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# Carcass and meat quality of lambs from different breeds and production systems

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# overview

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- Introduction
  - Production systems
  - Carcase and meat quality
- material and method
- results
- conclusions

# Introduction

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- In Austria lamb meat production is a small part of animal production
- Different production conditions
- Small farms, average 24 heads
- Lamb meat consumption ~ 1,2 kg
- Consumer expect natural production systems
- Costs of concentrate increase
- Self sufficiency ~ 75 %

# Introduction – production systems

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- Alpine pasture
  - Appr. 3-4 months
  - Free movement
- Semi intensiv
  - Lambs stay by their mothers
  - High portion of roughage or pasture
- Intensive fattening
  - Early weaning (6 – 8 weeks)
  - High amount of concentrate

# Introduction - quality

- Young lambs
- High portion of lean meat
- Low fat content
- Carcasse weight 18 to 22 kg
- Natural production
- Animal friendly production



# Material and method - data

- 195 male and female lambs
- 3 production systems
  - Alpine pasture (A)
  - Semi intensiv (B)
  - Intensiv (C)
- 3 breeds
  - Austrian mountain sheep
  - Crossbreed
  - Merino

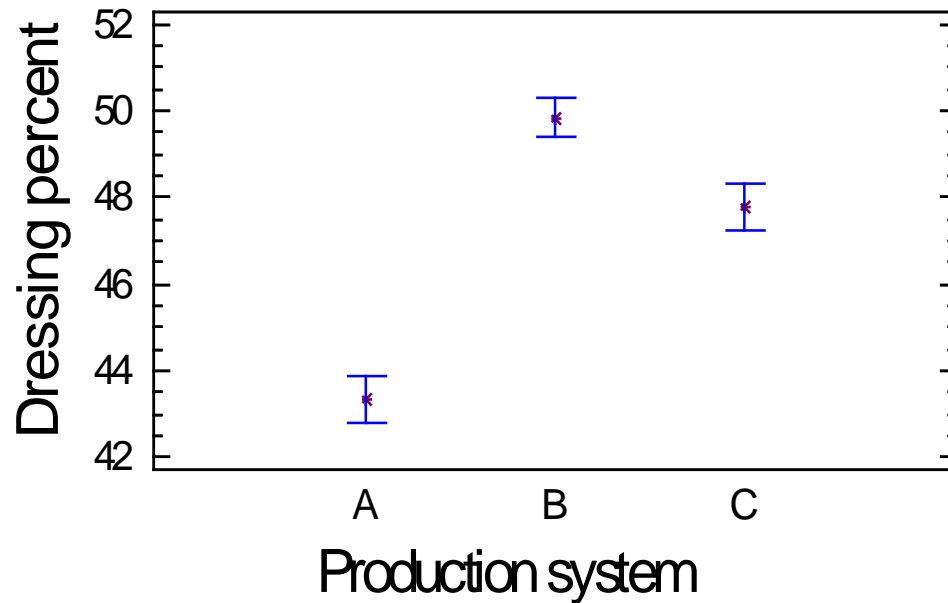


# Material and method

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- Slaughter weight 38 – 42 kg
- EUROP classification
- Dressing percentage
- pH-value 1 and 24 h after slaughter
- Fatty acid profile and composition of m.l.d.
- Tenderness (shear force)
- Juiciness
- colour

