

BLOOD BACTERIAL PROFILE OF GOATS (*Capra hircus*) IN NORTHERN, MEXICO

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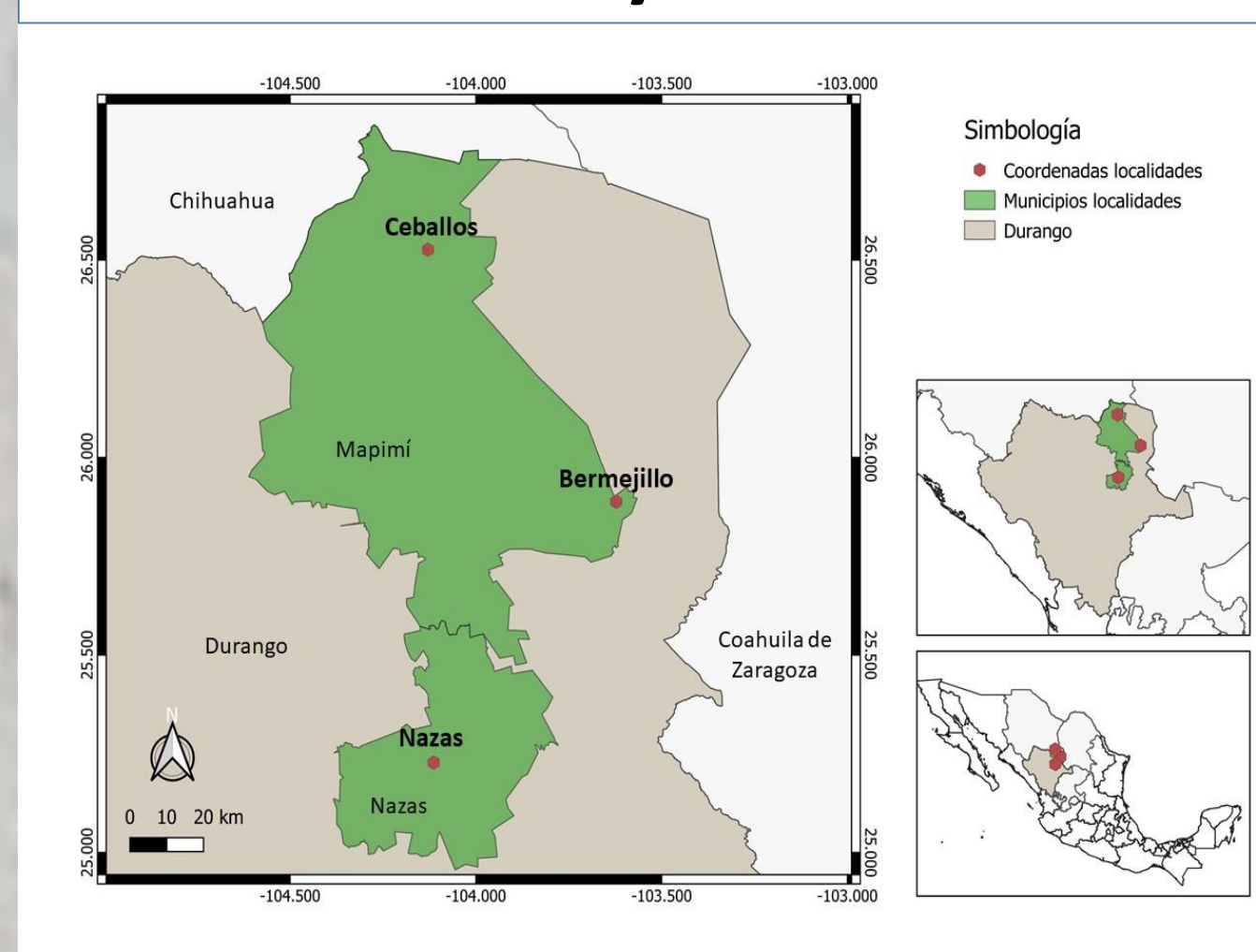
INTRODUCTION AND OBJECTIVE

In northern Mexico goat production is an economic activity developed on a large scale. In order to expand the microbiological knowledge of this ruminant and provide a bacteriological reference useful in veterinary diagnoses, the composition and abundance of the bacterial taxa present in the blood of goats in this region was analyzed using massive next-generation sequencing.

METHODS

In 2021, blood from 20 goats was collected at Ceballos, Bermejillo and Nazas, Durango, Mexico. DNA was extracted from each sample and the V3-V4 region of the 16s rRNA gene was amplified using Illumina.

