Abstract #375

RABBIT PHYSIOLOGICAL RESPONSE TOWARDS PRESLAUGHTER FEED WITHDRAWAL

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Introduction

Prior to slaughter, animals are currently fasted in order to reduce transport-related sickness and microbial contamination during transport and evisceration [1]. Preslaughter fasting is commonly used in the industry and is species dependent. Fasting in pigs and poultry is well documented, but not to the same extent in rabbit. If the fasting time is too long, it can lead to poor welfare conditions and high pH meat [2]. The objective was to determine for rabbit the optimal fasting time and the physiological response without the effect of transportation to a slaughter facility.

Methods

Animal housing and feeding. A total of 72, 35-day-old weaned Grimaud breed rabbits were homogeneously allocated by weight in 12 cages with 3 males and 3 females per cages in order to reflect commercial practices. Temperature was set at 20°C and humidity level at 37%. Rabbits were fed up to 2.5kg live body weight (4 weeks), a commercial feed *ad libitum,* with free access to water.

Slaughter. One group was sacrificed every 2-3h in a separated room by excision of the jugular vein after proper stunning using a non penetrating captive bolt pistol. Blood lactate was measured using a lactate scout analyzer (EKF Diagnostics, Lactate scout +, Cardiff, Wales, UK) at exsanguination. Full stomach was collected and weighted. A sample of the *Longissimus lumborum* (LL) muscle was also harvested and immediately frozen at -80°C for the analysis of the glycolytic potential (GP).

Statistical analysis. To determine the effect of fasting time, data were assessed by analysis of the variance (ANOVA) using the MIXED procedure of SAS software. Significant difference was declared at $P<0.05$.

Results

Blood lactate was only affected at 0h ($P=0.051$; Fig 1). Since this is a short-term stress response [3], this high concentration might be explained by the disturbance, at the beginning of the fasting period, when the feeders were removed. Blood lactate remained relatively stable for the other groups.

Stomach weigh decreased as the fasting time increased ($P<0.001$; Fig 2). Reducing stomach volume is important to prevent the release and spread of microbial contamination at evisceration.

The GP reached a maximum of 152µmole/g between 3-6h ($P<0.001$; Fig 3). During the fasting period, GP was lower and higher than the reported values for pale, soft and exudative (PSE) pork (161µmole/g; [4]) and dark, firm and dry (DFD) beef (71µmole/g; [5]), respectively.

Microbial shedding (Proteobacteria, *Enterobacteriacea*, etc.) related to fasting is currently under study.

Conclusion

Our results indicate that, without the effect of transportation to a slaughter facility, fasting does not have a major effect on blood lactate concentration and *Longissimus lumborum* GP. Optimal fasting period for rabbit is estimated at 12±2h.

ACKNOWLEDGEMENTS

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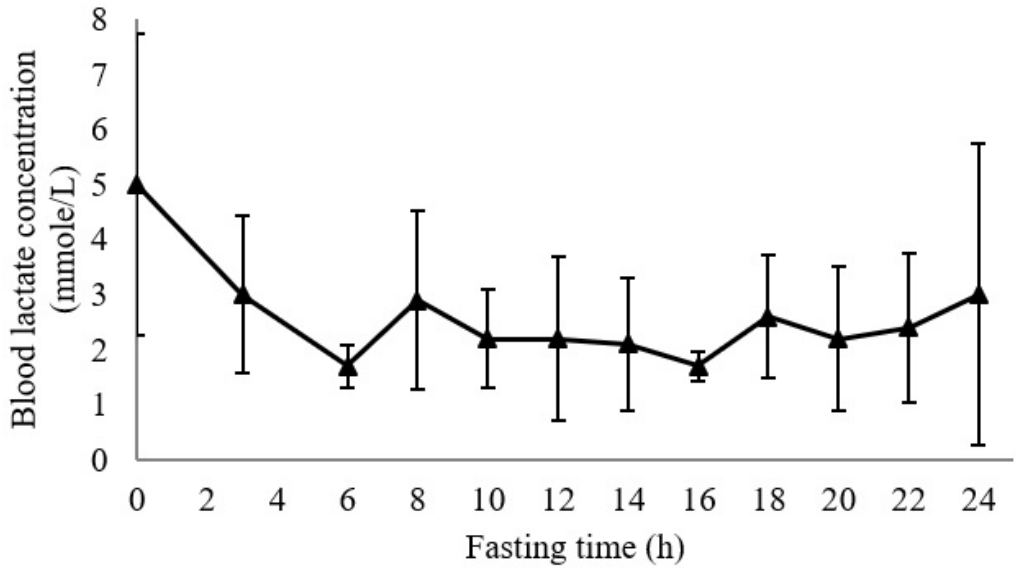

FIGURE 1. Blood lactate concentration according to the fasting time.

