EFFECT OF ADDING JERUSALEM ARTICHOKE IN FEED TO ENTIRE MALE PIGS ON SKATOLE LEVEL AND MICROFLORA COMPOSITION

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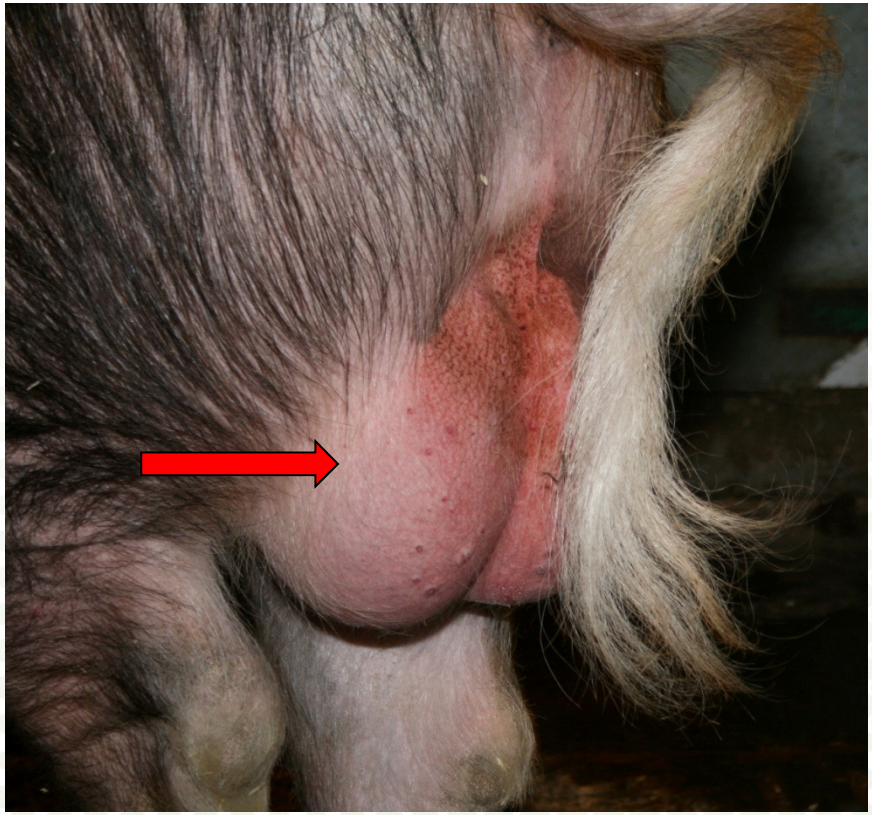
OUTLINE

- Introduction
- Material and methods
- Results
- Conclusion

Introduction



- Jerusalem artichoke to male pigs one week before slaughter: Reduction in boar taint?

Introduction: What is boar taint?

