

## INTRODUCTION

Stabled horses should have an even surface to stand and lie down on to ensure some aspects of the horses' welfare. Adult stabled horses sleep 3-5 hours per day and they can only perform paradoxical sleep (REM-sleep) lying down.

### AIM

The aim was to study the horses' lying behavior on pelleted sawdust as compared to straw in loose boxes.



Loose box 10.2m<sup>2</sup>  
(3.5 x 2.9 m)

## MATERIAL AND METHODS

### Horses and design

- Eight Swedish Warmblood-geldings aged 8-14 yrs.
- Four boxes were used; two with straw and two with pelleted sawdust. Four of the horses were first observed on straw, the other four on pelleted sawdust in a cross-over design.
- Each horse was videotaped during four nights (18:00-06:00) on both bedding materials after seven days of acclimation.

### Registrations and analyses

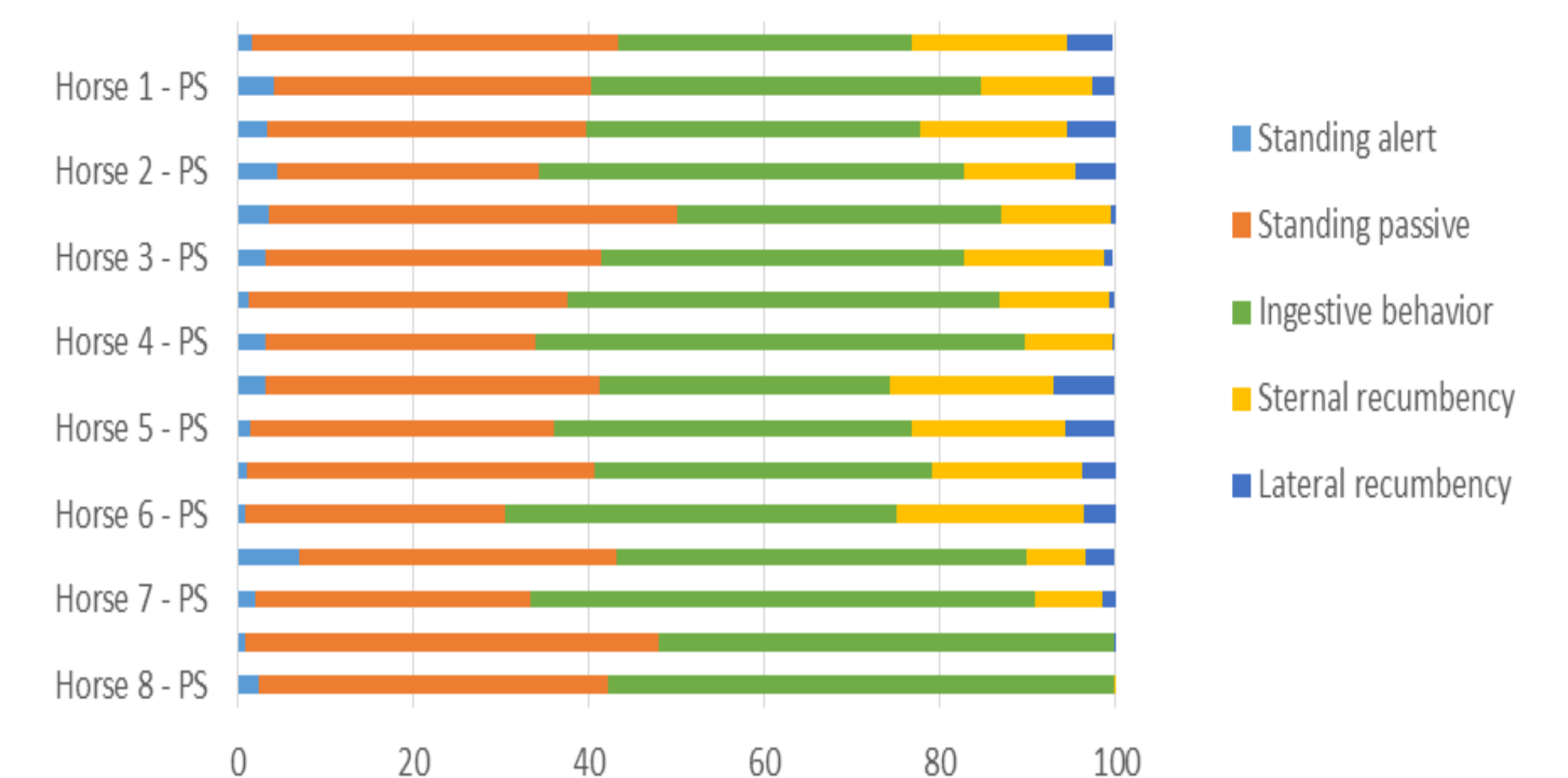
- Standing attentive, standing passive, feeding behavior, sternal recumbency and lateral recumbency were continuously registered from the tapes and expressed in % of total time.
- Lying down episodes were counted.
- Analysed in SigmaStat in a one-way RM ANOVA and where appropriate followed by a post-hoc test Holm-Sidak.

## RESULTS

- The horses laid down longer ( $p=0.047$ ) in lateral recumbency on straw than on pelleted sawdust: 3.3% ( $23.8 \pm 19.0$  minutes) versus 2.4% ( $17.1 \pm 14.9$  minutes) but no difference in total recumbency time.
- The horses also showed more feeding behavior ( $p<0.001$ ) on straw (40.2%) compared to pelleted sawdust (33.8%) and were standing passive more ( $p<0.001$ ) on pelleted sawdust (48.8%) than to straw (40.9%).
- There were no significant differences neither between number of episodes lying down nor on which side they were lying down though there were individual differences.
- During the study each horse used on an average 7 kilos straw or 2.6 kilos of pelleted sawdust on a daily basis.



Pelleted sawdust and straw



Individual results for behaviors recorded on straw (S) and pelleted sawdust (PS).

## CONCLUSIONS

The results show that the bedding material can be an important factor for the horse's lying behavior. The horses laid down in sternal recumbency 7 min. more each night on straw and thus enabled them to retrieve more REM sleep. Pelleted sawdust can be recommended to use as bedding in regard of the horses welfare since there is no data on the need of the horses REM sleep.

## FUTURE STUDIES

Further studies of labour time and economy should be performed to evaluate pelleted sawdust as a bedding material for horses.

