

INTEGRATED PRODUCTION OF TREE BIOMASS AND PIGLETS - EFFECT OF PADDOCK DESIGN ON SOW EXCRETORY BEHAVIOUR



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IMPLICATIONS

To achieve the most optimal environmental effect of implementing trees in farrowing paddocks, focus should be on location of feed trough and hut in relation to the trees



BACKGROUND AND OBJECTIVES

Pasture systems for organic pigs:

Advantages:

- Meet the animals' natural behaviour
- Comply well with consumers' expectations

Disadvantages:

- Contain a high risk of nutrient losses



BACKGROUND AND OBJECTIVES

Implementing trees:

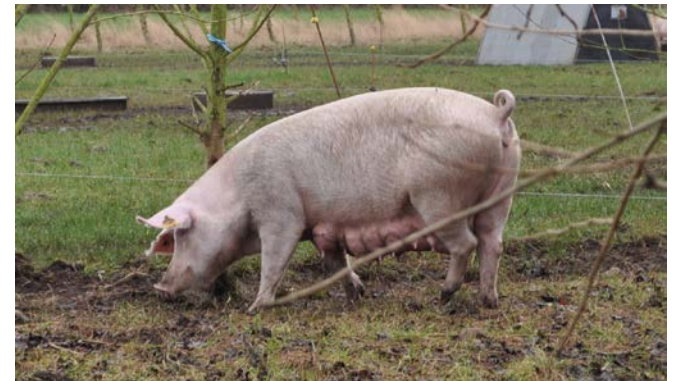
- Increase nutrient uptake
 - a deep root systems
 - nutrient uptake across a long growing period
 - robust to the pigs rooting behaviour
- Provide tree biomass



BACKGROUND AND OBJECTIVES

Implementing trees:

- Provide shade and shelter for the animals
- Enriches the environment
- avoid nose-ringing the sows??



BACKGROUND AND OBJECTIVES

The environmental effect depends on the pigs being motivated to excrete adjacent to the trees

Previous studies indicates:

- Feed and hut location affect choice of elimination area
- Morning toilet ~5 m from the nest
- Prefer to excrete near to trees or high vegetation



OBJECTIVES

To investigate the effect of spatial arrangements of poplar trees, hut and feed trough on lactating sows' excretory behaviour in a pasture-based system with integrated agroforestry



MATERIALS AND METHODS

- 24 lactating sows
- Housed in individually farrowing paddocks, with 4 rows of poplar trees
- During Spring (n=12) and Autumn (n=12)

