Nutritional value of *Nannochloropsis oceanica* for post-weaning piglets

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1. CONTEXT

Produce more feed

Increase production

Population growth

New alternatives

Microalgae

1. WHY MICROALGAE?

Microalgae

- Interesting nutritional composition: High protein and lipid content
- Its production process can be considered an added value to the sustainability cycle.

***Nannochloropsis oceanica* (NCO)**

Is this microalga a good alternative for feeding weaned piglets?

2. WORK OBJECTIVES

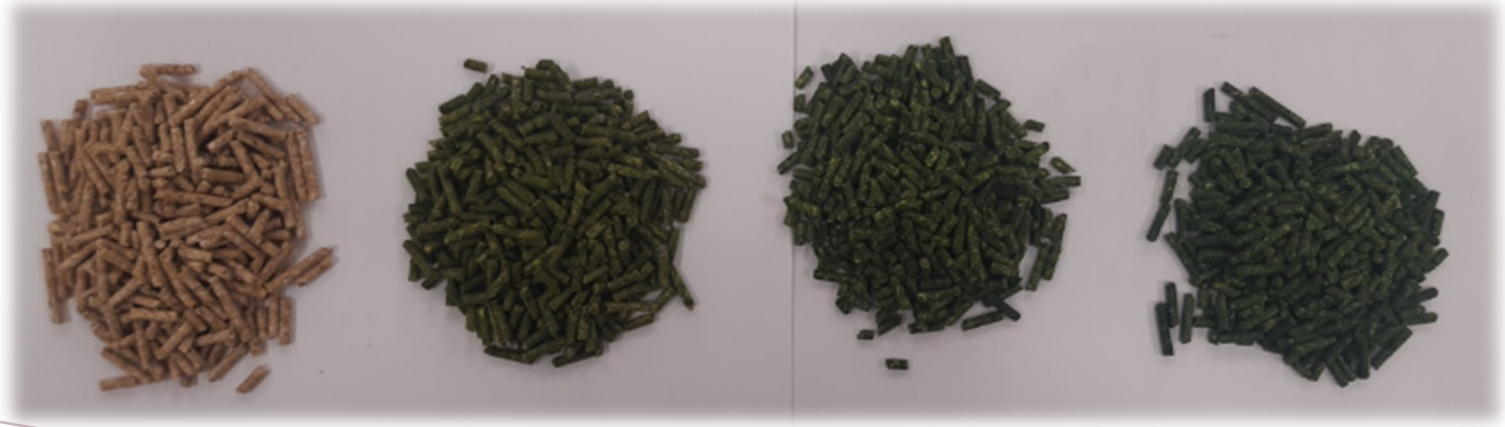
Evaluate the nutritional value of *Nannochloropsis oceanica* for weaned piglets based on:

- Total tract apparent digestibility (TTAD);
- Digestible energy (DE);
- Metabolisable energy (ME);
- Digestible crude protein (DCP).

3. MATERIAL AND METHODS

3.1. Diets and Trial

- 24 post-weaned male castrated piglets (Pietrain x (Large White x Landrace));
- 4 treatments, pair-feeding:
    - Control group (without incorporation of NCO);
    - 5% NCO group (95% control diet + 5% NCO);
    - 10% NCO group (90% control diet + 10% NCO);
    - 15% NCO group (85% control diet + 15% NCO).



3. MATERIAL AND METHODS

3.1. Diets and Trial

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<u>Adaptation period (4 days):</u>
- Environment
- Treatments