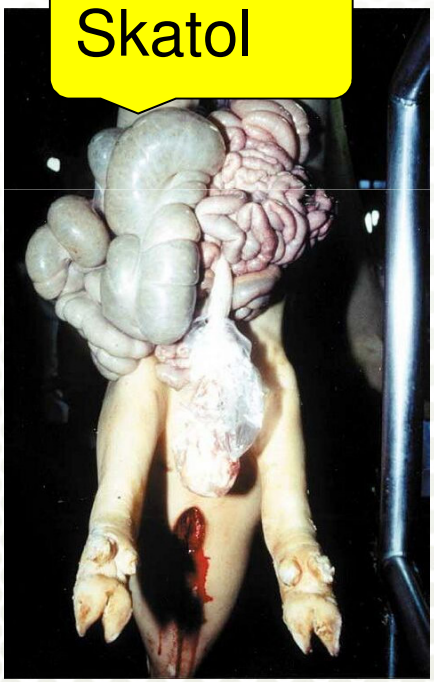


Photo: Videncenter for svineproduksjon, DK

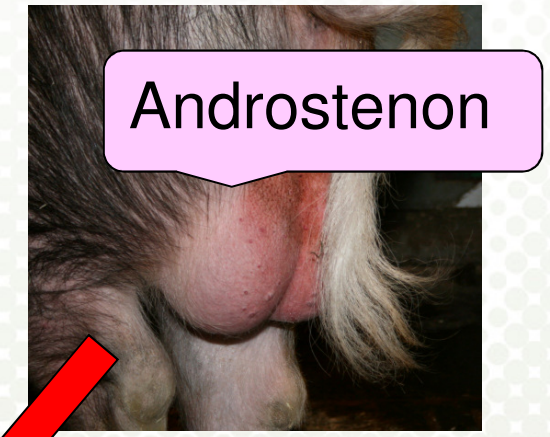


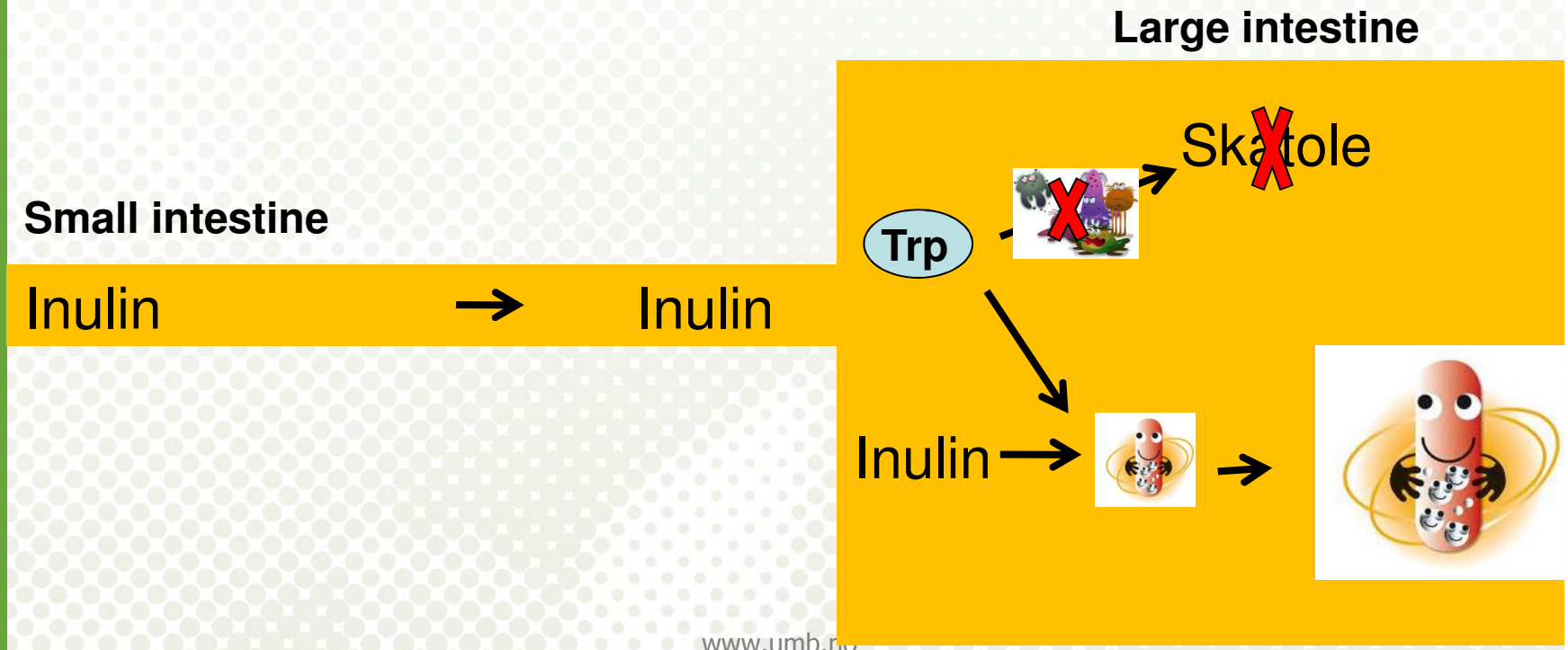
Photo: Janne Brodin, UMB

Introduction: Jerusalem artichoke ("jordskokk")

INULIN

Introduction: How can inulin reduce boar taint?

- Inulin is not enzymatically broken down in the small intestine
- Jerusalem artichoke: Inulin 50% (dried product)
- Protein (incl. tryptofan) will then be used for bacterial growth and not broken down to end products as skatole



