



Influence of stocking density on behavior of feedlot lambs

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INTRODUCTION

Since the beginning of civilization, the sheep is presented as a sort of great importance, having been spread for almost all regions of the world. When considering the high cost of land, particularly in the Southeast, the confinement of sheep is a strategy capable of satisfying both the producer and the consumer, since it reduces the production cycle and make available to the market of young animals and carcasses, consequently, better quality (URANO, 2006) meeting the market requirements for lamb. The sheep and cattle are gregarious animals - that is, living in groups - and this seems to be so important that individuals are isolated from the herd become stressed. Indeed, although the group life brings a number of advantages adaptive (defense against predators, easy to find a sexual partner), It also brings increased competition for resources, especially when scarce, resulting in the presentation of aggressive interactions among animals of the same group or herd (PARANHOS DA COSTA and NASCIMENTO JR., 1986).

The aim of this study was to verify the influence of the animal density on the behavior of confined lambs.

MATERIAL AND METHODS

We used 86 crossbred Santa Inês, feedlot after weaning in the Livestock Research Center Southeast, located in São Carlos - SP, 21° 58'10"South, 47° 51'04"West and 890 meters of altitude.

All animals received the same diet during the confinement and were divided into two major groups, one being housed in 23 pens with two lambs each (double pens) with 4.8 m² of area (Figure 1), and another in four collective pens of 10 animals (collective pens) with 19.2 m² of area (Figure 2).



Figure 1. Double pen



Figure 2. Collective pen

During confinement were recorded behaviors of animals according to the methodology proposed by Martin and Bateson (1986), by instantaneous and continuous sampling, with sampling focal and sampling interval of 30 minutes in a direct fashion, continuous periods of 12 hours of 06:00 to 18:00 hours for 4 days. Behavioral variables were: posture (standing or lying), activity (eating, ruminating, leisure, drinking water and grooming) and events (nod-nodding, pushing, picking up, bellowing, mounting, defecating, urinating), as the ethogram work shown in Figure 3.

Bioclimatic data, black globe temperature, maximum and minimum temperatures and relative humidity were recorded in rearing feedlot.

Category 1	
Posture	
1.	Laying (sternal or lateral decubency)
2.	Standing (Supported on its members, stopped or displacement)
Category 2	
Activities	
a.	Eating (taking in food with their mouths in the trough)
b.	Ruminating (chewing movements without eating, standing or lying down)
c.	Leisure (no apparent activity, standing or lying down)
d.	Drinking Water (Drinking water from the fountain)
e.	Grooming (scratching or licking himself or another animal)
Events	
f.	Nid-nodding (hitting another with his head)
g.	Pushing (away from another animal with the body)
h.	Picking up (being attacked by another animal)
i.	Bellowing (mooing)
j.	Mounting (climbing on the back or rump of another animal)
k.	Defecating (eliminating feces)
l.	Urinating (in urination)

Figure 3. Ethogram of work used during the confinement

For evaluation of behavioral variables, the percentages of frequencies of occurrence of different categorical variables related to the ethogram, suffered scale transformation of the data to "root arcsine percentage for each of the observed behavioral variable", proceeding to the analysis of variance and procedure for multiple comparisons with the processed. For presentation of results the data were returned to the original scale, as recommended by Banzatto and Kronka (2006).

In case of significant results ($p < 0.05$) for the sources of variation evaluated in the aforementioned analysis of variance, was adopted as a procedure for multiple comparisons the t test of Student.

RESULTS AND DISCUSSION

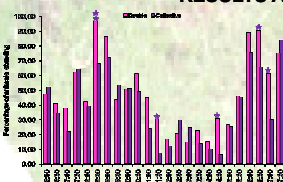


Chart 1 - Percentage of animals in double or collective pens in the posture "standing".

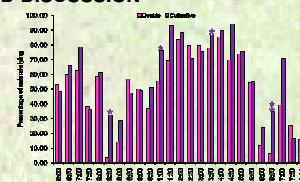


Chart 2 - Percentage of animals in double or collective pens in the posture "lying".

Most animals remained lying down, ruminating or idling in the early morning, at the hottest times of day and were standing in the hours after the provision of food in the feeders. Polli et al. (1995), observed that feedlot cattle and buffaloes ruminate more time lying down, as confirmed by this study. Daily rumination time, the literature shows that 63 to 83% occur in the supine position (HAFEZ and BOUISSOU, 1975).

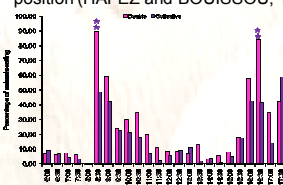


Chart 3 - Percentage of animals in double or collective pens in the activity "eating".

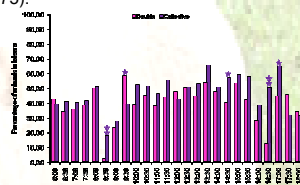


Chart 4 Percentage of animals in double or collective pens in the activity "leisure"

These results corroborate those of Van, Thi Mui and Ledin (2007), working with different sizes of groups of lambs found that the incidence of aggressive behavior was higher with increasing the number of animals in stalls, thus affecting food intake with great variation in growth rate of animals. It is observed in chart 4 a higher percentage of animals in collective pens in idleness. Possibly this was due to larger space in collective pens, as the lambs of these stalls occupied most of this time in motion by the bay with exploratory activity, a fact confirmed by Price, Adams and Huxoll (2003). Similar results were found by Marques et al. (2005), who observed that in the afternoon, the percentage of cattle kept at bay in leisure conference was more than double the accommodation, however, the percentage of cattle in leisure accommodation in the pair was higher in the morning. This activity is well distributed throughout the day and, according to Young and Corbet (1972), as the environmental conditions give us more leisure behavior, there will be energy saving, which will be reversed in favor of production.

CONCLUSIONS

The results of this study showed that the number of animals per group influences the behavior of confined lambs, changing the pattern of food intake.

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