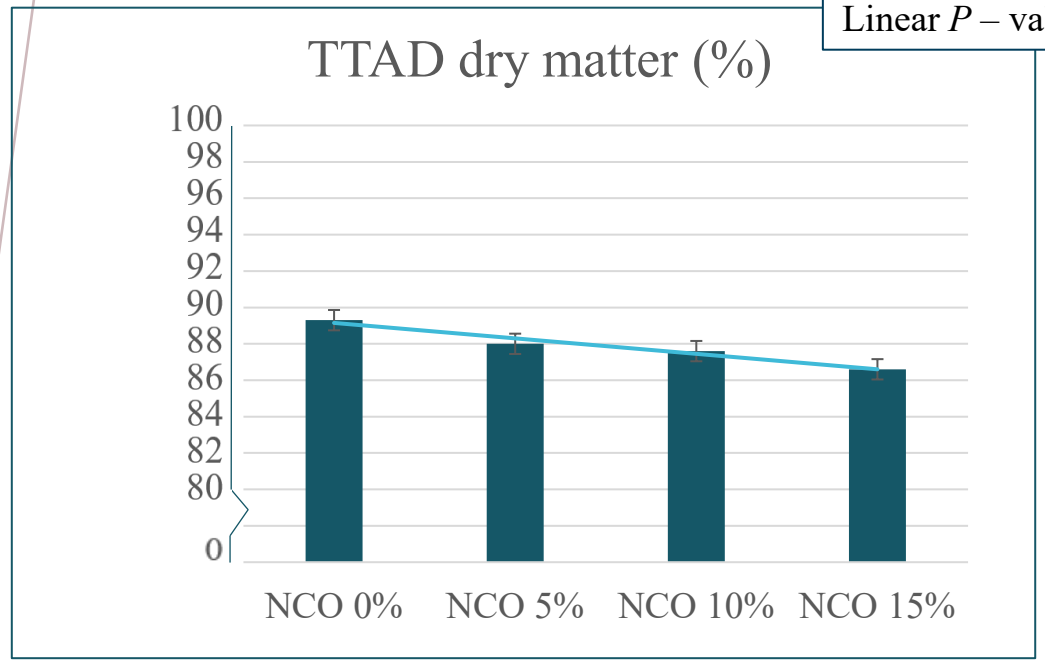
<u>Week 1 (0-7 days):</u>
- Pair-feeding;
- Growth rate control;
- Faecal and urine collection (daily).

<u>Week 2 (7-14 days):</u>
- Same methodology of week 1.

