities. The authors concluded that although this method might have some application during loading it was not practical for assessing stocking density for inspection purposes since access to pens on a fully laden vehicle is difficult.

Reference: Jones TA, Look A, Guise HJ & Lomas MJ (2002) Head height requirements, and assessing stocking density, for sheep in transit. *Veterinary Record* 150(2):49-50.

4 Reducing pain associated with animal husbandry procedures

This paper reviews our current knowledge about how distress can be measured in farm animals, and goes on to compare the relative painfulness of several commonly used animal husbandry techniques. For example, ring tail-docking of lambs is argued to be just as painful the use of a docking iron, while both are considerably less painful to the lamb than surgical docking. The authors mainly concentrate on methods for the docking and castration of lambs, and de-horning of cattle.

The authors make six main recommendations for reducing acute pain:

1. That procedures should be carried out when the animal is at an age when distress responses are least.
2. That the method that causes the least distress should be used.
3. That anaesthetics should be used when possible.
4. That analgesics should be used when possible.
5. That cautery should be used where appropriate.
6. That multiple approaches should be combined (eg. ring castration in combination with clamping).

Reference: Mellor D, and Stafford K (1999) Assessing and minimising the distress caused by painful husbandry procedures in ruminants. *In Practice* 21: 436-446.

5 How can farm animal welfare be improved?

This paper from New Zealand looks at current definitions of animal welfare, and how to practically implement them. They re-define the "five freedoms" as "five domains of potential welfare compromise" shifting the emphasis from a need to provide the maximum in terms of welfare, to a need to minimise welfare problems. The authors argue that because there is wide variation in what individuals perceive to be good or bad standards of welfare, these standards must be centrally regulated, not be left to individual preferences to determine. They propose four definitions of animal welfare, a "minimal standard" representing the threshold of cruelty, an "acceptable standard" representing standards that would be broadly considered as acceptable by the general public, a "maximal standard" representing the best standard of animal welfare that can be achieved within the constraints of farming and domestication, and "natural welfare" the situation that would arise if animals were allowed to follow their natural instincts in all aspects of their life. The authors argue that the concepts of minimal welfare and acceptable welfare are both relevant to economic analyses. They also argue that gradually increasing animal welfare standards is a more effective way of improving animal welfare than trying to immediately impose a rigid high standard of welfare.

Reference: Mellor D, and Stafford, K (2001) Integrating practical, regulatory and ethical strategies for enhancing farm animal welfare. *Australian Veterinary Journal* 79: 762-768.

6 Factors influencing feather pecking and cannibalism in free-ranging hens

In this paper from Denmark the authors show that some breeds of hen are more prone to feather pecking and cannibalism than others. Unfortunately there are some problems with their experimental design so it is impossible to compare all of the breeds they tested with one another, also the tables are misleading because

they incorrectly show data from the second experiment as including breeds that did not form part of that experiment.

Reference: Kjaer JB, and Sorensen P (2001) Feather pecking and cannibalism in free-range laying hens as affected by genotype, dietary level of methionine + cystine, light intensity during rearing and age at first access to the range area. *Applied Animal Behaviour Science* **76**: 21-39.

7 The effect of mothering on chicken behaviour.

Many aspects of an animal's behaviour may be influenced by its early experiences. In this paper the authors look at the differences between chickens raised from one day old by a broody hen, and those raised without an adult present. Four groups of 10 birds were raised for 53 days by broody hens. A further four groups of 10 were raised alone. The hens raised by broody pullets differed in several ways: they were less fearful of objects that they had not seen before, they were less likely to feather-peck, they were more likely to have a clear linear pecking order, and they spent more time in the vicinity of other hens (both the hens that they were raised with and unfamiliar hens). The authors extend their findings to suggest that introducing older birds that do not feather peck to batches of young chicks may improve the well-being of those chicks by reducing their tendency to feather peck when older.

