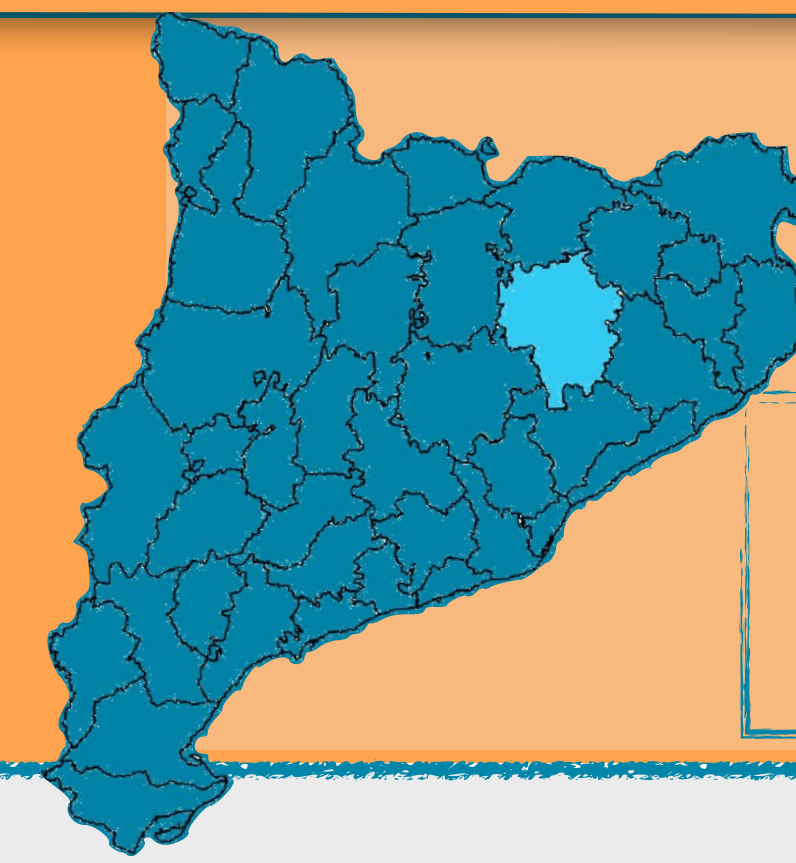


## OBJECTIVES

Determination of lactic acid bacteria in cow's colostrum and milk, and the faeces of their calves → *Comparison of the isolated microbiota*



Osona

3 dairy farms

115 colostrum and milk samples  
31 faeces samples

## INTRODUCTION

The bacteria genera most frequently isolated are:



Kocuria

Staphylococcus

Streptococcus

Lactic acid bacteria → *Bifidobacterium*, *Lactobacillus*, *Lactococcus* and *Leuconostoc*

PROBIOTICS ??

NEONATAL CALF  
DIARRHEA



*Lactobacillus*

*Bifidobacterium*

*Escherichia*

*Shigella*

Agar Man Rogosa Sharpe (MRS)

Incubation conditions

Identification methods

Different genera of lactic acid bacteria

Specific for *Bifidobacterium* spp.

Agar Man Rogosa Sharpe  
with cysteine (MRS+C)

Aerobic conditions

Microaerophile conditions

Anaerobic conditions

37°C  
24 - 48 h

Gram Stain  
Catalase and Oxidase Test  
API 50 CHL

## MATERIALS AND METHODS

## RESULTS

*Bifidobacterium* spp. — *Lactobacillus* spp. and *Lactococcus* spp.