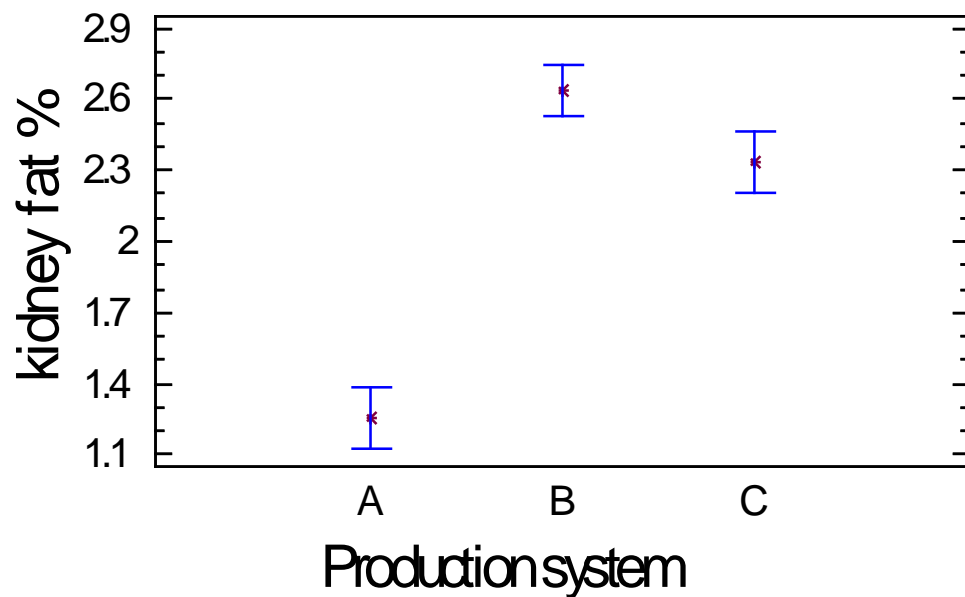
# Results – dressing percentage



	A	B	C
Dressing percentage, %	43,3 <sup>a</sup>	49,8 <sup>b</sup>	47,8 <sup>c</sup>

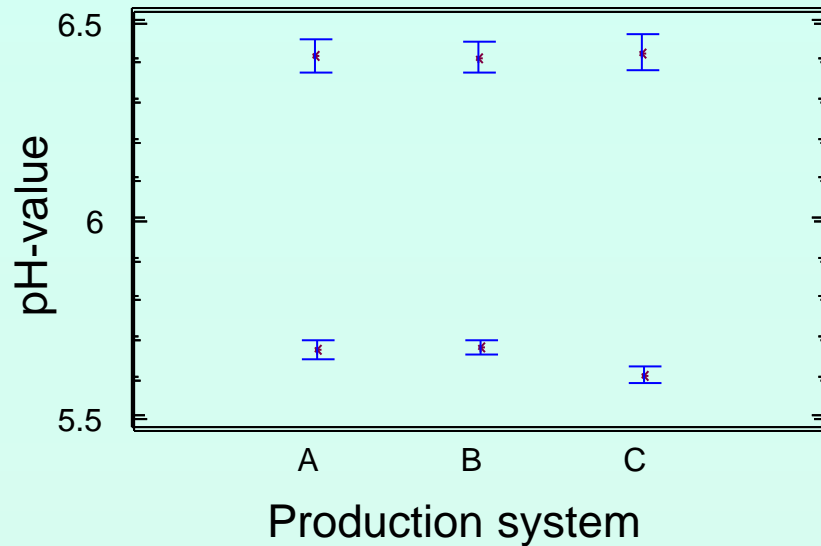


# Results – kidney fat



	A	B	C
Kidney fat, %	1,3 <sup>a</sup>	2,6 <sup>b</sup>	2,3 <sup>c</sup>

# Results – pH-value



	A	B	C
pH-value 1	6,41	6,40	6,42
pH-value 24	5,68 <sup>a</sup>	5,68 <sup>a</sup>	5,61 <sup>b</sup>

