# IMPACT OF FUCOSIDASE ON PIG GROWTH PERFORMANCE AND ENTERIC METHANE PRODUCTION

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METHENZWINE
A COLLABORATIONWITH IFFCOMPANY

FUNDINGBODY: DANMARKSINNOVATIONSFOND

AARHUS
UNIVERSITY
DEPARTMENT OF ANIMAL AND VETERINARY SCIENCES

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# BACKGROUND

Global population

Climate law

Ban of antibiotics and ZnO

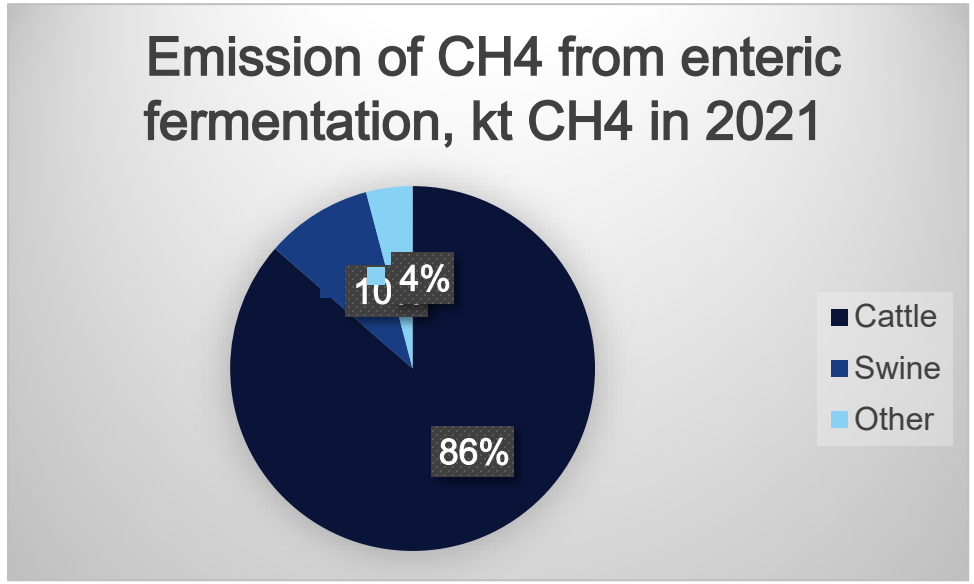
Growth performance

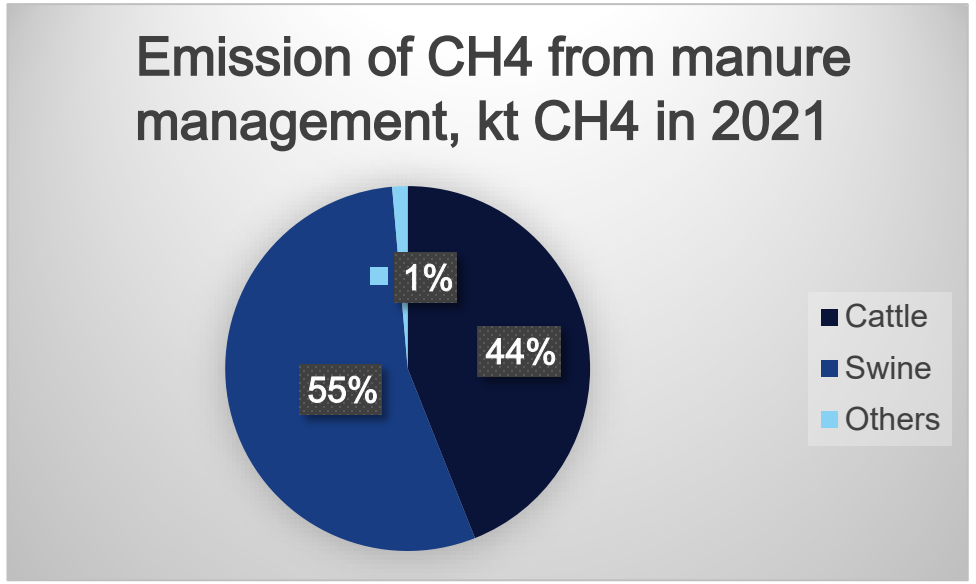
Methane reduction

Reduce PWD

# BACKGROUND

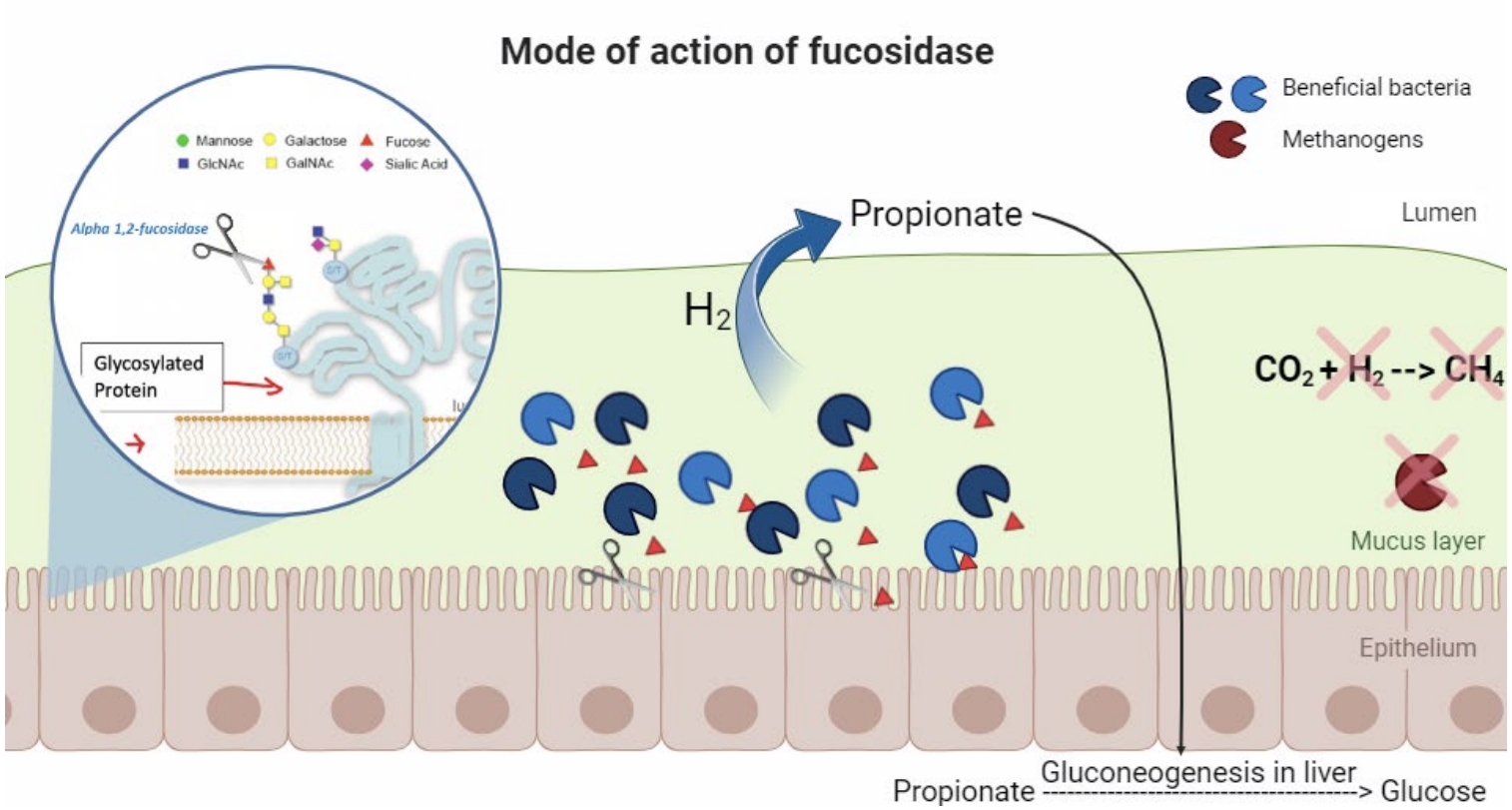
| Parameter | Size in 2021 |
|---|---|
| Number of animals | 13.168.000 |
| Emission of CH4 from enteric fermentation (kt CH4) | 14.03 |
| Emission of CH4 from manure management (kt CH4) | 59.80 |



