

# Stalled Gilt Behavior when Provided with Novel Flavors on Rope Environmental Enrichment

## A.S. Leaflet R3112

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### Summary and Implications

The objective of this study was to evaluate the use of flavored ropes as environmental enrichment for individually housed gilts. Twelve crossbred gilts were observed using a randomized crossover design so that gilts were tested with ropes soaked in two of the four treatments: water, salt water, sugar water, and apple juice. Oral/nasal contacts did not differ between rope treatments; however, gilts provided flavored rope enrichment were observed lying less than baseline. These results suggest that flavored rope enrichment does not alter oral/nasal contact, but may impact activity levels in individually penned gilts.

### Introduction

Biologically relevant environmental enrichment may provide pigs with an outlet for exploratory behavior, reduce stress, and improve pig welfare. Pigs are highly oral-nasal focused, so devices that encourage rooting, foraging, and chewing have been hypothesized as being highly valued by pigs. Novel environmental enrichment devices are used more often than familiar ones; however, it can be difficult to maintain device novelty. The objective of this study was to evaluate the use of flavored ropes as environmental enrichment for individually housed gilts. We hypothesized that gilts would interact with flavored ropes more than ropes soaked in water.

### Materials and Methods

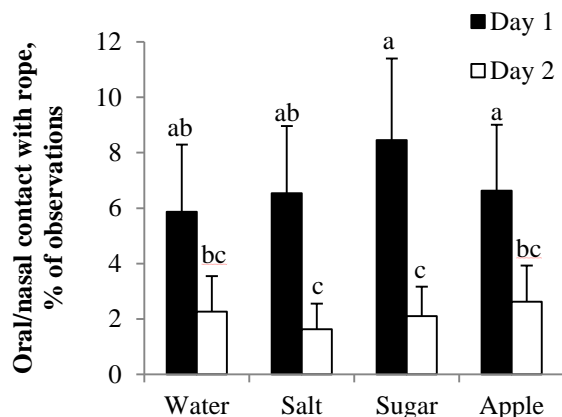
Twelve crossbred gilts ( $112 \pm 12$  kg BW) were individually penned and provided *ad libitum* feed and water. Four rope treatments were evaluated which included ropes soaked in 1) water (n=5), 2) salt water (10% w/w; n=6), 3) sugar water (10% w/w; n=6) and 4) apple juice (n=7). A randomized crossover design was utilized so that gilts were tested on two of the four treatments. Cotton rope (1.2 m) was soaked in the assigned treatment solution for 30 minutes on day 1. The rope was tied to an overhead bar at 10:00 hours on day 1 and was removed at 19:00 hours on day 2. Gilts were video recorded one day before treatments were given (day -1) and throughout the study. Video was analyzed using Observer software (The Observer XT

version 10.5, Noldus Information Technology, Wageningen, The Netherlands) with a 2-min scan sample interval between 07:00 and 19:00 hours. Oral/nasal contact with the rope, standing and lying postures were recorded. Postures collected on day -1 and 07:00 to 10:00 hours on day 1 are referred to as baseline.

**Data Analysis:** Data were analyzed using the Glimmix procedure of SAS 9.4 (SAS Inst. Inc., NC, USA). The model included the fixed effects of treatment, day, their interaction, and the random effect of treatment order. The significance level was fixed at  $P \leq 0.05$  and tendency at  $P \leq 0.10$ .

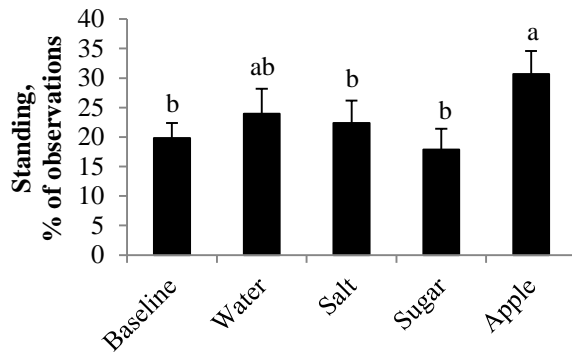
### Results and Discussion

**Oral/Nasal Contact:** Oral/nasal contacts did not differ between rope treatments ( $P = 0.87$ ). Regardless of treatment, gilts had more oral/nasal contact with the rope on day 1 than day 2 ( $P < 0.01$ ). No treatment by day interaction was observed ( $P = 0.83$ ; Fig. 1).



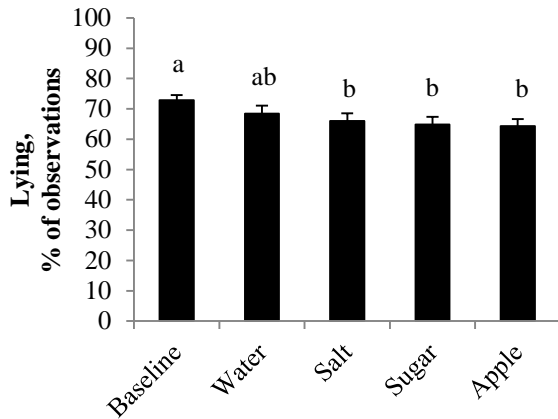
**Figure 1. Percent of observations that gilts were engaged in oral/nasal contact with the rope.**

**Standing:** A treatment difference in standing posture was observed ( $P = 0.03$ ) where the apple treatment resulted in gilts standing more than baseline, salt, and sugar treatments. No day or treatment by day interaction differences were observed ( $P \geq 0.36$ ; Fig. 2).



**Figure 2. Percent of observations that gilts were standing.**

**Lying:** A treatment difference in lying posture was observed ( $P = 0.02$ ) where the apple, salt, and sugar treatments were observed lying less than baseline. Regardless of treatment, gilts were observed lying 5% less on day 1 than day 2 ( $P = 0.01$ ). No treatment by day interaction was observed ( $P = 0.42$ ; Fig. 3).



**Figure 3. Percent of observations that gilts were lying.**

**Conclusion**

These results suggest that flavored rope enrichment does not alter oral/nasal contact, but may impact activity levels in individually penned gilts.

**Acknowledgements**

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