Material and methods

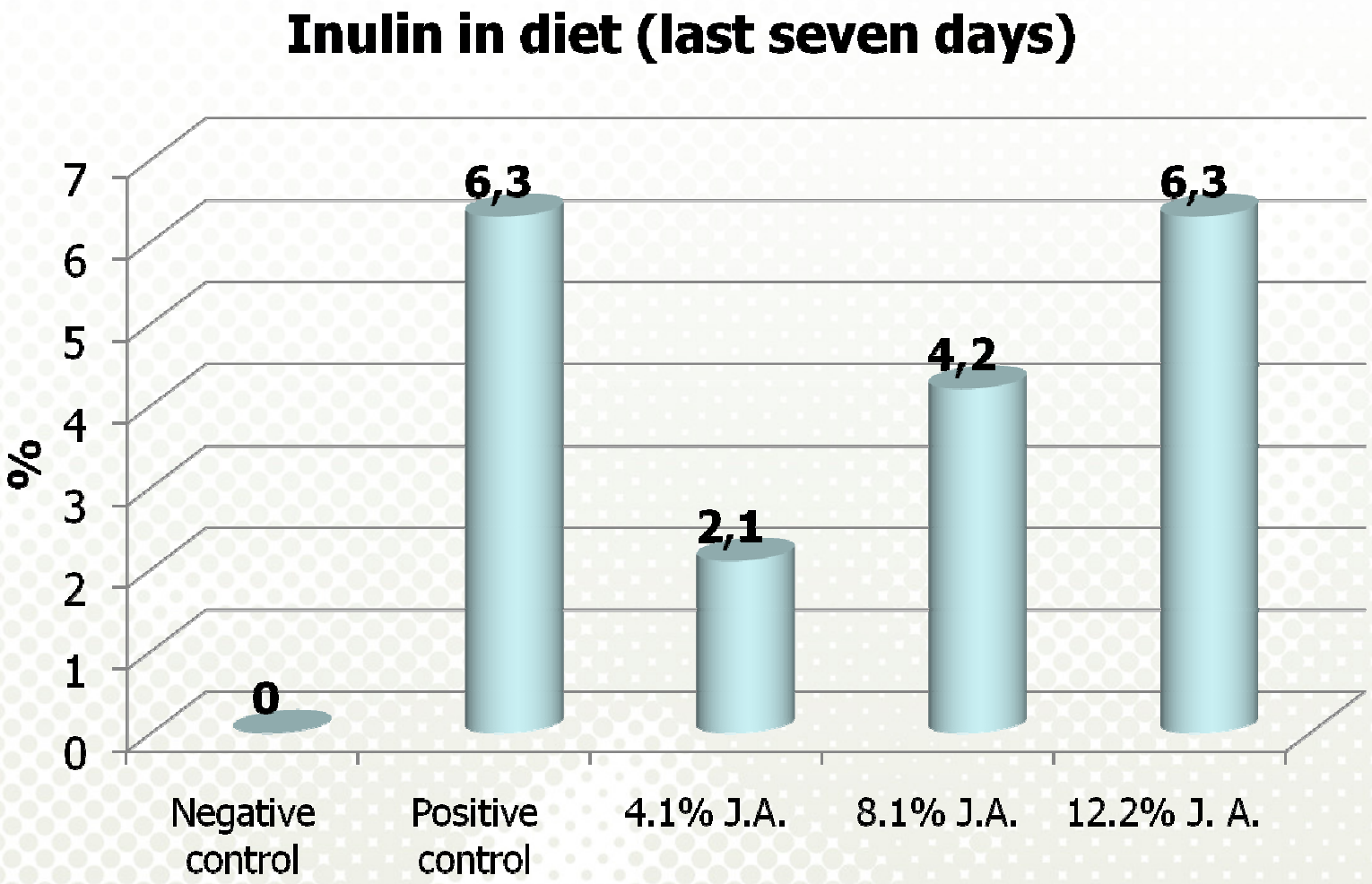
- Objective:

  Can addition of dried Jerusalem artichoke one week before slaughtering influence:

  - Skatole in hindgut content and adipose tissue
  - Microflora composition in the hindgut
  - Short chain fatty acid composition in the hindgut

- 55 entire male pigs, Norhybrid (not castrated)
- Five dietary treatments, n=11
- Seven days before slaughtering

