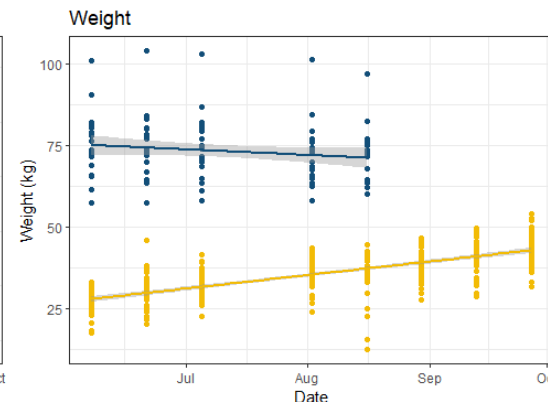
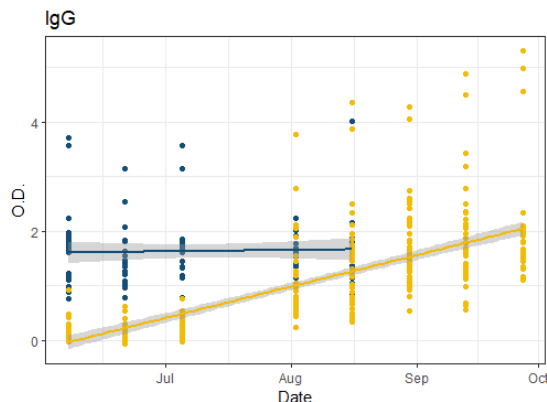
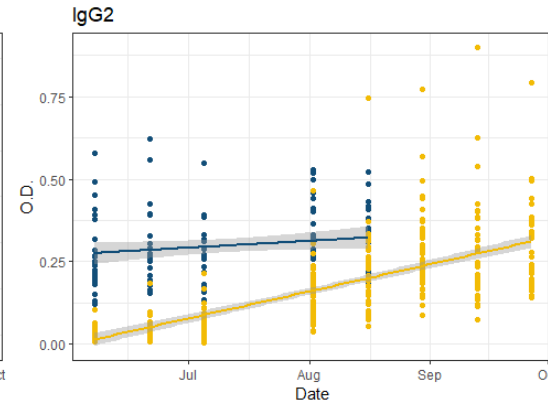
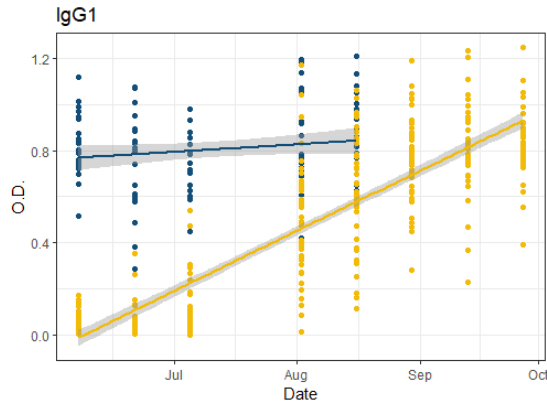
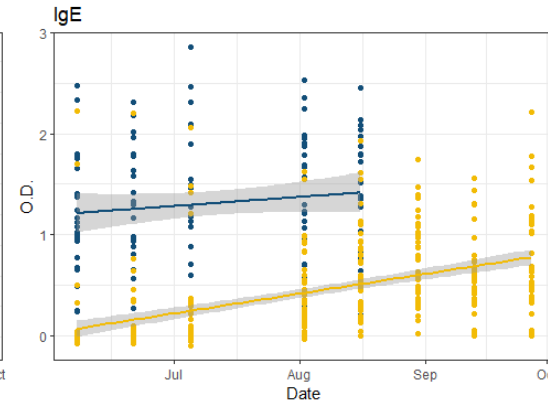
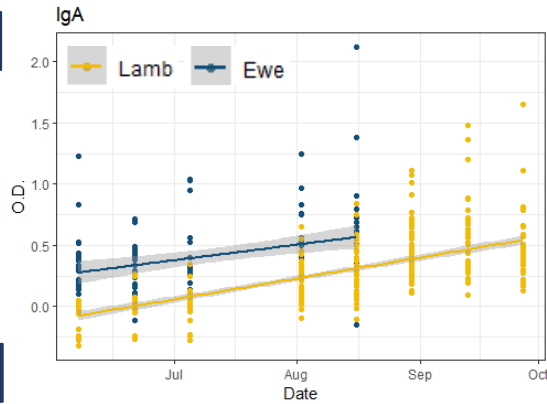


## Introduction

Following weaning naïve lambs are exposed to parasites as they graze on contaminated pasture. It is important to determine when the lamb's immune system starts to mature and can produce high levels of nematode specific antibodies, as they are at a higher risk of mortality or reduced growth until this happens.

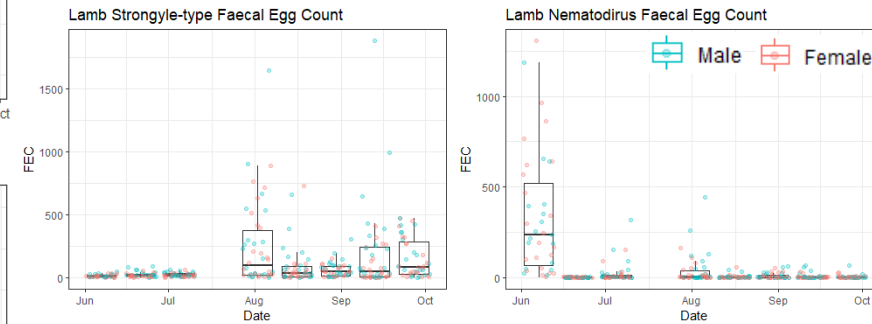
## Methods

- 24 Texel x mule ewes and their twins (25 Female, 23 Male) were used in this study. All lambs were born between the end of March and mid-April
- Animals were divided into a high and a low parasitology group
- Faecal and blood samples were taken every 2 weeks between June and September 2021 for the lambs and between June and August 2021 for the ewes
- The blood samples were allowed to coagulate at room temperature and then were spun down to obtain the serum
- Antibody ELISAs for IgA, IgE, IgG, IgG1 and IgG2 were performed using somatic L3 *Teladorsagia Circumcincta* antigens and are expressed as the corrected normalised O.D.
- Egg counts were done for strongyle-type and nematodirus eggs using a modified salt-flotation technique



## Results and Discussion

- The lambs showed an increase in strongyle eggs in August with a slight decrease towards the end of the trial (**below**), while the sampling missed the earlier peak of nematodirus eggs. This was also reflected by the increase in specific antibodies for all of the antibody isotypes



- No statistically significant difference between the high and low parasitology groups or between the male and female lambs could be observed so all analysis was carried out using both groups combined. This suggests that the difference in antibody response between adult males and females must develop during adulthood
- Linear models of the lambs and ewes O.D. over time were used to predict the average age at which lambs reach similar antibody levels to the ewes (**left**). This was 375 days for IgA, 459 days for IgE, 215 days for IgG, 228 days for IgG1 and 254 days for IgG2
- Our results show that while lambs IgG, IgG1 and IgG2 response develops early in life, IgA and IgE response develops much slower

## Acknowledgements

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