

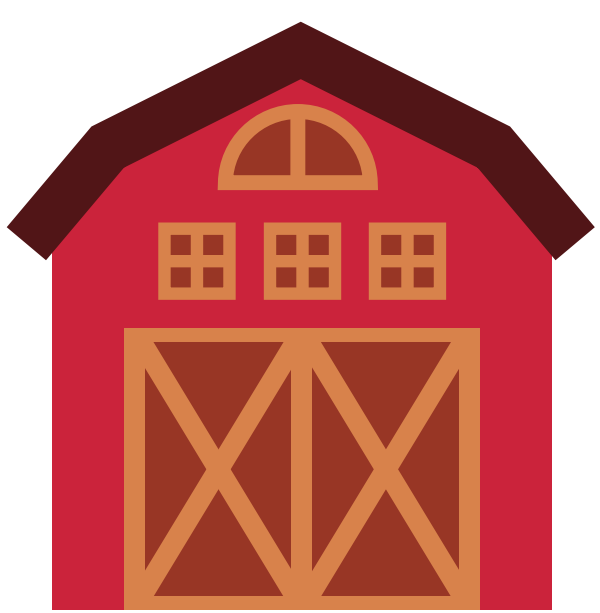
# NEONATAL BIOMARKERS FOR FIRST LACTATION PERFORMANCE AND HEALTH



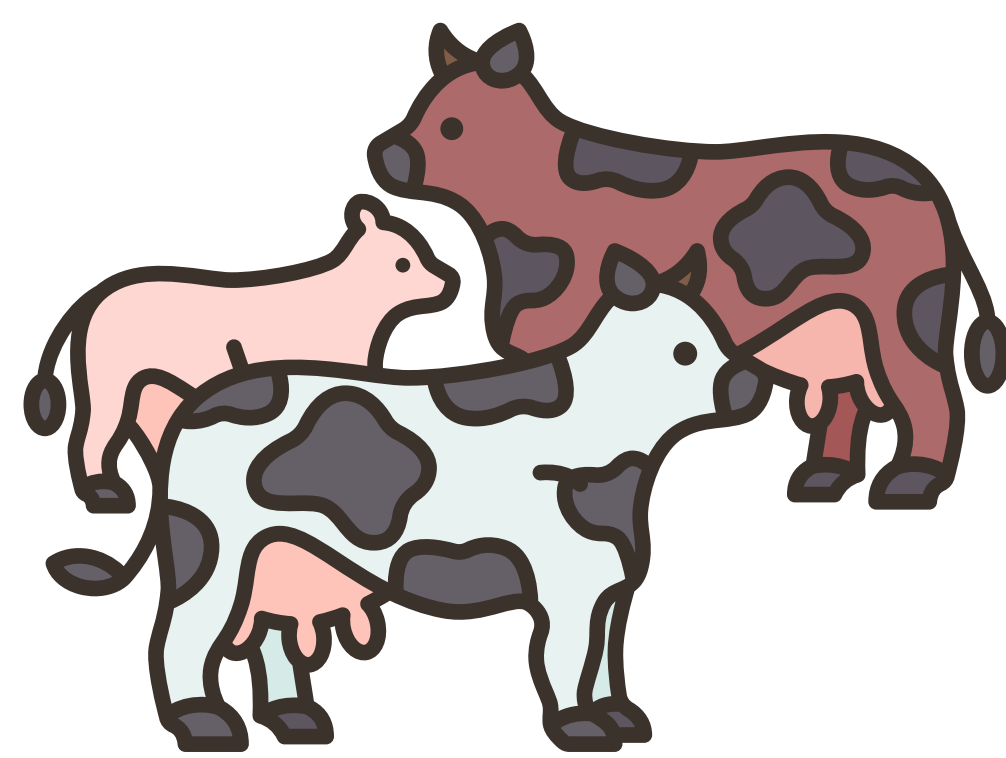
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**SAA** serum amyloid A  
**IL-6** interleukin-6  
**Hp** Haptoglobin  
**TNF- $\alpha$**  tumour necrosis factor alpha  
**ADWG** average daily weight gain  
**AFC** age at first calving

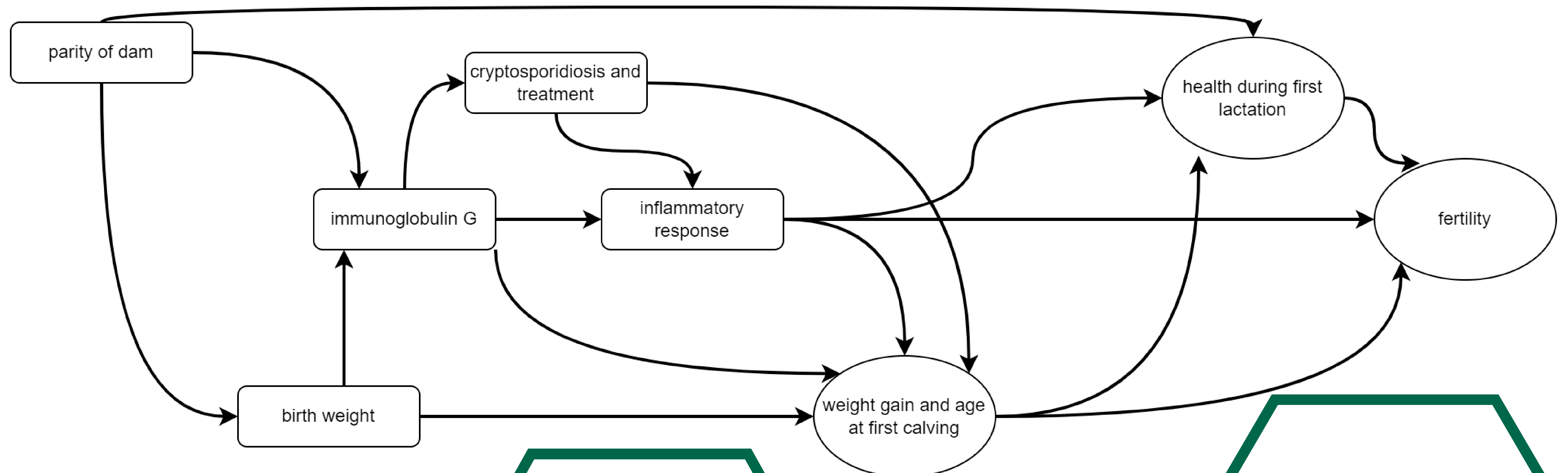
112 female calves



One dairy farm



a natural outbreak of cryptosporidiosis



**Hp** negatively associated with **ADWG** at one year  
0.027 g/day per mg/L  
73 g difference between lowest and highest **Hp**

**SAA** positively associated with **AFC**  
0.17 days per mg/L  
61 day difference between lowest and highest **SAA**

**IL-6** and **TNF- $\alpha$**  of the first week positively associated with **reproductive problems**  
OR 1.05 and 1.001, respectively

**SAA** and **Hp** positively associated with **number of days open**  
IRR 1.002 and 1.0002, respectively

**FIRST WEEK: HEALTH**  
**SECOND/THIRD WEEK: PRODUCTION**