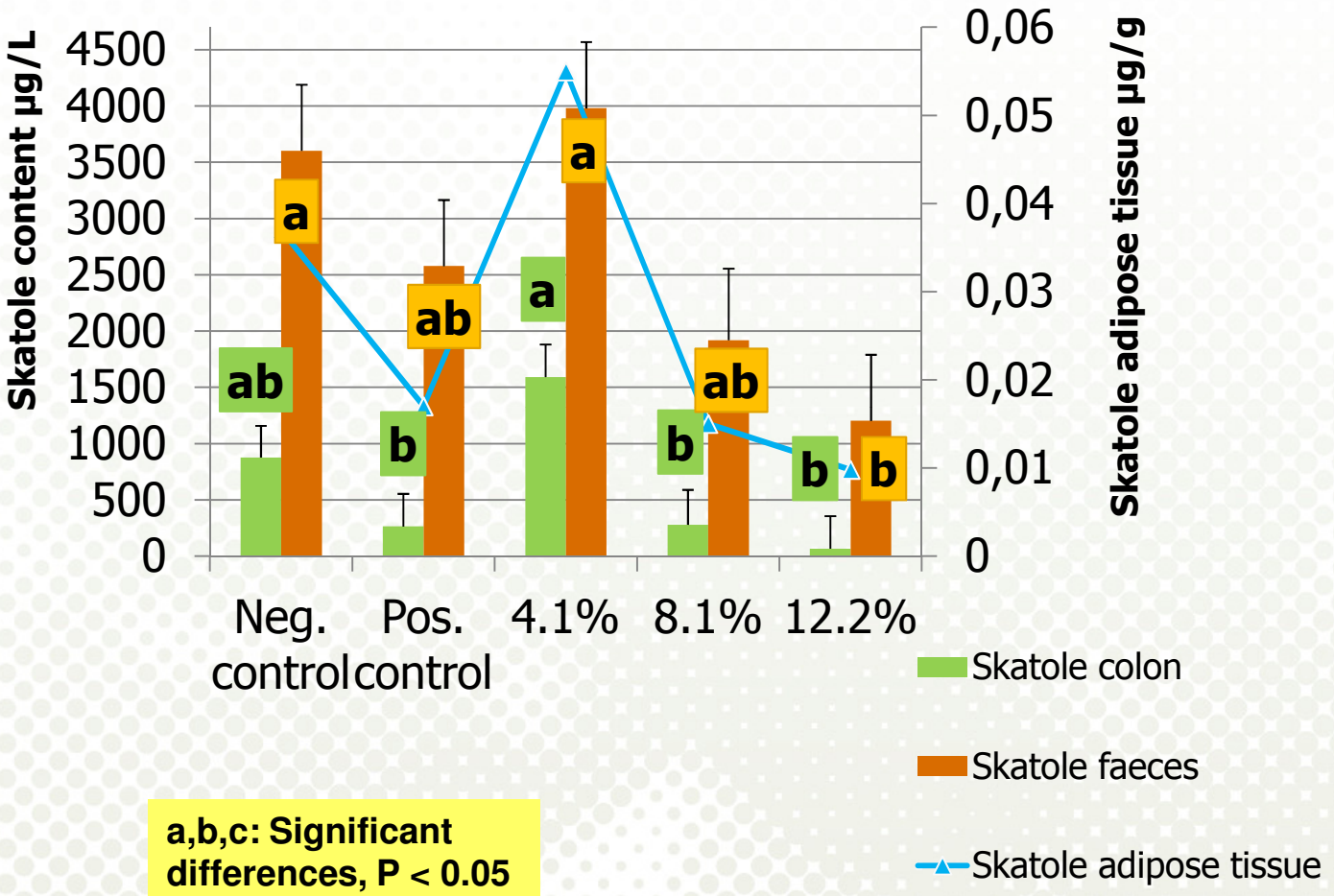
Material and methods



Negative control	Positive control	4.1%	8.1%	12.2%

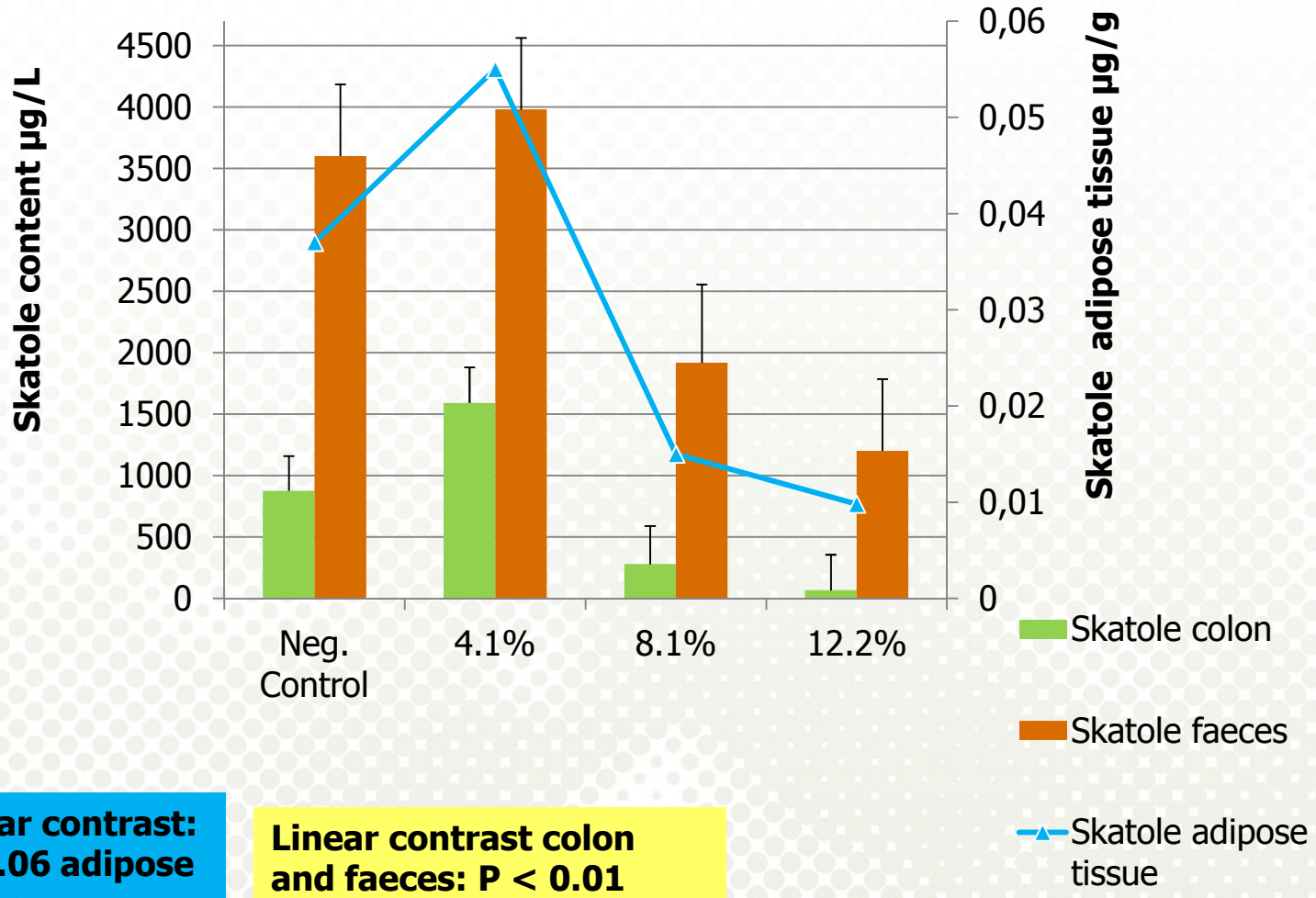
Animal Production Experimental Centre, UMB