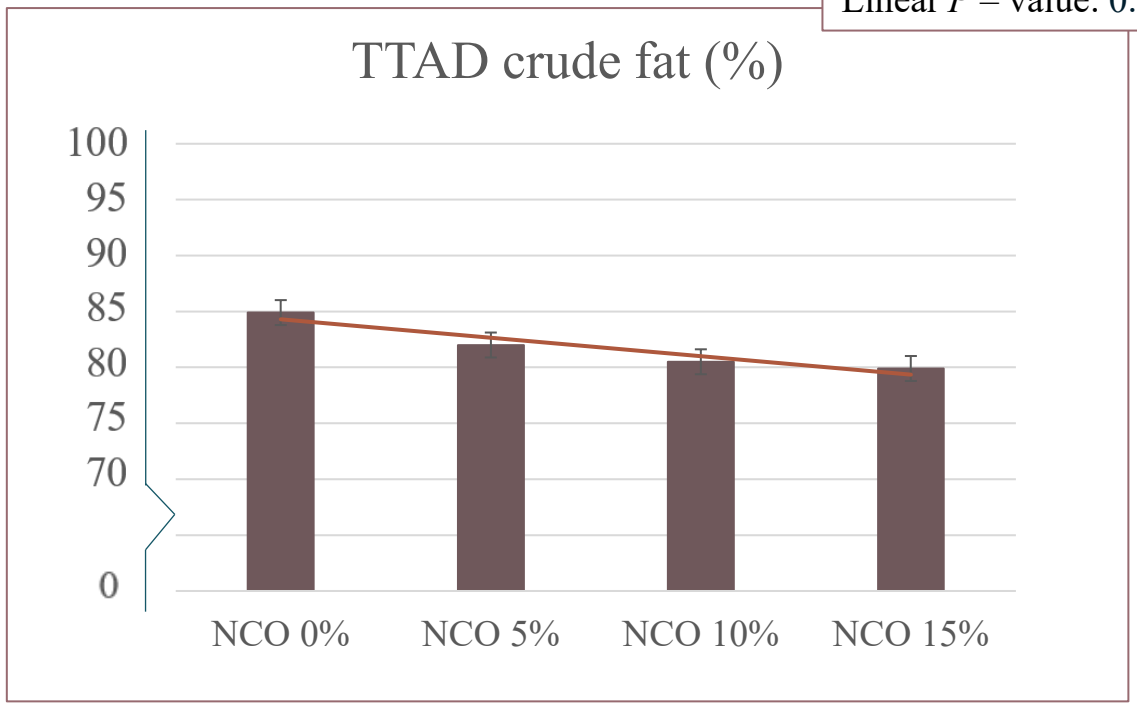
END OF TRIAL

4. RESULTS

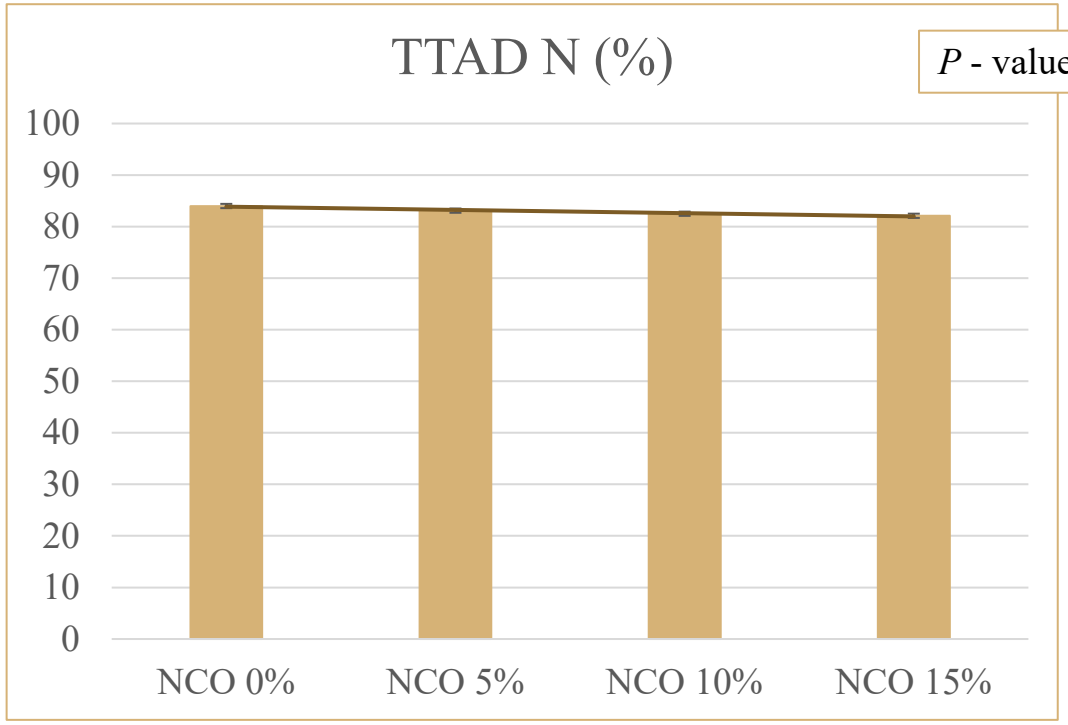