# BACKGROUND

- Mucus layer
  - Gel forming
  - Transmembrane
- Mucins
- Fucose
- 13 fucosyltransferase genes
- FUT1 & FUT2
  - a(1,2)-fucosyltransferase
  - Synthesis of H blood group antigen



# RESEARCH OBJECTIVES

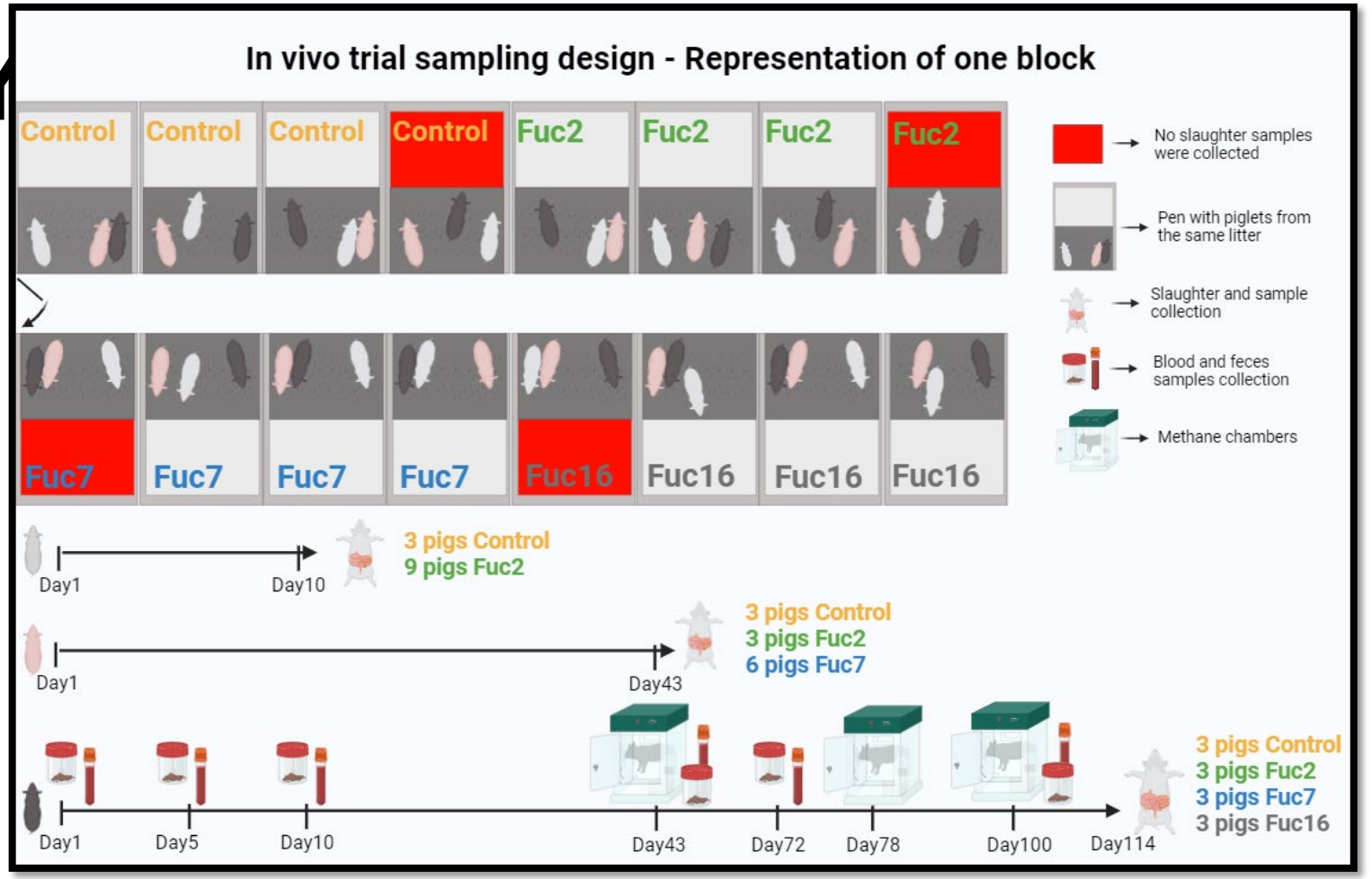
- Fucosidase supplementation will

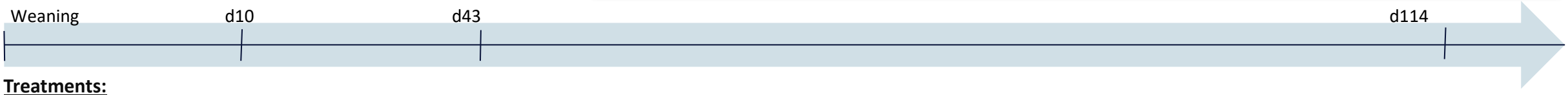
  - decrease enteric methane emission, and
  - Improve growth performance in pigs.

# METHODOLOGY

Summary of datasets:

- Performance:
  - Average Daily Gain (g/pig)
  - Average Daily Feed Intake (g/pig)
  - Gain:Feed per pen
- Methane:
  - In vivo methane emission
  - In vitro methane production
  - qPCR on methanogens