Results: Skatole



a,b,c: Significant differences, P < 0.05

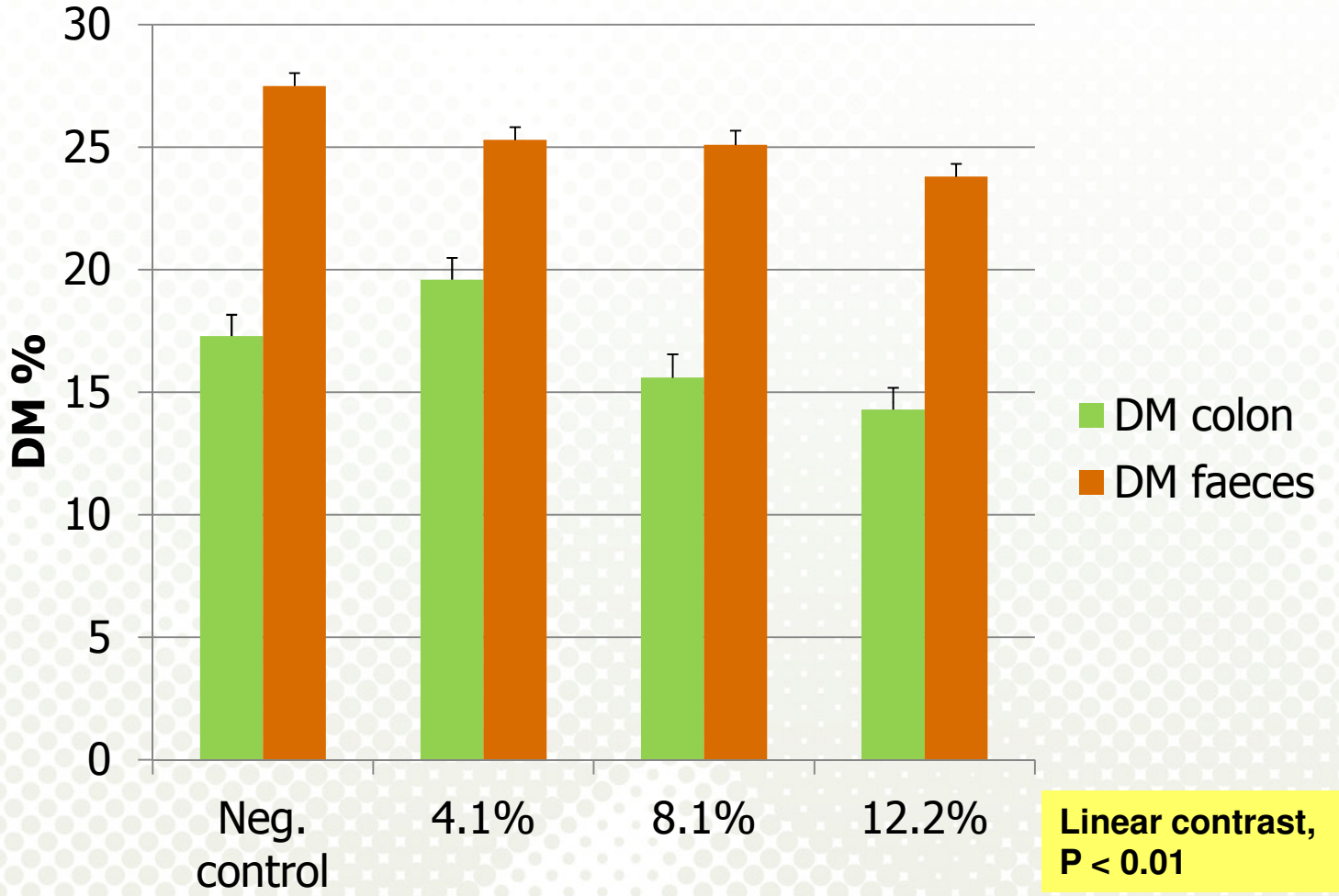
Results: Skatole