Linear *P* – value: <0.001

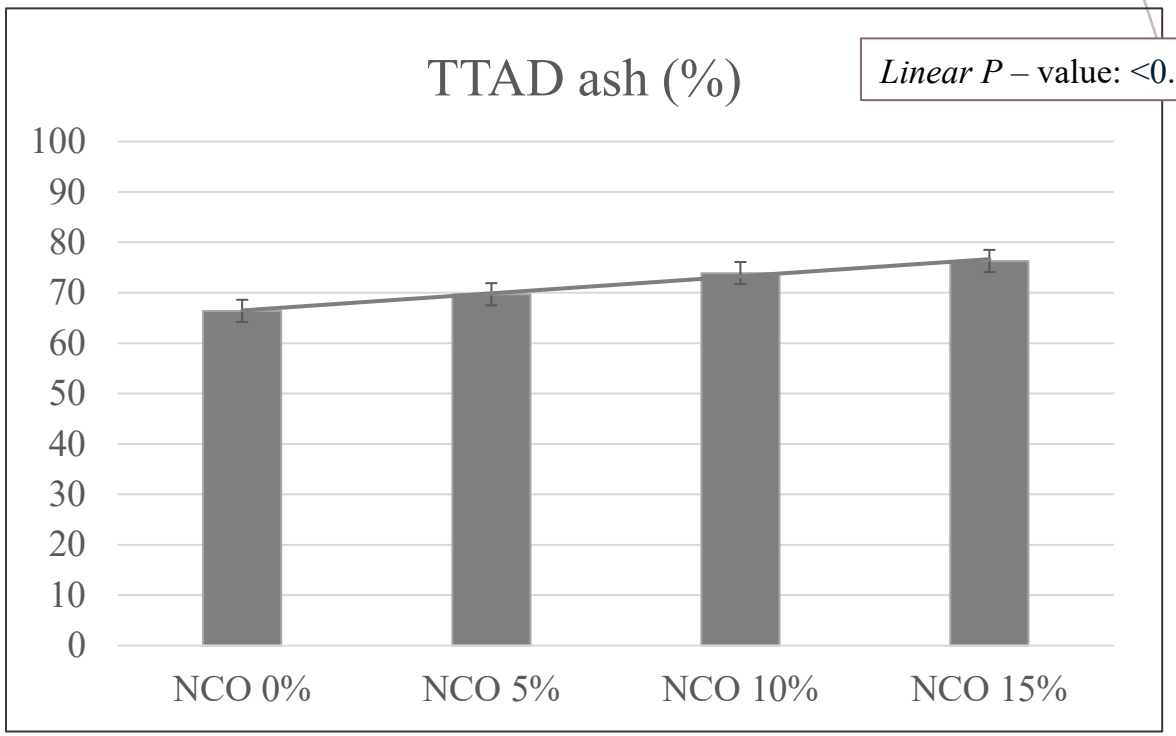


Linear *P* – value: 0.002

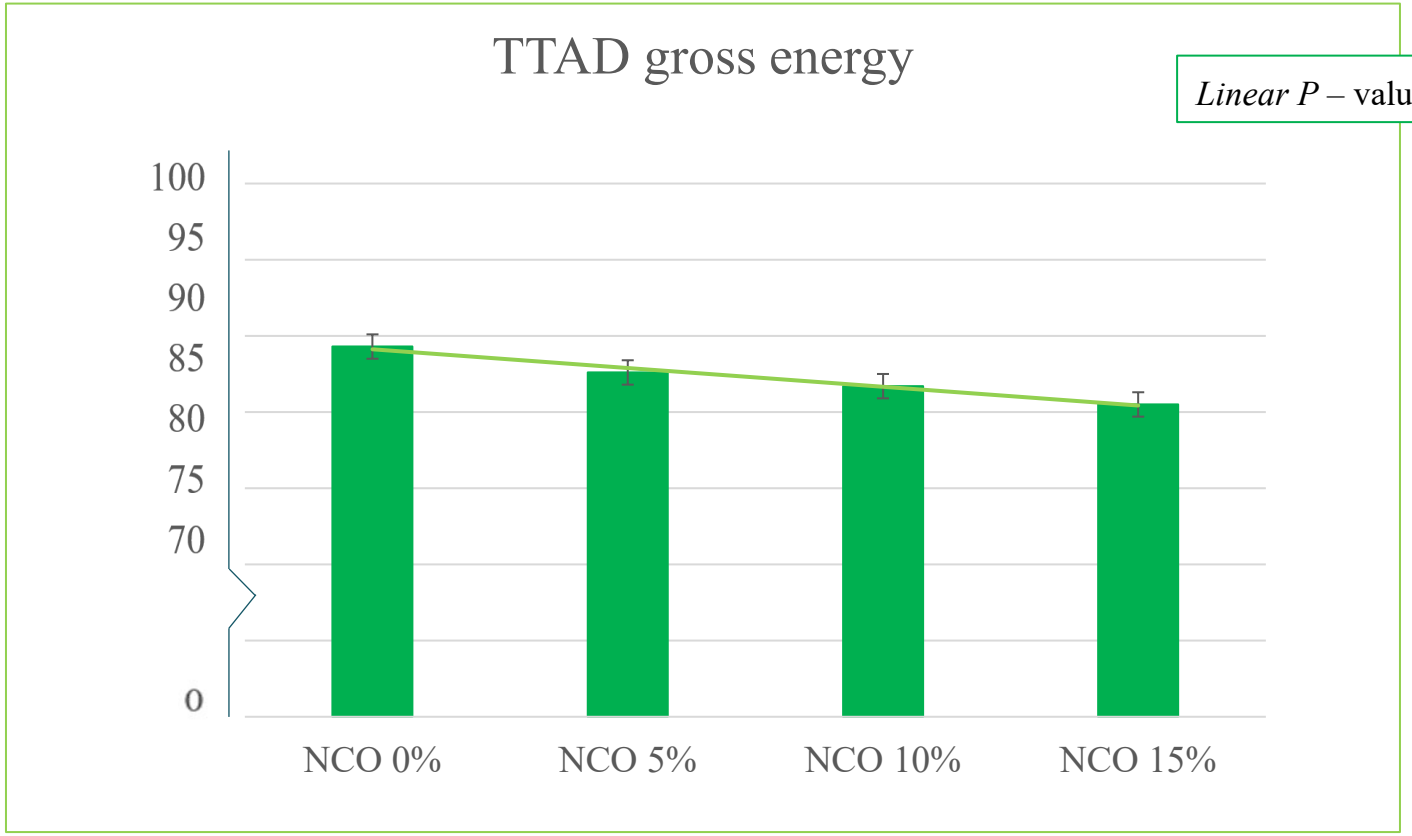


4. RESULTS


TTAD N (%)
P - value N.S.
100
90
80
70
60
50
40
30
20
10
0
NCO 0%
NCO 5%
NCO 10%
NCO 15%