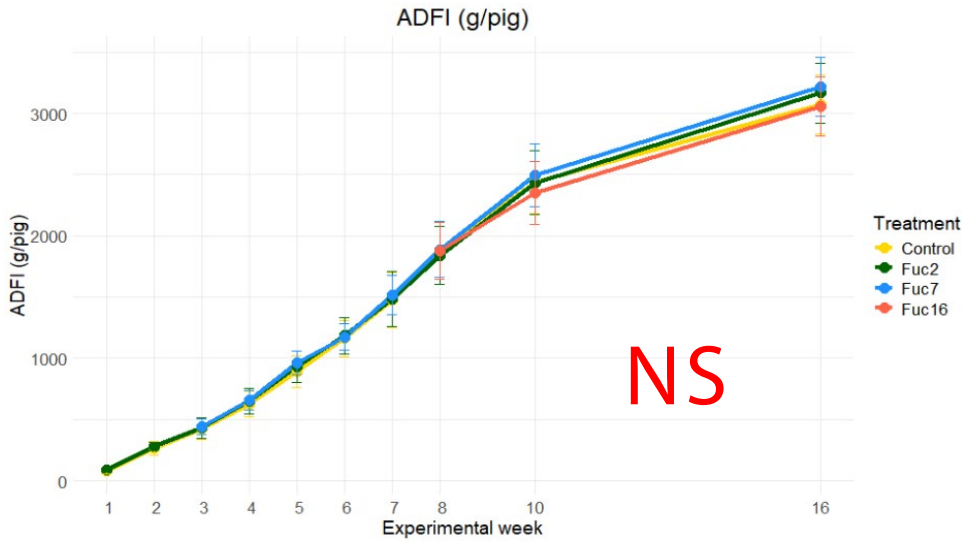


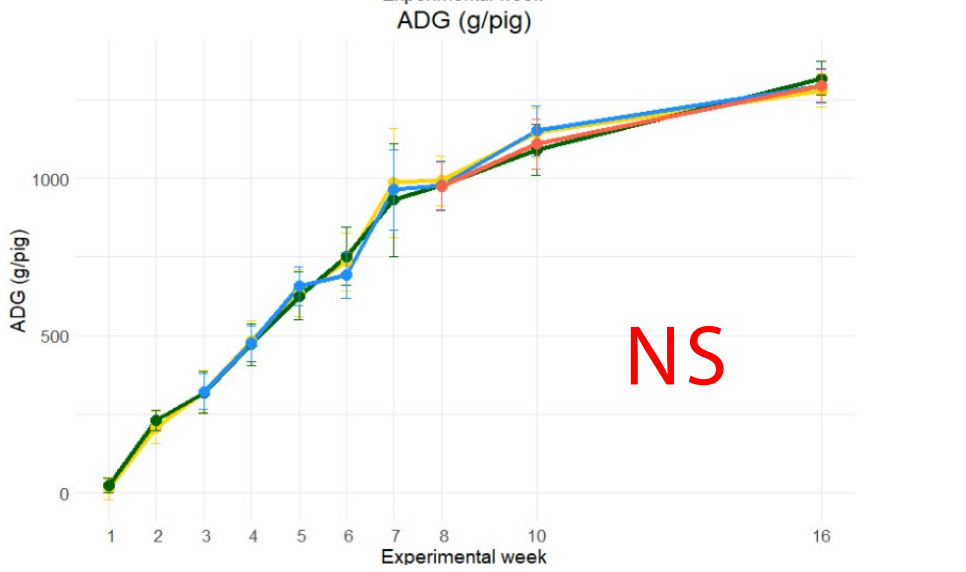



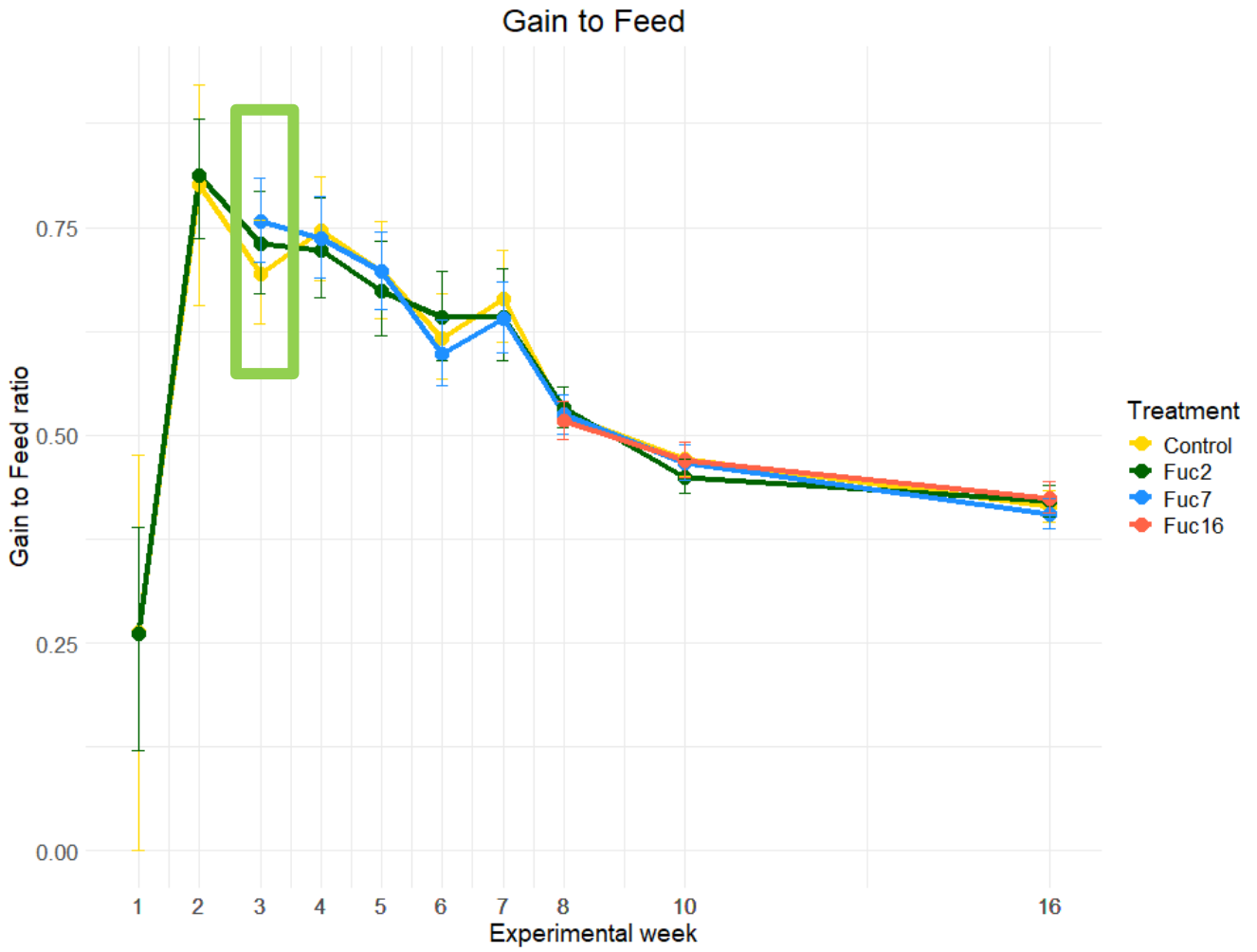

**Treatments:**

1) Control----------
2) Fucosidase ----------Control----------
3) Fucosidase ---------- Control----------
4) Fucosidase ----------