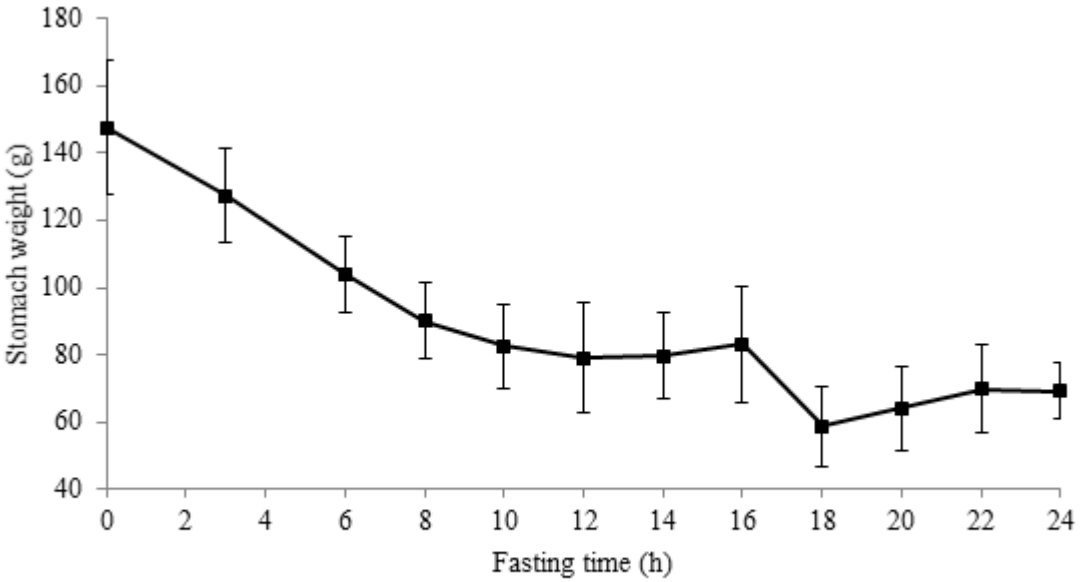

FIGURE 2 Rabbit stomach weight according to fasting time.

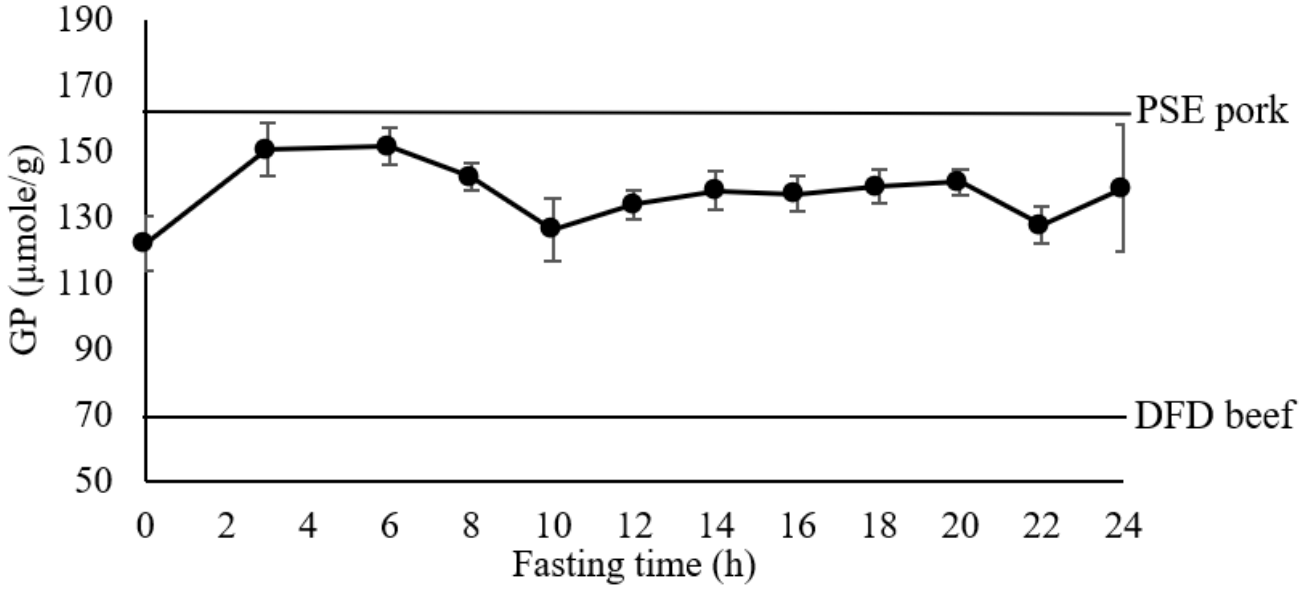

FIGURE 3 Longissimus lumborum glycolytic potential (GP) according to fasting time.