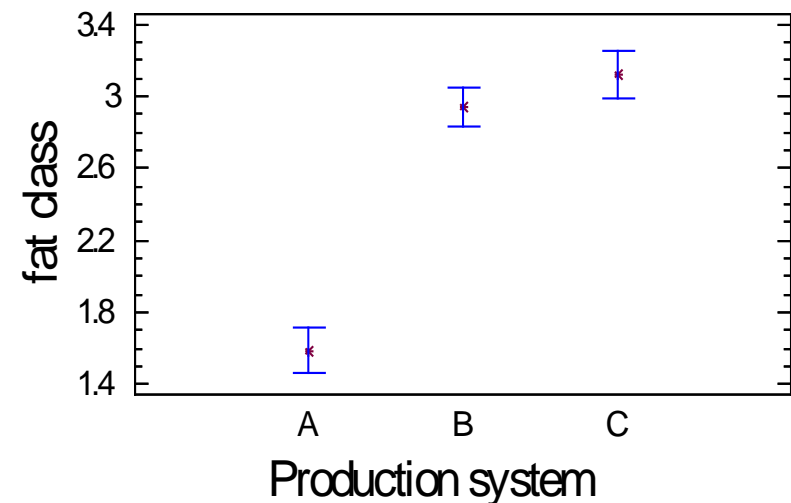
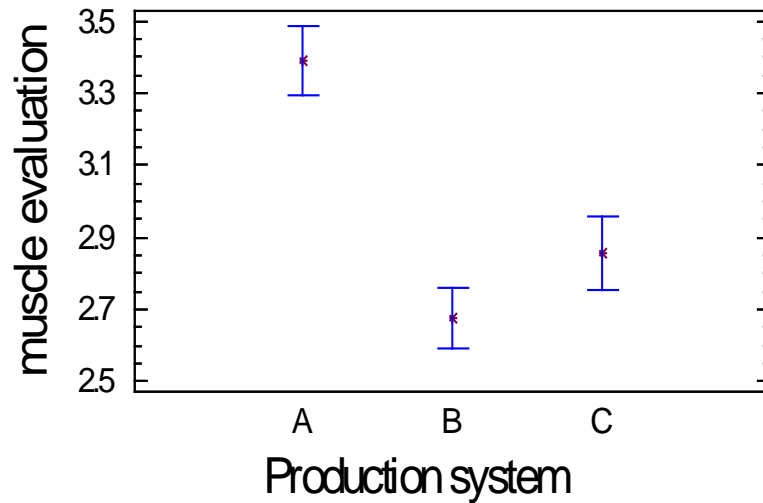
# Results – fatty acids

	A	B	C
CLA	0,99 <sup>a</sup>	0,91 <sup>a</sup>	0,59 <sup>b</sup>
C9t11-CLA	0,97 <sup>a</sup>	0,90 <sup>a</sup>	0,59 <sup>b</sup>
n6:n3	2,57 <sup>a</sup>	2,55 <sup>a</sup>	5,06 <sup>b</sup>
SFA	46,31 <sup>a</sup>	46,46 <sup>a</sup>	41,96 <sup>b</sup>
MUFA	40,80 <sup>a</sup>	43,12 <sup>b</sup>	46,26 <sup>c</sup>
PUFA	12,87 <sup>a</sup>	10,41 <sup>b</sup>	11,76 <sup>ab</sup>

# Results – meat quality

	A	B	C
Drip loss, %	1,88 <sup>a</sup>	2,31 <sup>b</sup>	2,66 <sup>c</sup>
Share force, kg	4,03	4,43	4,45
Colour-L	38,7 <sup>a</sup>	44,1 <sup>b</sup>	40,0 <sup>a</sup>
Colour-a	9,8 <sup>a</sup>	9,7 <sup>a</sup>	9,0 <sup>b</sup>
CP of m.l.d., %	0,97 <sup>a</sup>	0,90 <sup>a</sup>	0,59 <sup>b</sup>
CF of m.l.d., %	17,6 <sup>a</sup>	27,3 <sup>b</sup>	17,4 <sup>a</sup>

# Results – EUROP



	A	B	C
muscle <sup>1</sup>	3,39 <sup>a</sup>	2,68 <sup>b</sup>	2,86 <sup>b</sup>
fat <sup>2</sup>	1,59 <sup>a</sup>	2,94 <sup>b</sup>	3,12 <sup>b</sup>

<sup>1</sup> according EUROP. E=1, U=2, R=3, O=4, P=5; <sup>2</sup> Fat class 1=very thin, 5=very fat

# conclusion

- Not only the quantity is decisively also quality
- Every breed and every production system has advantages and disadvantages
- Lambs from systems with low concentrate input had better values in meat quality parameters, especially in the FA profile, but poorer quantity characteristics
- Production system depends on the market