Abstract 18618
Session 31

Effect of lack of mineral supplementation on bone characteristics in beef calves

Carla Lazzaroni and Davide Biagini
Department of Agricultural, Forest and Food Science,
University of Torino, Grugliasco, Italy

AIM

Effect of **mineral supplementation** (dicalcium phosphate) on **performances** and **metacarpus characteristics** of fattening bulls of two breeds with different growing rate and slaughtered at two different age

MATERIALS AND METHODS

- **animals**: 16 Limousine (Lim) and 16 Holstein (Hol) fattening bulls
- **feed rations**: to meet the needs of animals for an increase of 1 kg/d, with (HM) or without (LM) a supplement of $CaHPO_4$ (1,5 % on feed)
- **rearing period**: 106-268 d
- **slaughtering age**: 18 or 24 month
- **animal data**: initial and final live weights, carcass weight, average daily weight gain (ADG), carcass yield (CY)
- **metacarpus measurements**: weight (W), length (L), middle circumference (C), wall thickness (T)
- **statistics**: ANOVA, according to treatment

ANIMAL PERFORMACES

	HM	LM	Lim	Hol	18	24
ADG (kg LW/d)	1.0	1.0	1.0	1.0	1.0	1.0
CY (%)	56	55	**59^A**	**51^B**	**54^B**	**57^A**

A, B: P<0.001

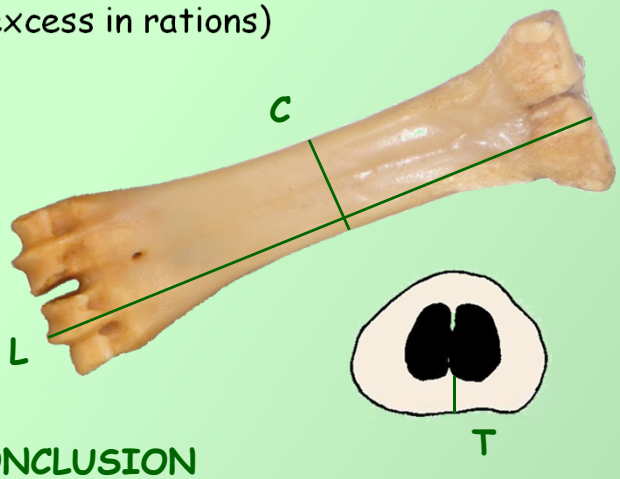
BONE MEASUREMENTS

	HM	LM	Lim	Hol	18	24
W (g)	493	453	452	497	**421^B**	**520^A**
L (mm)	239	228	**223^B**	**246^A**	**224^B**	**242^A**
C (mm)	118	117	**120^A**	**115^B**	**113^B**	**122^A**
T (mm)	6.6	6.2	6.1	6.7	**5.3^B**	**7.3^A**

A, B: P<0.001

IMPLICATION

- mineral supplementation **costs**
- **environmental impact**
- **phosphorus** is the most **critical** (excess in rations)



CONCLUSION

No negative effects of diet on:

- **health**
- **productive parameters**
- **bone measurements**

RESULTS

Animals

- **ADG** similar in all groups (only interactions diet-breed and breed-age)
- **CY** higher, as expected, in L than F and in older animals, showing also interactions (diet-breed and diet-age)

Metacarpus

- **W** heavier in older animals
- **L** longer in F than L as well as in older animals (with interaction breed-age)
- **C** longer in L than F and in older animals
- **T** thicker in older animals (with interaction breed-age)