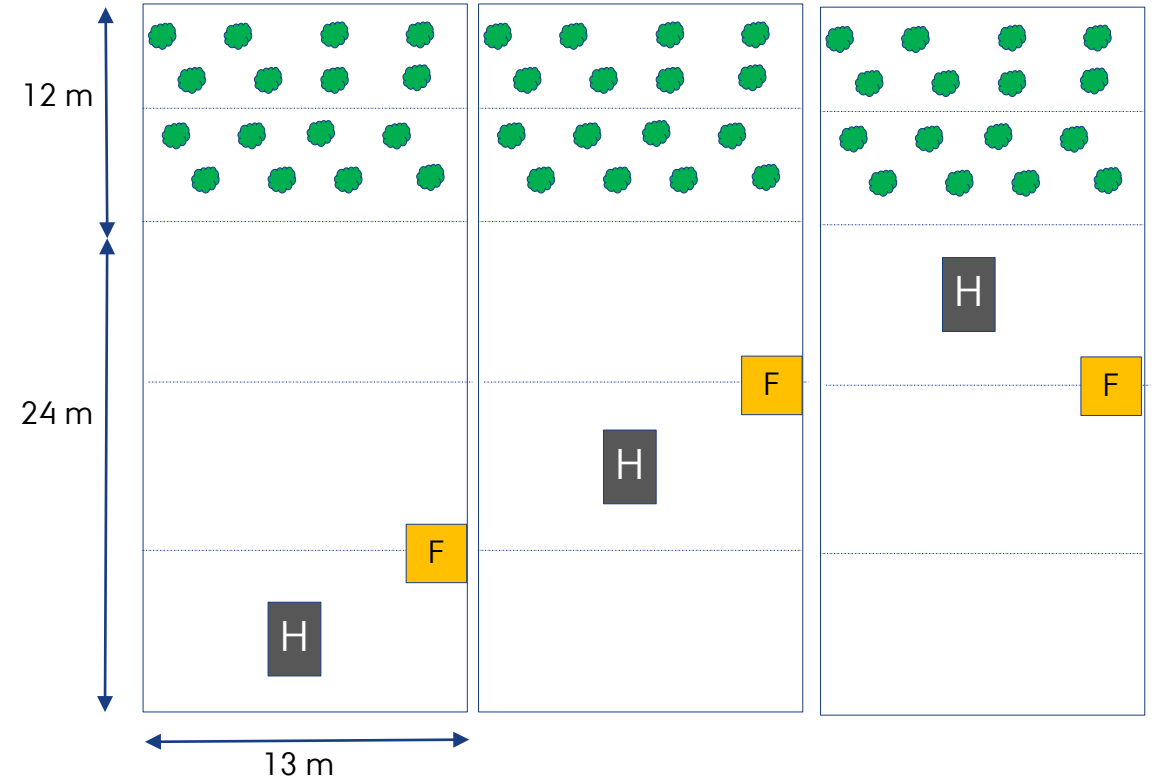


TREATMENTS

Treatments:

- 3 different hut location
 - 2 different location of feed trough
- (in all six treatments)

Examples on hut and feed locations



OBSERVATIONS

Observations period:

- Two times during the lactation period
- From sunrise to sunset

Observations in the different zones:

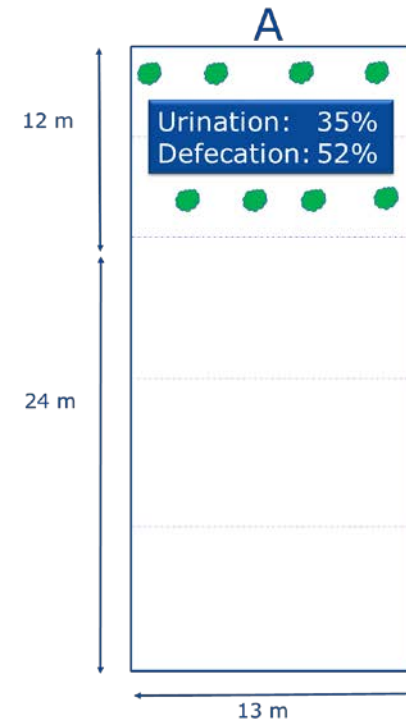
- Urination and defecation (all occurrences)
- Activities (scan sampling)



PRELIMINARY RESULTS AND DISCUSSION

Overall:

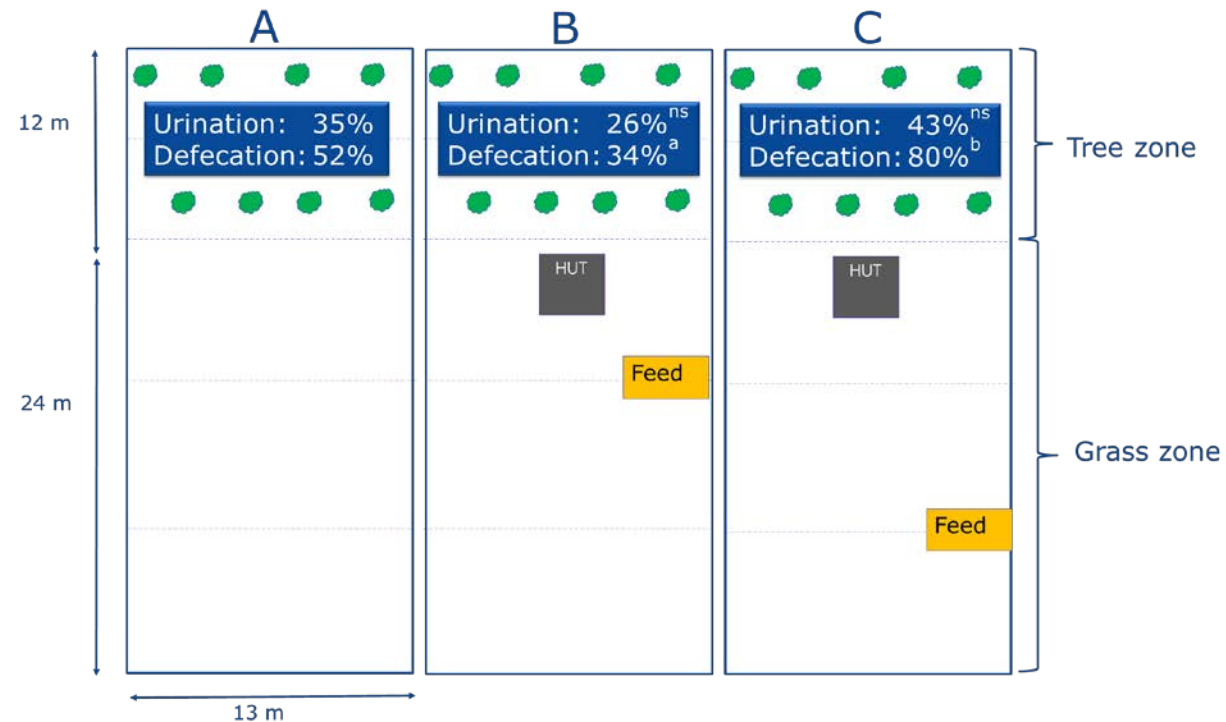
- Defecation mainly occurred in the tree zone
- Urination was randomly distributed between the tree and grass zone
- No elimination was observed:
 - around the hut, feed and water trough
 - In the wallow



