

Animal Welfare Branch

Guidelines for the housing of sheep in scientific institutions

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Sheep

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In the field

- Intensely social animals
- Maintain visual links with other members of the flock while grazing.
- Eyeballs are positioned on the sides of their heads, giving a wide field of vision (about 270°)
- Good depth perception.
- Flight distance varies according to their breed and the amount of handling they have had.



Groups

- Individual sheep are almost impossible to control.
- A group of at least four sheep is required for predictable behavioural responses.
- Data collected from single-housed sheep are not representative of those from a normal social setting.
- Strong dominance hierarchies and social structures.
- Little aggression in established flocks.



Sheep in pens

- Social and behavioural requirements are disturbed
 - if there is not adequate space provided so sheep can maintain a minimum distance between each other;
 - if there is not enough feeding or resting space for all animals;
 - if regrouping is carried out frequently; or
 - if group sizes are very large.





Raising lambs

- Maternal bond important for normal social and emotional development.
- Need social stimulation.
- Can discriminate between handlers – known and unknown, also those with different reinforcement histories.
- Less disturbed by isolation from other lambs in the presence of a known handler.



Time budgets

- Graze for 9-11 hours daily in cycles, interrupted by periods of rest, rumination and idling.
- Rest periods are important for effective rumination, which can occupy up to eight hours of the day.
- Need a well-drained area for rest and rumination.
- Synchronise activities - all will want to lie down at once - enough space must be provided for this to occur.
- Synchronization of behaviour is a strong social motivation. A reduction of synchronization of lying can be regarded as a negative indicator of welfare.



Signs of fear

- Vary according to the situation and breed.
- Include immobilization, attempts to escape a situation, shivering and foot-stamping.
- Visual stimuli may provoke an 'alarm posture' - they stand immobile, staring forward, with their ears pricked.
- May become agitated - move back-and-forth, bleat persistently and behave aggressively with head-butting, rearing, stamping and kicking.



Signs of chronic stress

- May be apathetic or show low levels of activity – especially with behavioural restriction or confinement.
- Hyperactivity, agitation or aggression may be provoked by situations such as high stocking density or confinement, and some disease conditions such as external parasitism.
- Decreased feed intake with disease conditions including lameness, internal or external parasitism, isolation, restraint or high stocking density.
- Sheep which are chronically stressed may deviate from group activities.



Signs of pain

- Sheep may be in serious pain without showing any symptoms.
- Subtle changes in behaviour such as lethargy, inappetance and a change in facial expression.
- Severe pain may manifest as rapid, shallow respiration.
- On handling, they may react violently or otherwise stand rigidly so that the affected region is immobilised.
- May occasionally grind their teeth or grunt or withdraw from the group with an abnormal stance or lying position.



Bringing outdoor sheep indoors

- Consider changes being imposed by the housing regime - social groupings, diet, and physical environment including temperature, photoperiod and available space.
- On introduction, there is frequently an initial period of withdrawal after which they appear to react more to the stimuli provided by the environment.
- Without being handled, sheep will usually adapt to the new environment within two weeks, unless they react adversely to a marked change in diet.



Training

- Excellent long-term memories.
- Remember handling procedures for up to one year, both when rewarded or unrewarded.
- Rewarding sheep makes handling significantly easier.
- As the impact of the procedure increases, the long-term effectiveness of a food reward diminishes.
- When training sheep, they should be exposed initially to minor handling procedures, and higher impact procedures should be performed rarely where possible.



Feed

- Sheep have conservative tastes and are unwilling to eat new foods.
- Sheep fed a diet free of long fibre, such as finely milled, pelleted concentrates, undergo short spells of pseudoruminating.
- Fibre deprived sheep become motivated to ingest even inert fibrous material as a result of a 'fibre appetite' based on a reduced ruminal sensory input.



Stereotypies

- Frequently related to the interruption of the normal pattern of grazing and the cycle of rest, rumination and idling.
- Longer term residents are more likely to display stereotypic behaviours such as weaving, wool biting and pen-licking.
- Restricted feeding is more likely to promote the development of stereotypic behaviour in sheep compared with *ad lib* feed access.
- Provision of increased roughage in the diet can diminish the risks of oral stereotypies developing.



Wool-biting

- A redirected behaviour, partially initiated by the absence of a natural substrate for grazing and the non-satisfaction of the need for stimulation of the sheep's oral organs by eating and ruminating.
- Provision of fibre in the form of straw within metal mesh hay racks can have a beneficial effect.
- Higher feeding frequency (for example twice a day as opposed to once a day) can be associated with more wool biting behaviour.

Single housing/ met crates

- Single housing of sheep is extremely stressful for sheep if they are not within sight of a companion animal.
- There is an initial stress response when sheep are confined in metabolic crates, however they usually adapt by the fifth day, especially if they have been habituated with humans prior to their confinement.
- In general, they should not be confined in metabolic crates for longer than 7 days without exercise.

Isolation

- Evokes a greater stress response than either handling or restraint.
- Sheep do not adapt to the emotional stress, even though, behaviourally, they appear to have habituated.
- If it is necessary to isolate sheep from con-specifics, they should be given extra attention from a known handler.
- Mirrors and sounds of other sheep can also be used for isolated sheep.

Summary

- For successful housing of sheep, particular consideration should be given to the following:
 - their need for social contact and their response to isolation;
 - the effect of space allowances and group size on social dynamics;
 - their need to establish a maternal bond;
 - their need to lie down and ruminate; and
 - their behavioural responses to fear, pain and distress.
- Sheep adapt best to husbandry systems that provide consistency in routine and in group composition.



The End