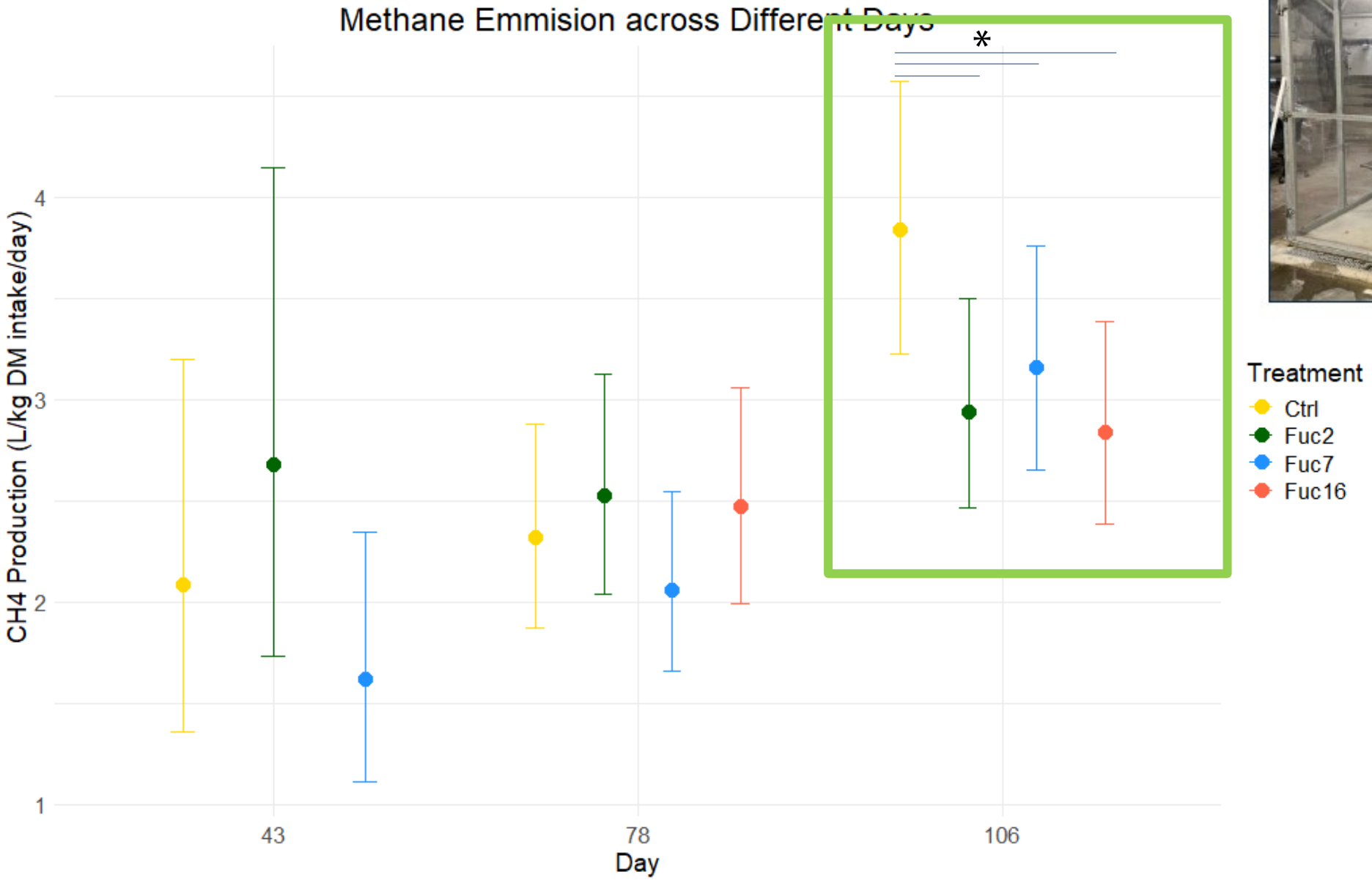
# RESULTS PERFORMANCE



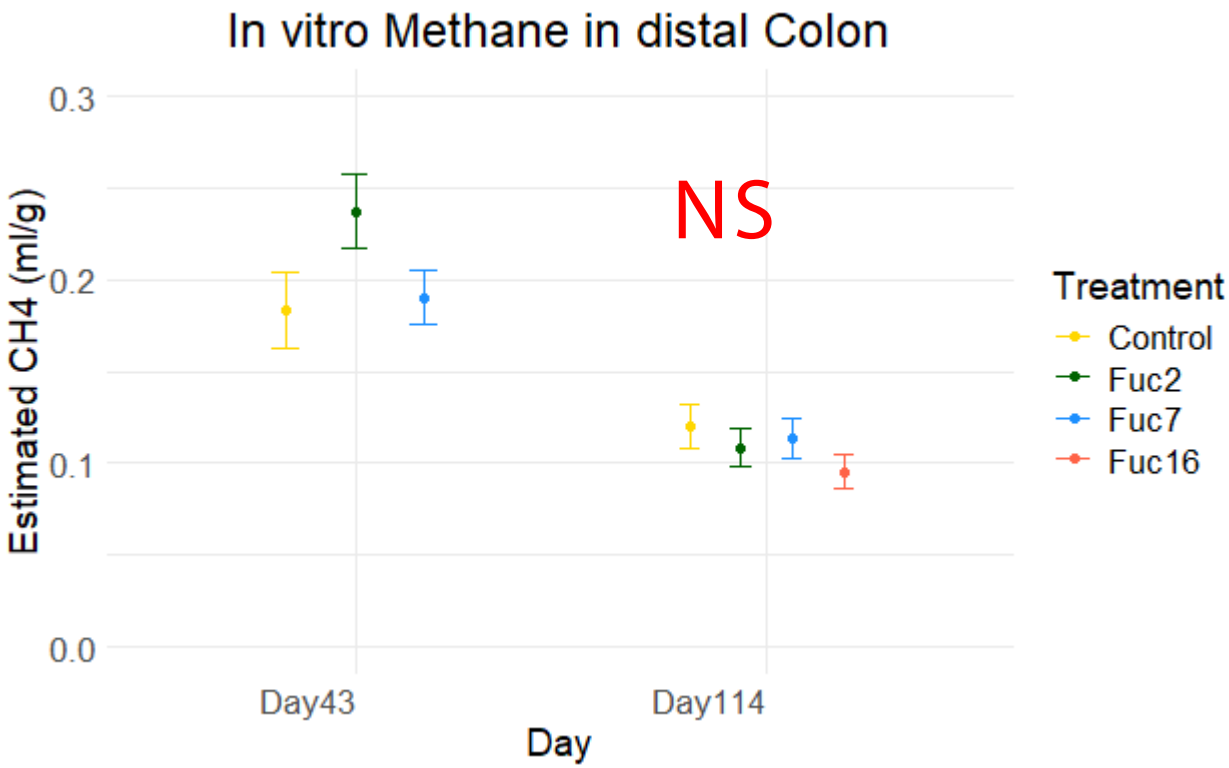



# RESULTS METHANE IN VIVO




# RESULTS METHANE IN VITRO & METHANOGENS




# CONCLUSIONS

Fucosidase supplementation:

- Did not improve ADFI & ADG
- Did not reduce significantly the methane production potential
- Did not reduce the abundance of methanogens

- Improved gain to feed ratio on the 3rd week post weaning
- Reduced enteric methane emission at a later production stage

# Thank you for your time

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