PRELIMINARY RESULTS AND DISCUSSION

Effect of treatments:

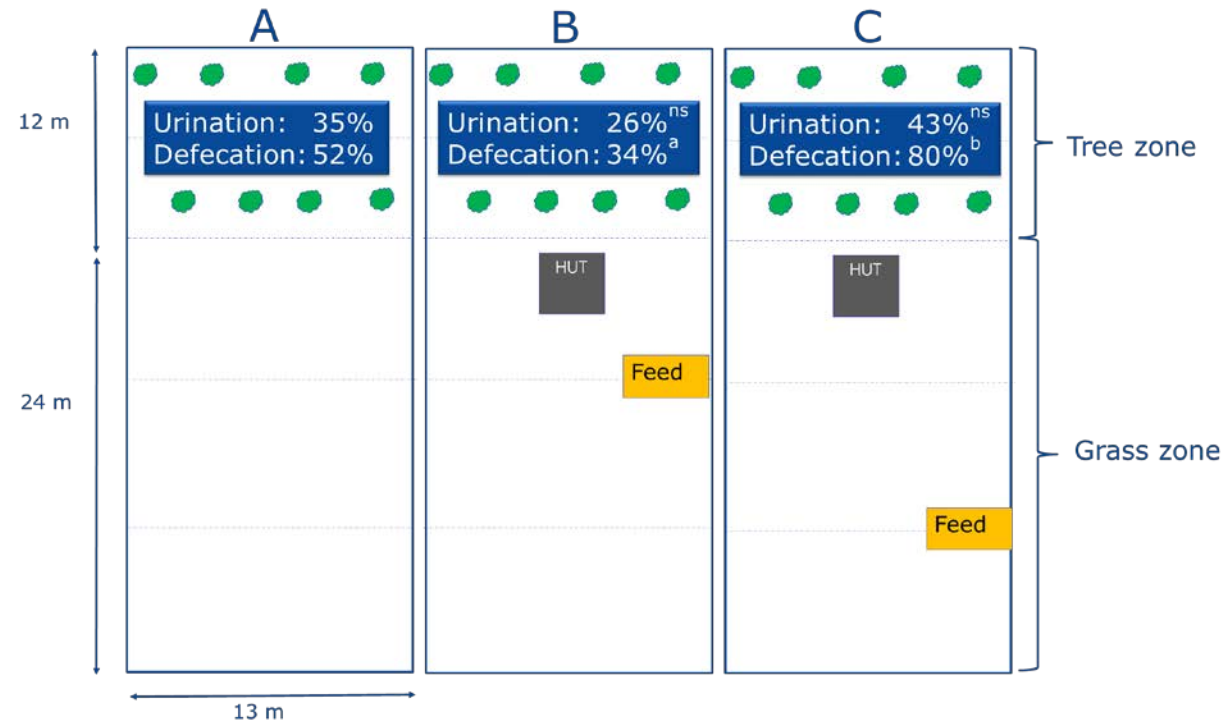
- Location of hut and feed affected the sows' choice of defecation zone ($P < 0.05$)
- No effect of hut and feed location was found on the sows' choice of urination zone ($P = 0.11$)



PRELIMINARY RESULTS AND DISCUSSION

Our results indicate:

Sows can be motivated to eliminate in the tree area if the hut is located nearby the trees and the feed trough in the opposite end. Locating both resources nearby the trees should be avoided



PRELIMINARY RESULTS AND DISCUSSION

Our results could not fully confirm the results found by Horsted et al. (2012), who reported that pigs prefer to eliminate in the tree zone. However, the elimination behaviour seems to be affected by the location of the feed and hut, which was also reported by Eriksen & Kristensen (2001) and Salomon et al. (2007)

- Urin/faeces versus elimination
- Location of the trees



PRELIMINARY RESULTS AND DISCUSSION

Our results confirm that the pigs avoid eliminating near the hut, the feed and water resources and in the wallow



NEXT STEP

- to analyse whether the distribution of urine and faeces in the paddocks is related to resting and foraging behaviour
- Looking to the different subzones in the paddock



Thank you for your attention!

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