Linear contrast: P=0.06 adipose tissue

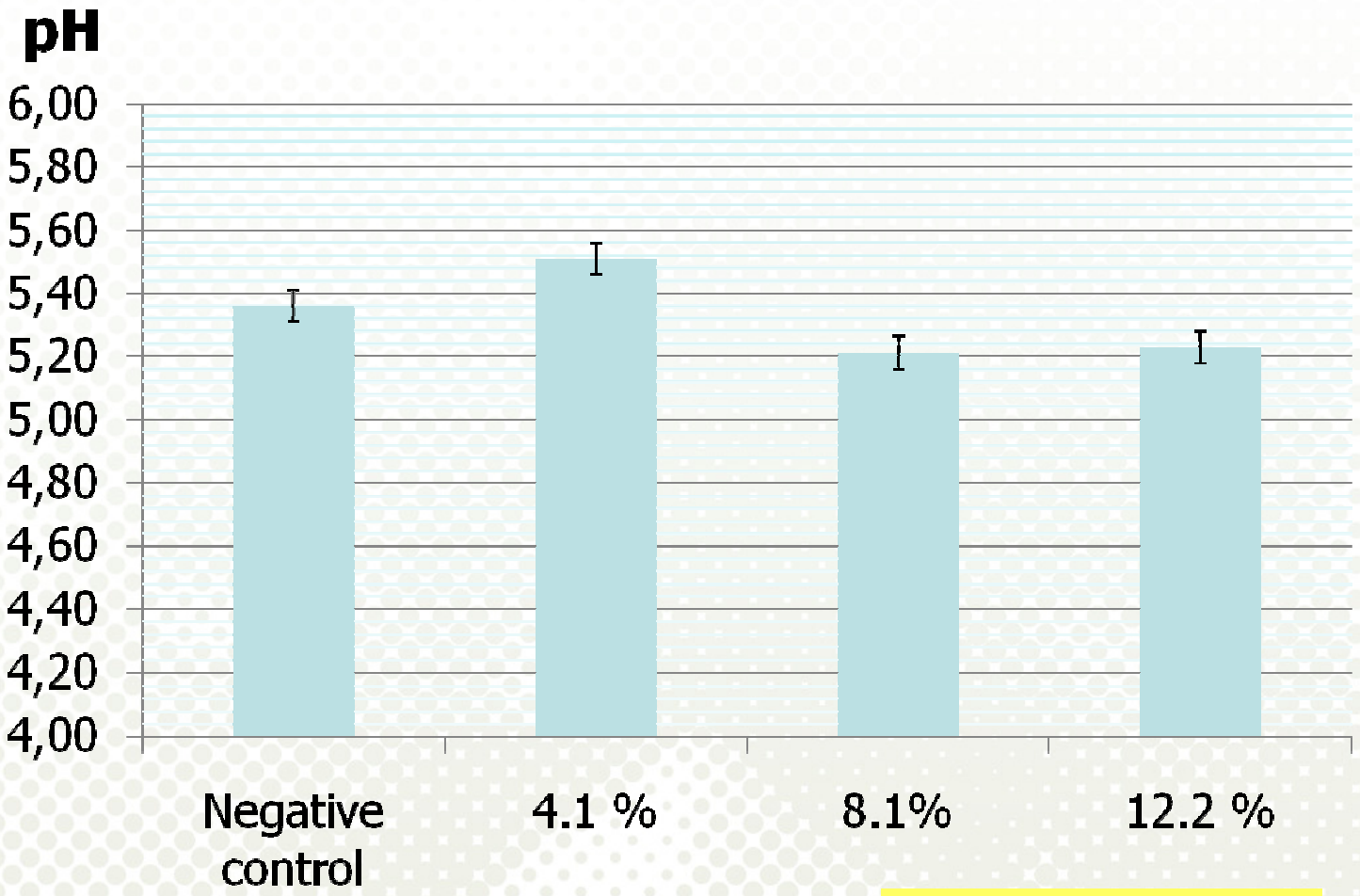
Linear contrast colon and faeces: P < 0.01

Results: Dry matter (DM)



