

# Farm animal proteomics 2014

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# A proteomics study on colostrum and milk proteins of the two major small ruminant dairy breeds from the Canary Islands on a bovine comparison perspective

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## Introduction

Colostrum is the first secretion from the mammary gland after parturition and it starts changing after birth becoming mature milk (Hernández-Castellano *et al.*, 2014a; Lérias *et al.*, 2014). As newborn ruminants are considered agammaglobulinemic (calves) or hypo-gammaglobulinemic (lambs and kids) at birth (Castro *et al.*, 2009; Hernández-Castellano *et al.*, 2014b), colostrum feeding is very important to provide protection against infections (Kramer *et al.*, 2001). After the colostrum intake period, new-born ruminants must be fed with milk, however, there is an increasing number of high production dairy farms (Lérias *et al.*, 2013), such as the large-scale small ruminant dairy farms in the Canary Islands (Spain), where artificial rearing is chosen in order to increase the amount of milk available for processing (Napolitano *et al.*, 2008). This alternative feeding source has to be carefully selected, because many factors can modify the final components concentration of the ruminant milk, such as breed (Torres *et al.*, 2013) or milking frequency (Hernández-Castellano *et al.*, 2011), affecting the final performance and even the survival of the young ruminant. In this work we analyzed colostrum and milk differences between the two most economically relevant dairy ruminant species breeds from the Canary Islands: Canarian dairy sheep and Majorera goat. In order to obtain a comparison term, we have also contrasted our results to those of colostrum and milk of the most found ruminant species and breed across the globe: Holstein Friesian dairy cattle.

## Material and methods

### Samples collection and treatment for analysis

Six Holstein-Friesian cows, six Canarian dairy sheep and six Majorera goats in their second lactation were used in this experiment. Animals were fed following recommendations of the *Institut National de la Recherche Agronomique* (INRA, 2007). The experiment took place at the experimental farm of the Veterinary Faculty of the Universidad de Las Palmas de Gran Canaria (Spain) in spring.