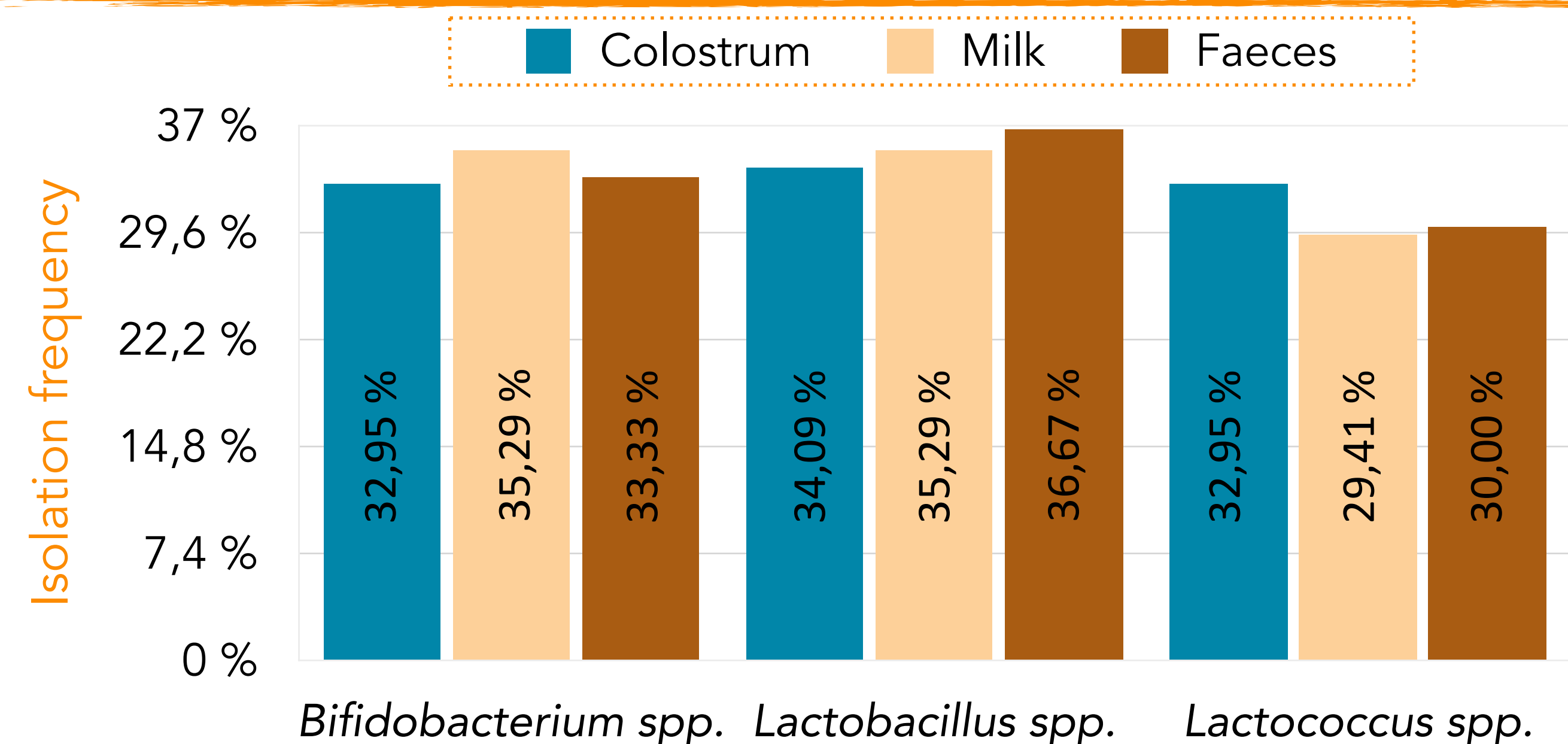
*Lactobacillus plantarum*

*Lactococcus lactis*

Colostrum = Milk

Faeces → Probiotics' features

Meconium → Possible maternal origin



Lactic acid bacteria genera

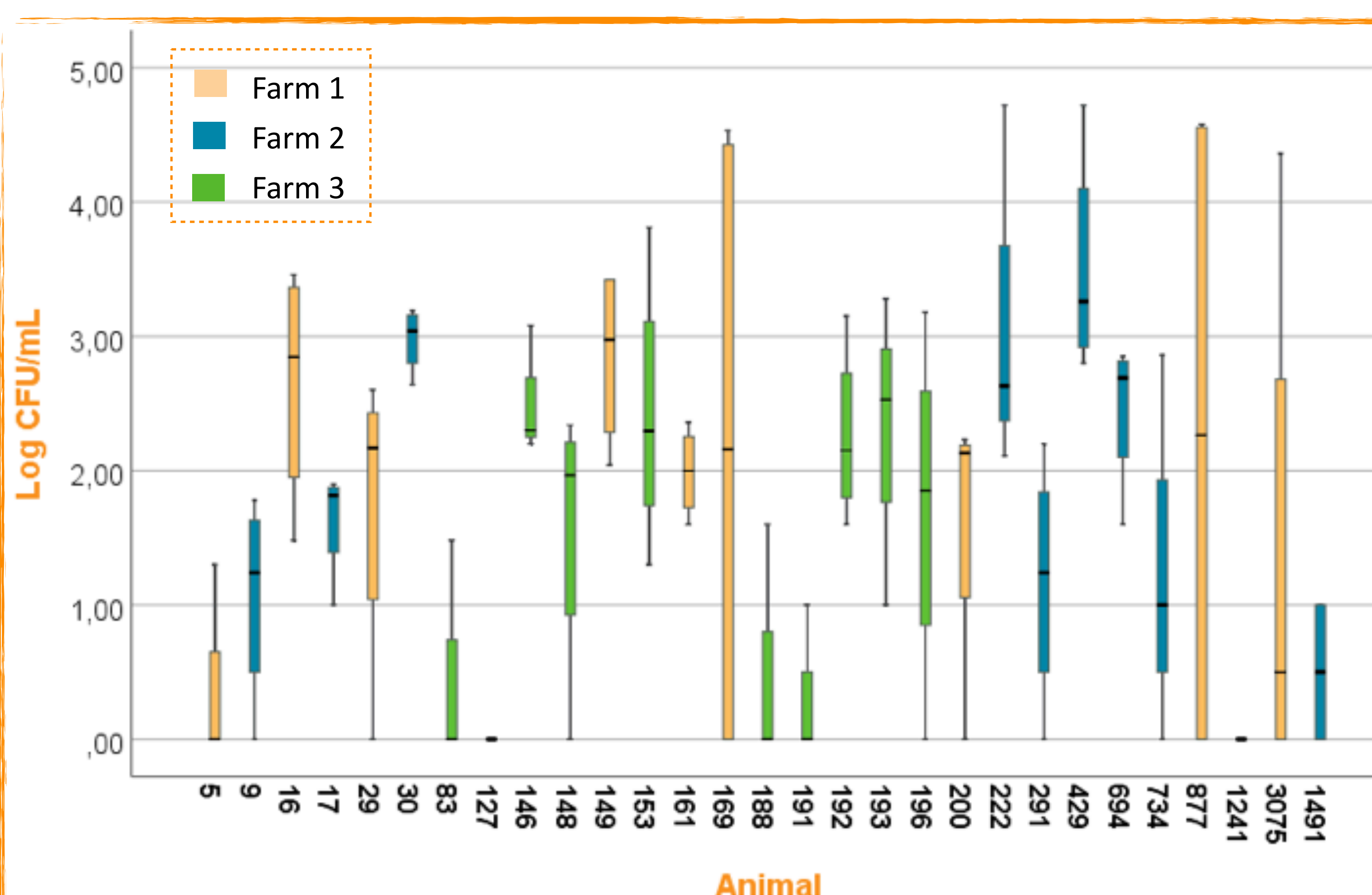
Graphic 1. Lactic acid bacteria genera isolated in colostrum, milk and faeces samples

*Bifidobacterium* spp. is more frequently isolated in milk samples, but its counts are higher in colostrum

Colostrum and milk samples: High variability between cow's quarters and between individuals

No many differences between farms

Faeces samples: High variability between individuals



Graphic 2. Representative box plot of cows' quarters count of each individual, sorted by farms

## CONCLUSIONS

- \* The genera isolated are *Bifidobacterium* spp., *Lactobacillus* spp. and *Lactococcus* spp. No many differences between samples and farms
- \* The counts of the genera *Bifidobacterium* are higher in colostrum while the counts of *Lactobacillus* and *Lactococcus* are higher in milk
- \* The presence of the same genera between meconium and faeces supports the hypothesis of a non sterile gastrointestinal tract of the neonate
- \* Exists a marked variability between individuals and cow's quarters. For a representative sample of the individual, should be sampled each of the quarters