



The cholesterol content in meat, fat and giblets of lambs depending on the breed and feeding

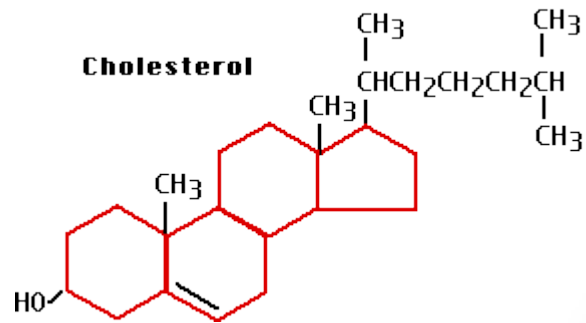
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Aim

- To investigate cholesterol content in meat, fat and giblets of lamb depending on feeding system and breed

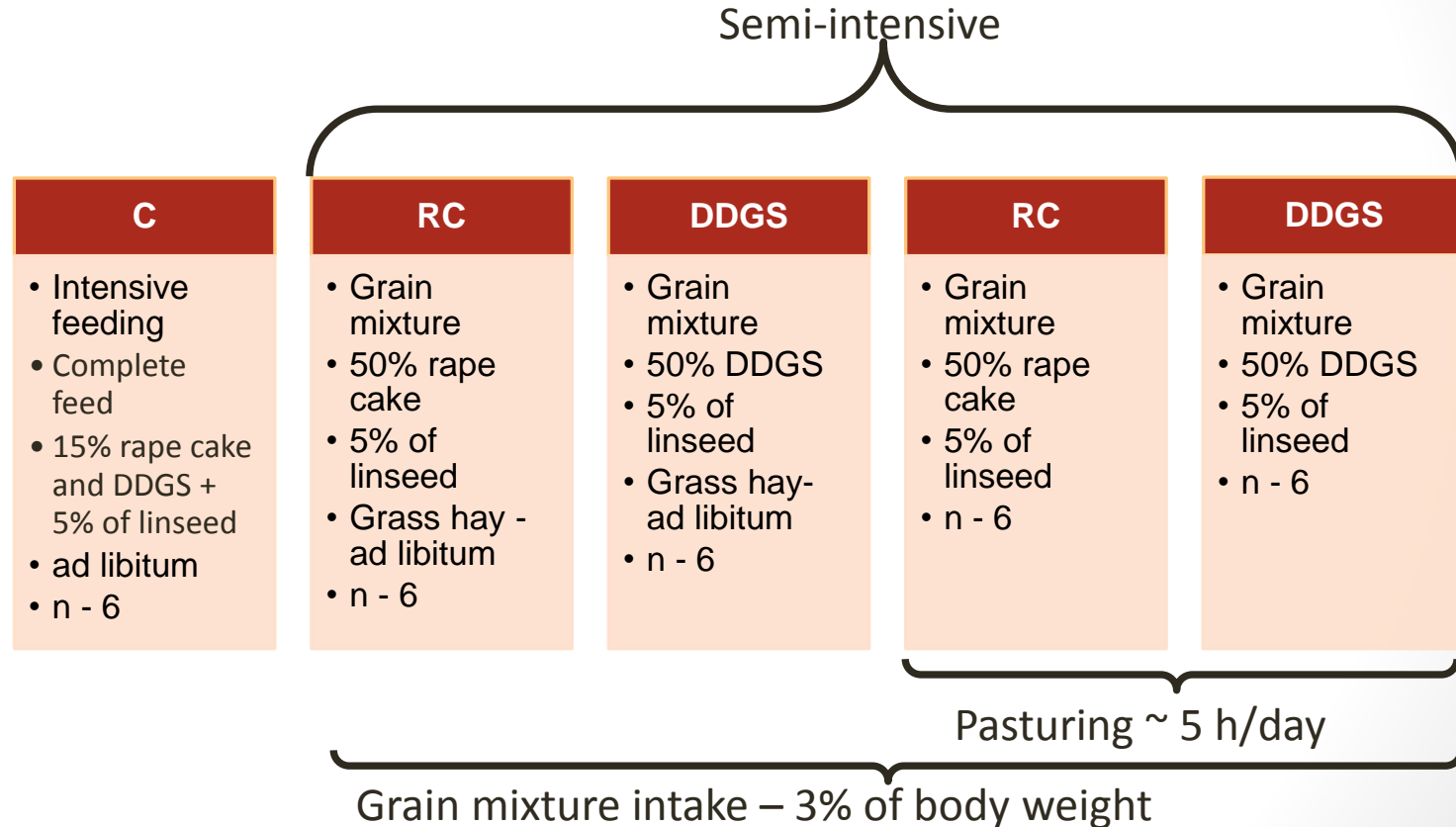


Materials and methods

- 30 ram – lambs → Kołuda Sheep (n-15)
Ile de france x Kołuda Sheep (n-15)