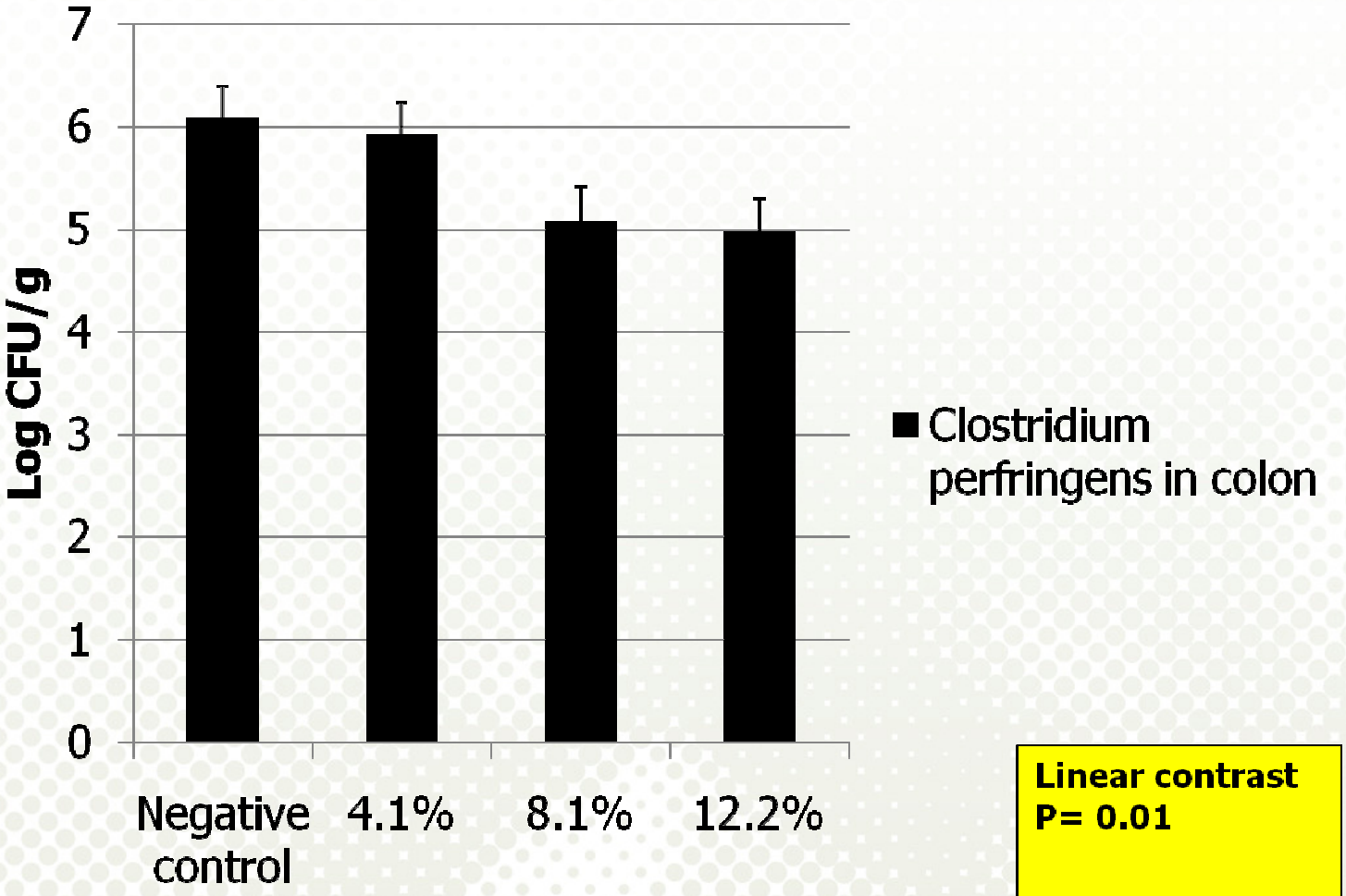
Linear contrast, P < 0.01

Results: pH



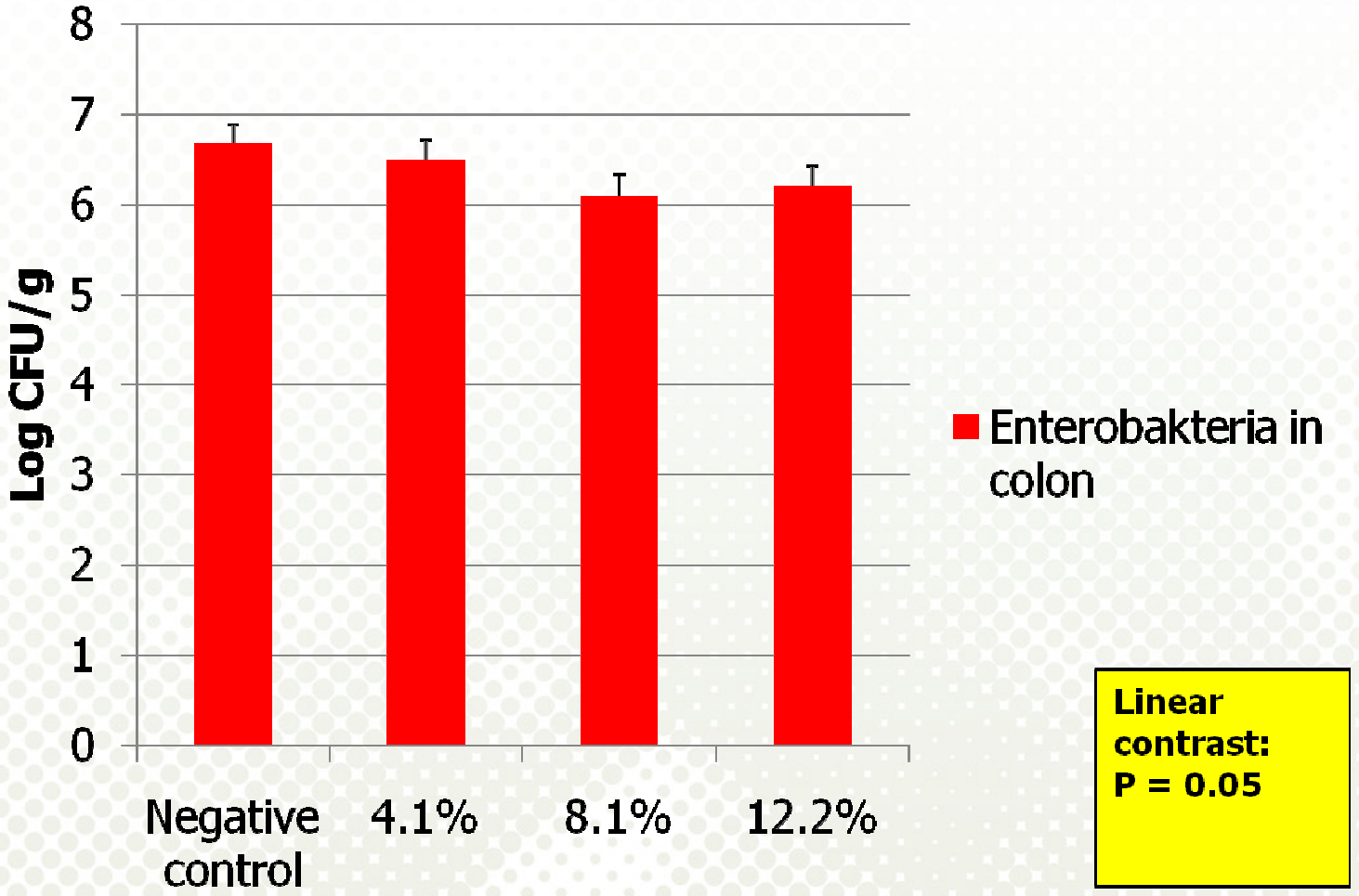
Linear contrast, P < 0.01

Results: *Clostridium perfringens*



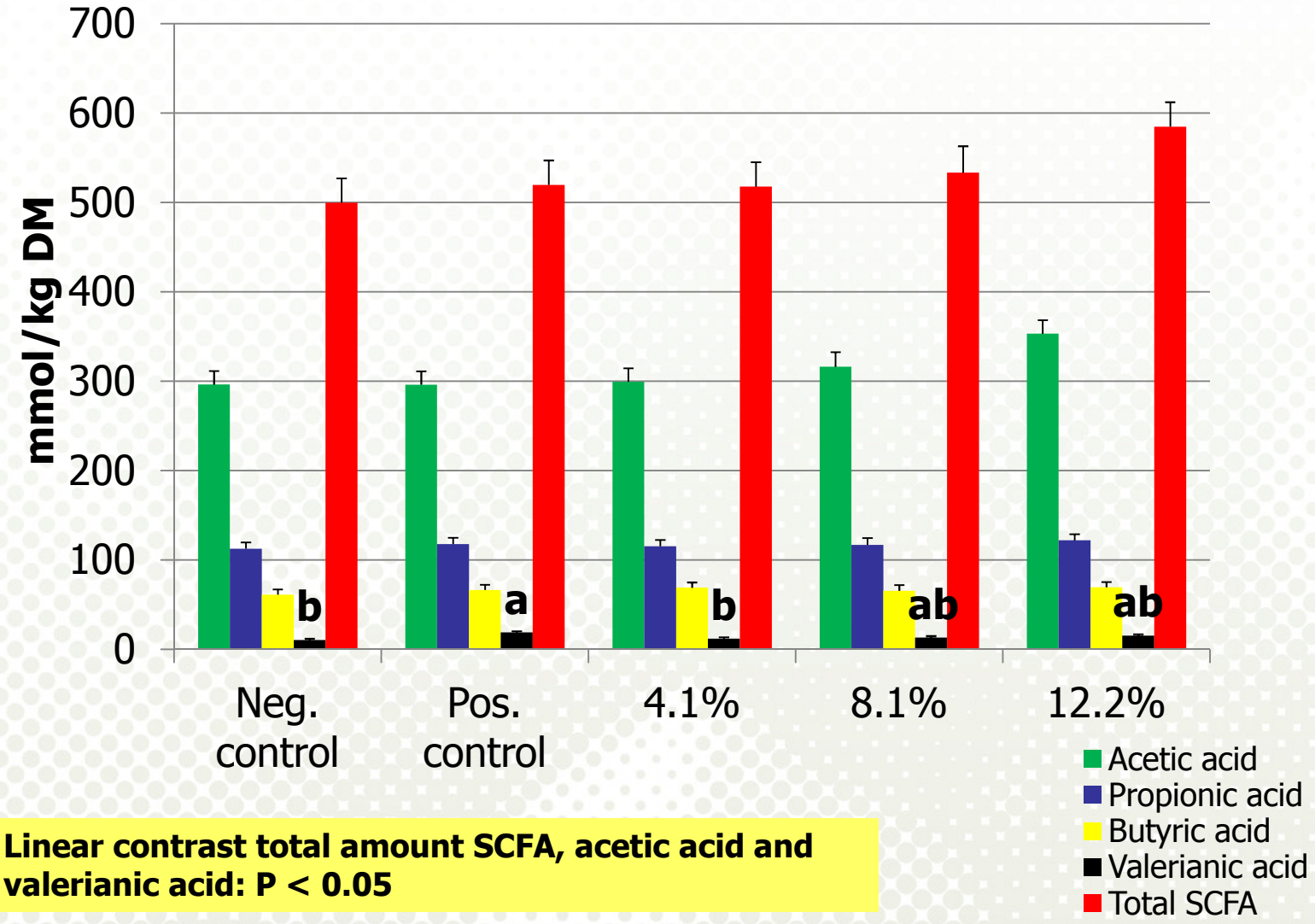
Linear contrast
P= 0.01

Results: Enterobacteria



Linear contrast: P = 0.05

Results: Short chain fatty acids (SCFA)



Linear contrast total amount SCFA, acetic acid and valerianic acid: P < 0.05

Results summary:

- Addition of increasing amounts of Jerusalem artichoke to entire male pigs the last seven days before slaughter:
  - Reduced skatole in colon and faeces
  - Reduced skatole in adipose tissue (trend)
  - Decreased DM in colon and faeces
  - Decreased pH in colon
  - Reduced *Clostridium perfringens* in colon and rectum
  - Reduced enterobacteria in colon (trend)
  - Increased total SCFA content in faeces
  - Increased acetic acid content in faeces
  - Increased valerianic acid content in faeces

Conclusion

- Adding dried Jerusalem artichoke to diets for entire male pigs one week before slaughter reduces skatole and has positive influence on the microflora in the hindgut