ABSTRACTS

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19.3.2

LABORATORY ANIMAL WELFARE - ENHANCEMENT BY MEANS OF EFFECTIVE CONTROL AND LEGISLATION. DE KLERK, W.A. Director: Laboratory Animal Centre, Medical University of Southern Africa (Medunsa), Box 162, Medunsa, 0204, South Africa.

Control over laboratory animal experimentation is an issue which is fraught with problems and controversy. There are those scientists who are opposed to any kind of control while some organisations strive to complete abolition of experiments on animals. Any system of control must address both these extremes and find a compromise. There is no reason why this cannot be attained because control will not only improve the quality of the experiments but also enhances laboratory animal welfare.

Two systems of control should be applied. They are control by legislation (external control) and institutional control by animal ethics committees (internal control). Both these systems should endeavour to improve research management and to address the issue of the public accountability of science.

The veterinary profession has an important role to play and it must address its legal and ethical obligations as well as possible shortcomings. The veterinary profession might find itself in conflict with other professions on the issue of laboratory animal welfare and control and these problems need attention.

19.3.3

NEUROLOGICAL EVALUATION OF THE USE OF i.v. ADRENERGIC MEDICATION FOR SEDATION AND ANESThesIA. SHORT, C.C. Dept. of Clinical Sciences, NYS College of Veterinary Medicine, Cornell Univ., Ithaca, NY 14853 USA.

Efforts to improve the availability of medications for the prevention of distress and control of pain in animals have included the discovery of i.v. adrenergic agonists, which was considered scientifically indicated to determine the extent of neurological depression as demonstrated by the changes in cerebral perfusion produced by these agents.

This study was completed on adult dogs in excellent health, of either sex, weighing 18 to 28 kg. Neurologic function was determined by computerised spectral analysis of the electroencephalogram and an index of cerebral blood flow determined by a chronically implanted flow probe. All procedures were completed during general anesthesia or sedation/anesthesia to avoid distress or pain. In addition, physiologic monitoring including blood pressure, ECGs, blood gases and pH, blood glucose, end-tidal carbon dioxide levels. The studies included the following medications: 30 and 60 mg/kg IV medetomidine; 30 and 60 mg/kg IV ketamine in conjunction with anesthetics; and 30 and 60 mg/kg IV medetomidine in conjunction with cardiovascular medications.

Medetomidine rapidly produced a recumbency at each dosage level. As recumbency became evident there was a significant reduction in the total amplitude of EEG activity and a shift from high toward slow frequency bands. In conjunction with the increase in blood pressure and drop in heart rates there was a drop in the cerebral blood flow index. This drop in cerebral blood flow was greatest when the EEG activity was lowest, however, the blood flow increased toward control at a faster rate than the EEG.

These neurologic studies are not guarantees that medetomidine is a true anesthetic agent recommended for use in animals with severe pain, however, the level of central nervous system depression as demonstrated supports the use of this a, adrenergic agonist for control of stress and pain in animals at the

19.3.4

EFFECT OF SEASON ON FEEDING BEHAVIOUR AND DIGESTIBILITY IN RABBIT

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Since in caged rabbits the behaviour is not well known, we studied the relationship between the season and the feeding behaviour. In Spring (March 16 days old NZW rabbits were placed in cages equipped with dispositions for continuous graphic recording of feeding and drinking and nine rabbits were placed into individual metabolic cages.

Feeding behaviour was observed during a two-week period in each season. Temperature was maintained at 23±0.9, 30±1.2, 17±1.40 and 9±1.86 in Spring, Summer, Autumn, and Winter, respectively.

Results show that during the summer period there was a marked decrease in the intake of solid and liquid meats in both quantity and frequency compared to the other 3 seasons (Table 1); the distribution of diurnal and nocturnal ad libitum intake was also significantly altered (nocturnal intake during the summer made up 85% of the total daily intake, compared to a below 70% one during the other seasons).

Tab.1 Effect of season on rabbit performances.

<table>
<thead>
<tr>
<th>season</th>
<th>live wt.</th>
<th>feed int.</th>
<th>water int.</th>
<th>Org. matter</th>
<th>digestibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>358 kg</td>
<td>179%</td>
<td>28%</td>
<td>324%</td>
<td>21a</td>
</tr>
<tr>
<td>Summer</td>
<td>406 kg</td>
<td>98%</td>
<td>16%</td>
<td>26%</td>
<td>15b</td>
</tr>
<tr>
<td>Autumn</td>
<td>417 kg</td>
<td>167a</td>
<td>32%</td>
<td>279b</td>
<td>24a</td>
</tr>
<tr>
<td>Winter</td>
<td>429 kg</td>
<td>140a</td>
<td>27%</td>
<td>287b</td>
<td>21a</td>
</tr>
</tbody>
</table>

note: means bearing different letter in the same column show significant differences of P<.05.

Apparent digestibility did not change according to season because the increase of digestibility observed during summer was related to the reduction of the level of feed intake: linear regression coeff. = -82 (sig. P<.01).

19.3.5


Generally, before the shering period on the ovine flock raised in the Spanish south west, an action that is done from the end of April to the end of May, the animals that pasture ("carear") in high temperatures (more than 40°C) protect themselves by looking for an environment which give them to reduce the eect shade area, or choosing a group of them to reduce the effect of the heat. One has to emphasize that the animals have a tendency to repea tedly choose certain evergreen.

The sheep form a real fence, among them exist leaders which guide the group during the pasture time. The new animals that esitate to the "leader", (where the animals take shelter from heat) place their heads near the ground and under the hinging logs of the next sheep, other times it is between two sheep, therefore searching for shade.

This hiding of the head and more particularly the initial region of the animal is closely joined to the laying of larvae from Fries Destrus ovip in the inside of their noses.

The duration of the "sente" period (map, sheltering from the heat), begins in the beginning of May until the middle of September lasts from 1 to 2 hours or 6 to 7 hours; during this time the animals are rumination.