Materials and methods



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- Rams were fattened to the body weight: 32-37 kgs
- Samples collected (*longissimus lumborum* muscle, cover fat and giblets: liver, lung, heart and kidney) and stored at -20 °C temperature
- Tissue fat extraction
- Cholesterol was determined using gas chromatography–
Agilent Technologies gas chromatograph, type 7890A, column HP-5 (30 m × 320 μm × 0,25 μm)
- Statistical calculation (Statistica software v.6.0)



Sheep giblets





Results

The cholesterol content in meat, fat and giblets of lambs depending on the breed [mg/100g]

| Genotype | Meat | | Cover fat | | Liver | | Lung | | Heart | | Kidney | |
|----------------|-------------|------|-------------|------|--------------|------|--------------|------|-------------|------|--------------|------|
| | x | v% | x | v% | x | v% | x | v% | x | v% | x | v% |
| KS (n - 15) | 45,8 | 30,9 | 72,1 | 32,4 | 257,3 | 35,7 | 692,4 | 34,6 | 41,3 | 34,2 | 189,3 | 22,4 |
| IfxKS (n - 15) | 46,9 | 36,8 | 70,9 | 44,4 | 228,3 | 30,3 | 574,0 | 18,5 | 41,2 | 48,3 | 213,2 | 33,1 |

KS – Kołuda Sheep

IfxKS – crossbreed Ile de France x Kołuda Sheep

The cholesterol content in meat, fat and giblets of lambs depending on fattening system [mg/100g]

| Genotype | Meat | | Cover fat | | Liver | | Lung | | Heart | | Kidney | |
|--------------|-------------|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| | x | v% | x | v% | x | v% | x | v% | x | v% | x | v% |
| IN (n - 6) | 48,0 | 36,5 | 51,8a | 27,7 | 223,7 | 35,5 | 698,2 | 22,5 | 58,8A | 32,8 | 205,7 | 33,8 |
| SIN (n - 24) | 46,0 | 33,5 | 76,4a | 36,1 | 248,4 | 33,5 | 617,0 | 32,2 | 35,5A | 35,6 | 200,0 | 28,4 |

AA - $P \leq 0,01$; aa - $P \leq 0,05$

IN – intensive fattening system

SIN – semi-intensive fattening system

The cholesterol content in meat, fat and giblets of lambs depending on roughage [mg/100g]

| Roughage | Meat | | Cover fat | | Liver | | Lung | | Heart | | Kidney | |
|--------------------|-------------|------|-------------|------|---------------|------|--------------|------|-------------|------|--------------|------|
| | x | v% | x | v% | x | v% | x | v% | x | v% | x | v% |
| Grass hay (n - 12) | 41,9 | 38,3 | 73,7 | 41,3 | 209,6 a | 26,8 | 560,3 | 34,8 | 38,7 | 37,8 | 193,6 | 29,9 |
| Pasture (n - 12) | 50,0 | 28,4 | 79,2 | 32,3 | 290,7a | 30,7 | 673,7 | 28,8 | 34,3 | 33,3 | 205,4 | 28,2 |

The cholesterol content in meat, fat and giblets of lambs depending on use of oil by-products [mg/100g]

| Genotype | Meat | | Cover fat | | Liver | | Lung | | Heart | | Kidney | |
|---------------|-------------|------|-------------|------|--------------|------|----------------|------|-------------|------|--------------|------|
| | x | v% | x | v% | x | v% | x | v% | x | v% | x | v% |
| RC (n - 12) | 47,0 | 34,4 | 82,6 | 33,0 | 250,3 | 43,9 | 513,0 A | 26,2 | 38,5 | 35,6 | 197,6 | 31,1 |
| DDGS (n - 12) | 44,9 | 33,8 | 70,3 | 39,5 | 246,3 | 17,6 | 721,0 A | 28,1 | 34,5 | 36,4 | 202,9 | 26,4 |

AA - $P \leq 0,01$; aa - $P \leq 0,05$

RC- Rape cake

DDGS - Dried Distillers Grains with Solubles

Statements:

- The tested tissues and organs differed in cholesterol content.
- The highest content of cholesterol was in the lung and in the liver and kidney.
- The lowest content of cholesterol was in meat and heart
- Breed origin did not affected on content of cholesterol.
- The method of fattening influenced on cholesterol content in external fat and in heart.
- Pasturing increased the cholesterol content in the liver
- The use of DDGS compared with RC, increased the cholesterol content in the lungs

Thank you for listening

