

# Belgian Blue cattle are more susceptible to tibial fractures compared to other breeds

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## INTRODUCTION

- Generally, the **most common limb fractures** in cattle are accepted to be:
  - the **metacarpus and metatarsus** (approximately **50%**) and
  - the **tibia** (approximately 12%) (Anderson & St Jean, 2008).
- Recent studies show **divergent patterns**, divergence could depend on the cattle rearing system: (Feist et al, 2019)
  - 60.8% of all animals were injured in the **first day after birth**,
  - +- 60% of those were related to assisted calving devices
- Belgium: large majority of all beef cattle = **Belgian Blue Cattle Breed (BBCB)**. Almost all BBCB calves are born by elective **caesarean section** without obstetrical manipulation beforehand.

## GOALS

- Describe the **type of fractures** presented to the clinic for ruminants (Liège University)
- Determine **breed differences**

## MATERIAL AND METHODS

- **284 cases** of cattle with a limb fracture (above phalanges) between September 2013 and December 2021 (SAP)
- Additional information retrieved:
  - Type of fracture
  - Breed

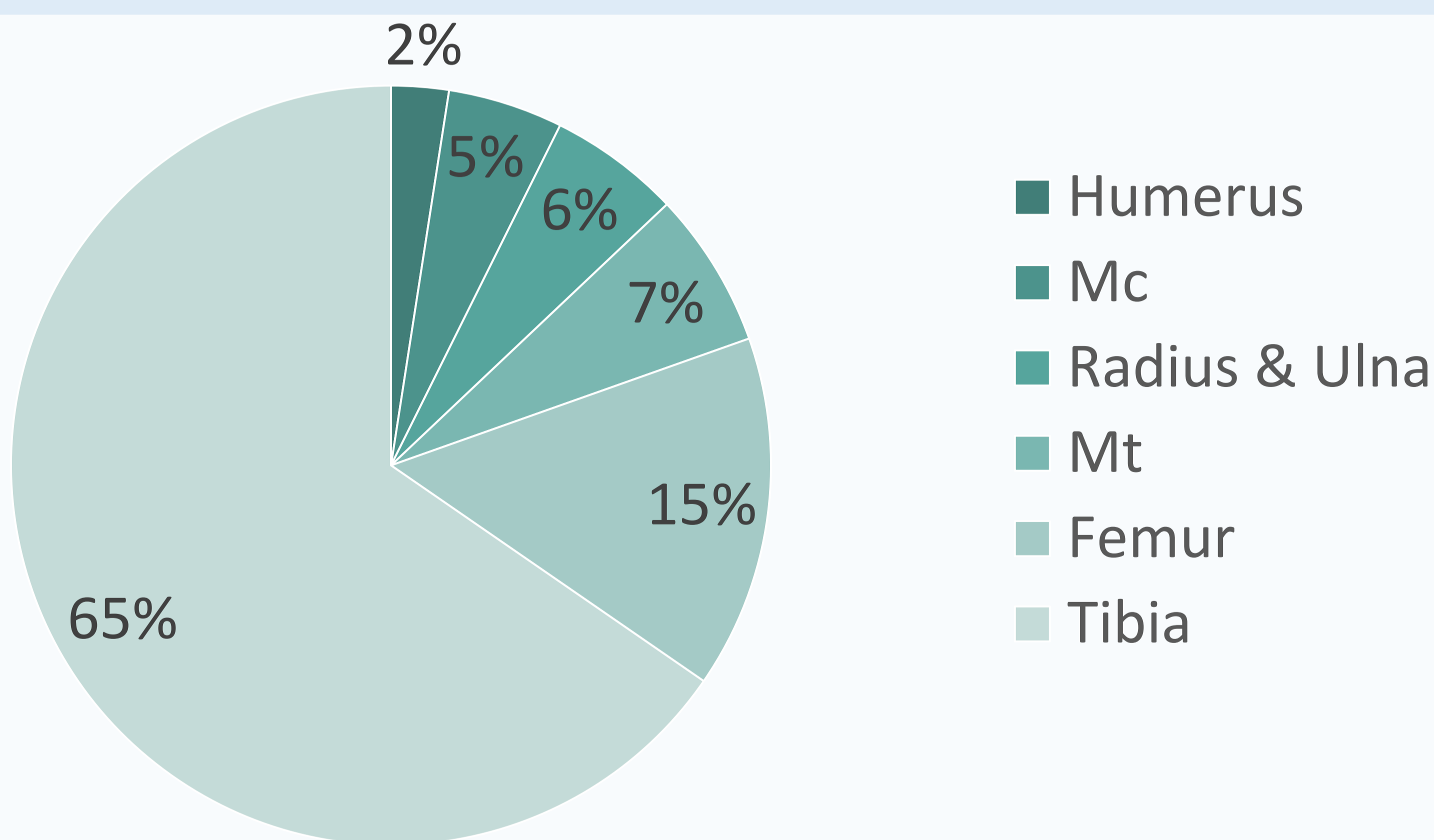


Figure 1: Whole dataset percentages of types of fractures

## RESULTS

- Over the whole dataset, **65%** (n=187) of all fractures were **tibial fractures**, while only 12% metacarpal (Mc) (n=14) or metatarsal (Mt) (n=19) fractures were observed. (Fig. 1)
- 243 animals (85.6%) were BBCB, only 41 animals were of a different cattle breed. (Fig. 2)
  - Mc and Mt fractures were significantly more present in the other cattle breeds (38,1%), compared to BBCB (7%) (Fig. 2) (**OR: 0.12; 95%CI [0.05-0.3]; p<0,00005**).
  - Comparatively, BBCB was significantly more prone to tibial fractures (n=170) (**OR: 2.15; 95%CI [1.05-4.54], p<0.03**).

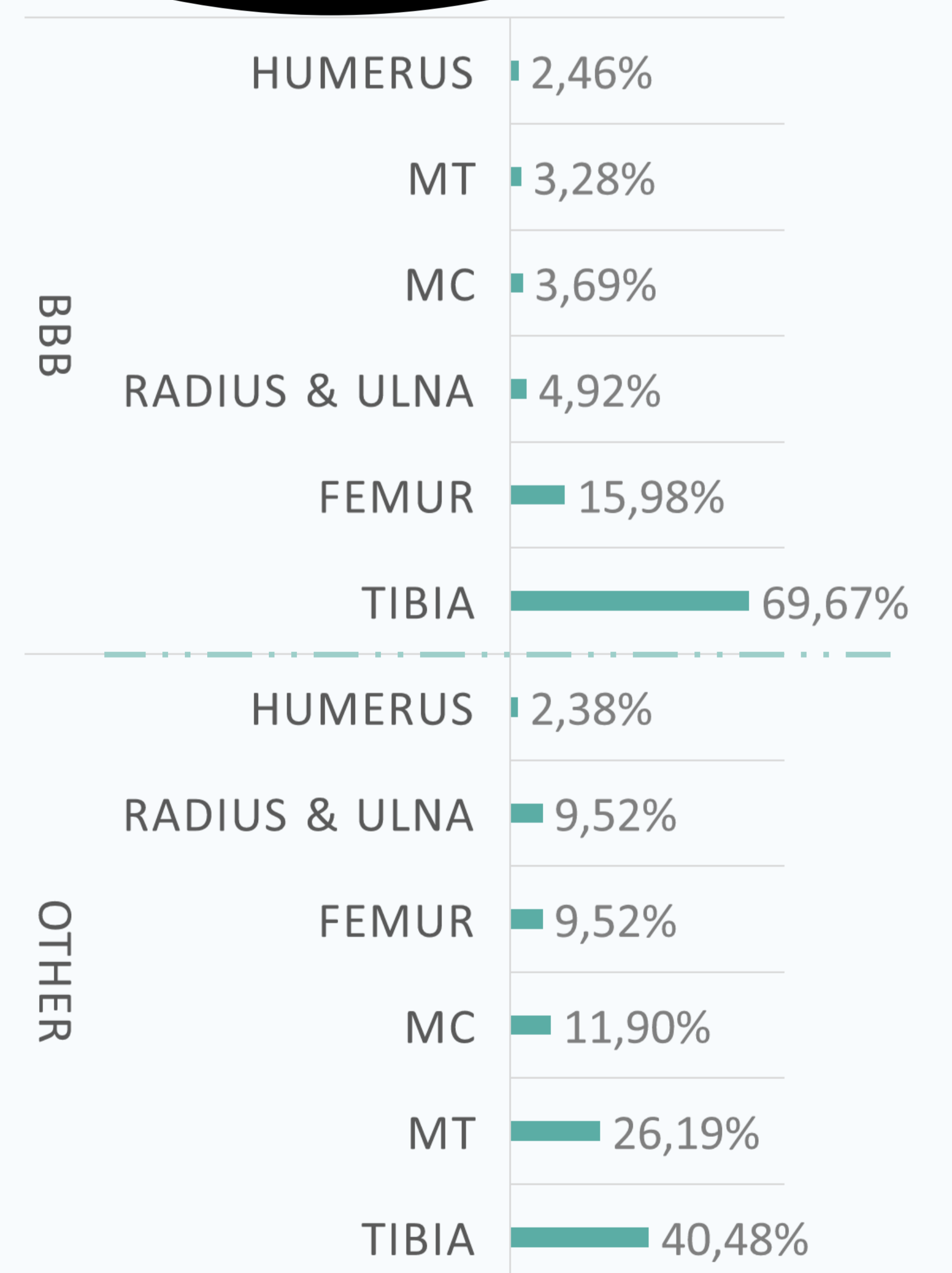


Figure 2: Proportions in BBCB compared to other breeds

## CONCLUSIONS

BBCB seem to be less prone to limb fractures generally linked to obstetric interventions. They are more at risk of tibial fractures, possibly due to the double muscling phenotype (muscle/bone ratio and muscles insertion) of the breed.