Reference: Perre Y, Wauters A, Richard-Yris M (2002) Influence of mothering on emotional and social reactivity of domestic pullets. *Applied Animal Behaviour Science* **75**: 133-146.

8 Do hens teach each other to feather peck?

The authors of this paper show that hens do not learn feather-pecking behaviour from each other. However, they do show that hens kept in cages feather-peck more than those kept in pens. The authors kept groups of hens with a high tendency towards feather-pecking, hens with a low tendency towards feather-pecking, or a mixture of both types of hens in either pens or cages. The hens' feather-pecking behaviour and the condition of their plumage was measured during the "rearing phase" (12-17 weeks of age) and the "laying phase" (30-32 weeks of age). There was no evidence that hens in mixed groups learnt severe feather-pecking behaviour. But, hens kept in cages showed significantly more severe feather pecking than those kept in pens during both the rearing and laying periods. The implication for the commercial hens are obvious, to reduce the incidence of feather pecking hens should be kept in pens not cages.

Reference: McAdie TM, and Keeling LJ (2002) The social transmission of feather pecking in laying hens: effects of environment and age. *Applied Animal Behaviour Science* **75**: 147-159.

Animals used for Sport and Entertainment

9 Racehorse injuries in the UK

The authors of this study recorded every injury incurred by horses as a result of the 222,993 horse racing events held in the British mainland from 1996-1998.

The study looks at the types of injuries that occurred and their relation to the horses' age, the type of race being run, and the surface of the race-track. The risk of injuries increased significantly with a horse's age, while softer racing surfaces reduced the risk of injury and death. The highest number of injuries occurred during chases (2.5 % of starting horses), closely followed by hurdle races (2.0 % of starting horses). In comparison only 0.4 % of horses starting in flat races were injured.

Reference: Williams RB, Harkins LS, Hammond CJ, and Wood JLN (2001) Racehorse injuries, clinical problems and fatalities recorded on British racecourses from flat racing and National Hunt racing during 1996, 1997 and 1998. *Equine Veterinary Journal* **33**: 478-486.

10 The effects of stabling conditions on the social behaviour of stallions.

Horses are usually stabled alone, but does this change the way they interact when in groups? This study looks at the impact of individual and group housing on the social behaviour of stallions. Seven two-year old stallions were stabled individually for nine months then released into a 2 hectare enclosure. A second group

of twelve 2-year old stallions were housed in groups of three for the same period then released into another 2 hectare enclosure. The stallions who had been stabled together in groups were more likely to associate with their stablemates when released into the field, whereas singly stabled stallions did not spend any more time with the stallions that had been stabled next to them than they did with other stallions. The singly stabled stallions were more likely to be close to (within one horse length of) other horses than the group-stabled stallions, and were more inclined to be aggressive towards other horses. They also spent more time engaged in social grooming and play.

Reference: Christensen JW, Ladewig J, Sondergaard E, and Malmkvist J (2002) Effects of individual versus group stabling on social behaviour in domestic stallions. *Applied Animal Behaviour Science* 75: 233-248.

Animal Welfare and the Environment

11 Rehabilitation and release of injured wildlife

Thousands of Australians are involved in the rehabilitation of injured or sick native animals. Unfortunately, many of these animals die or are euthanased, and there is little information available about what happens to the survivors when they are released back into the wild. This paper looks at the whole subject of wildlife rehabilitation; how many people are involved, what types of animals are involved, the pros and cons of releasing animals back into the wild, and future directions for wildlife carers. The authors recommend: (a) further studies into the fate of released animals and their impact on resident populations, (b) the development of guidelines for wildlife release, (c) continuing education for wildlife carers and (d) raising the profile of wildlife care groups, particularly within government conservation agencies.

Reference: Tribe A, and Brown PR (2000) The role of wildlife rescue groups in the care and rehabilitation of Australian fauna. *Human Dimensions of Wildlife* 5: 69-85.