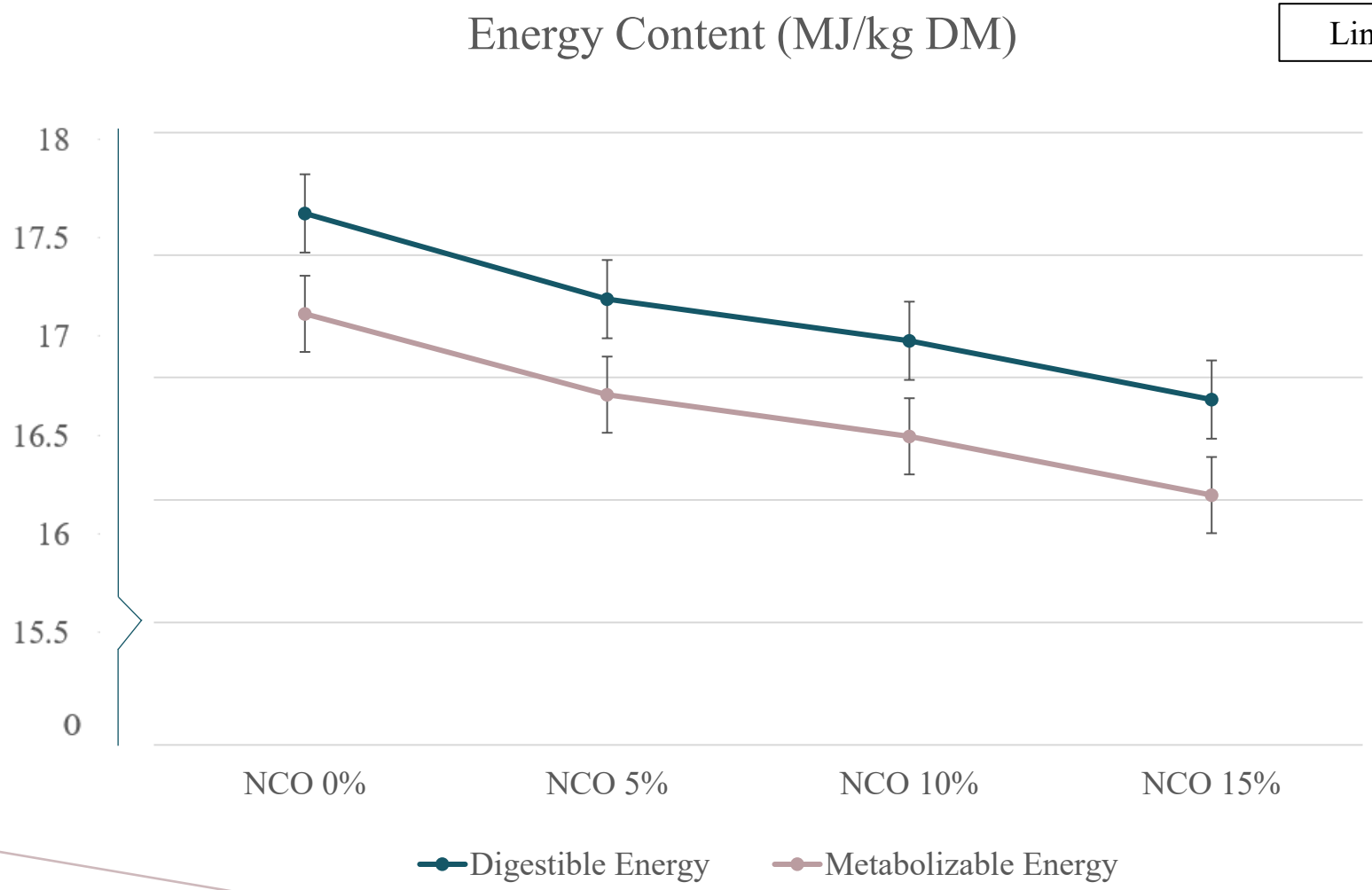

TTAD ash (%)
Linear P – value: <0.001
100
90
80
70
60
50
40
30
20
10
0
NCO 0%
NCO 5%
NCO 10%
NCO 15%

4. RESULTS


TTAD gross energy
Linear P – value: <0.001
100
95
90
85
80
75
70
0
NCO 0%
NCO 5%
NCO 10%
NCO 15%

4. RESULTS

Linear P-values: <0.001



4. RESULTS

	Estimated value of TTAD for *Nannochloropsis oceanica*
Dry Matter (%)	72.5
N (%)	82.9
Crude Fat (%)	51.3

4. RESULTS

	Estimated value for *Nannochloropsis oceanica*
Digestible Energy (MJ/kg DM)[1]	12.74
Metabolisable Energy (MJ/kg DM)[2]	12.40
Digestible Crude Protein (g/kg DM)[3]	204

[1] Gross Energy value × TTAD of GE

[2] DE × ME/DE

[3] N × TTAD of N × N conversion factor.

5. CONCLUSIONS

- This study allows us to evaluate the nutritive value of Nannochloropsis oceanica in piglet feed
- Ash TTAD is the only one with a linear increase with the NCO incorporation
- No significant effects were observed in N TTAD
- The DE and ME had a linear decrease

Thank you for your attention

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