Study areas



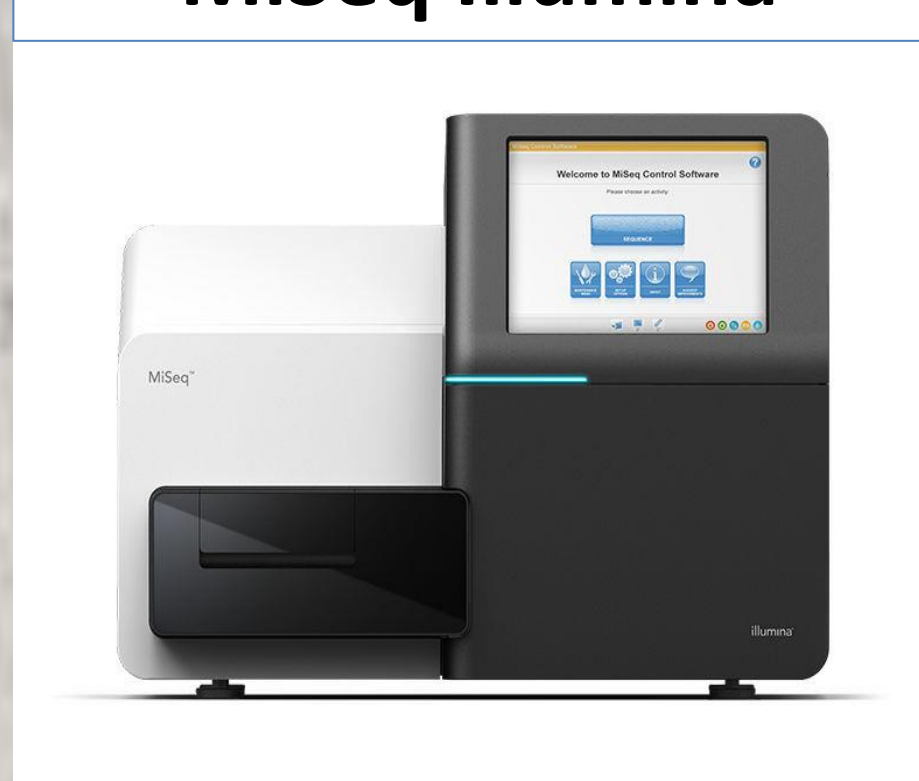
Blood sample collection



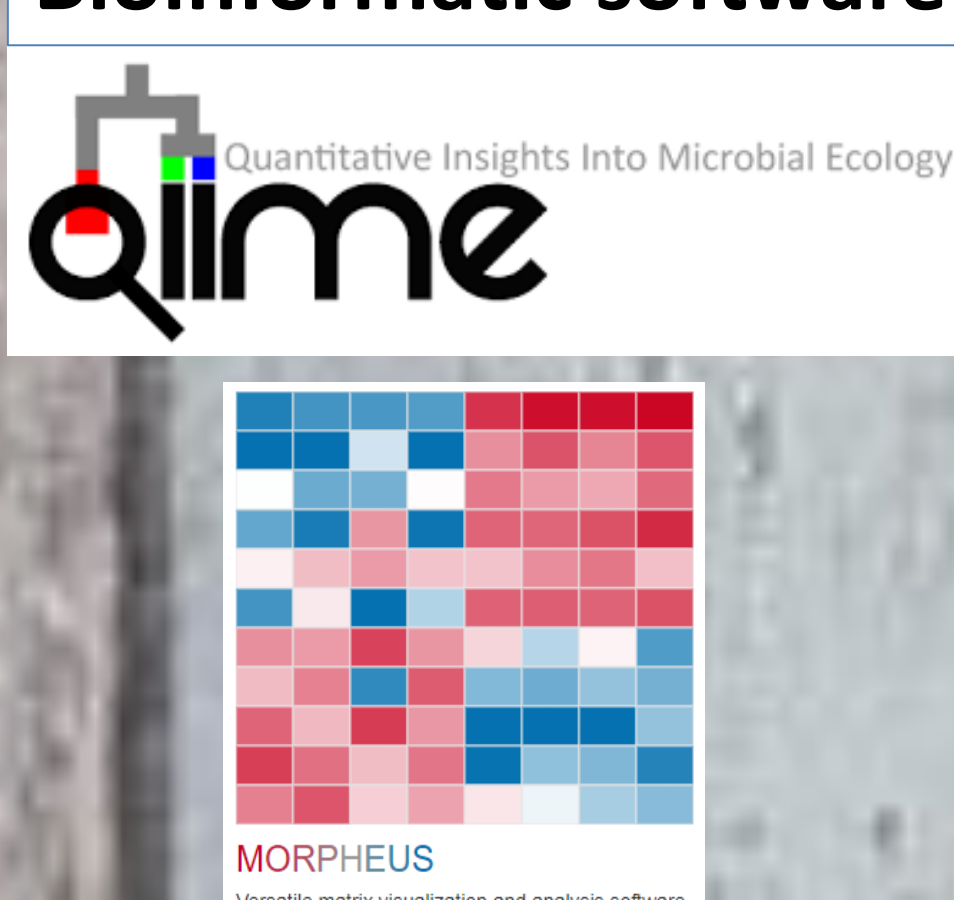
DNA extraction kit



MiSeq Illumina



Bioinformatic software



RESULTS AND DISCUSSION

A total of 31 phyla, 80 classes, 170 orders, 407 families, 1,523 genera and 2,988 bacterial species were recorded (597 known, 1,036 non-cultivable and 1,355 unknown) were recorded.

Firmicutes (33.7%), Proteobacteria (20.2%) and Tenericutes (15.3%) were dominant phyla.

Mycoplasmataceae (14.8%), Bacillaceae (12.2%) and Ruminococcaceae (6.3%) were dominant families.

Eleven species of *Mycoplasma* were reported (*M. ovis*, *M. haemobos*, *M. iowae*, *M. muris*, *M. wenyonii*, *M. haemovis*, and the rest unknown); they are frequently present in goats, however, they only cause disease when the animals' immunity is compromised (goats in this study were apparently healthy).

Bacillaceae comprise environmental bacteria and Ruminococcaceae are highly abundant in the rumen of goats.

Potential bacterial pathogens for goats founded in its bloodstream were *Mycoplasma ovis*, *M. haemovis*, *Coxiella burnetii*, *Brucella* sp., *Clostridium perfringens* and *Fusobacterium necrophorum*. This information on goats joins a long list of research reporting bacteria in the blood of healthy animals, including mice, chickens, cats, dogs and humans. It represents a first bacteriological baseline of what can be found in the blood of healthy goats in this region of Mexico.

Figure 1. Heatmaps representing the relative abundance (%) of the bacterial taxa recorded for blood samples of goats (*Capra hircus*) in the Comarca Lagunera de Durango, México (phylum, family, and genus levels).

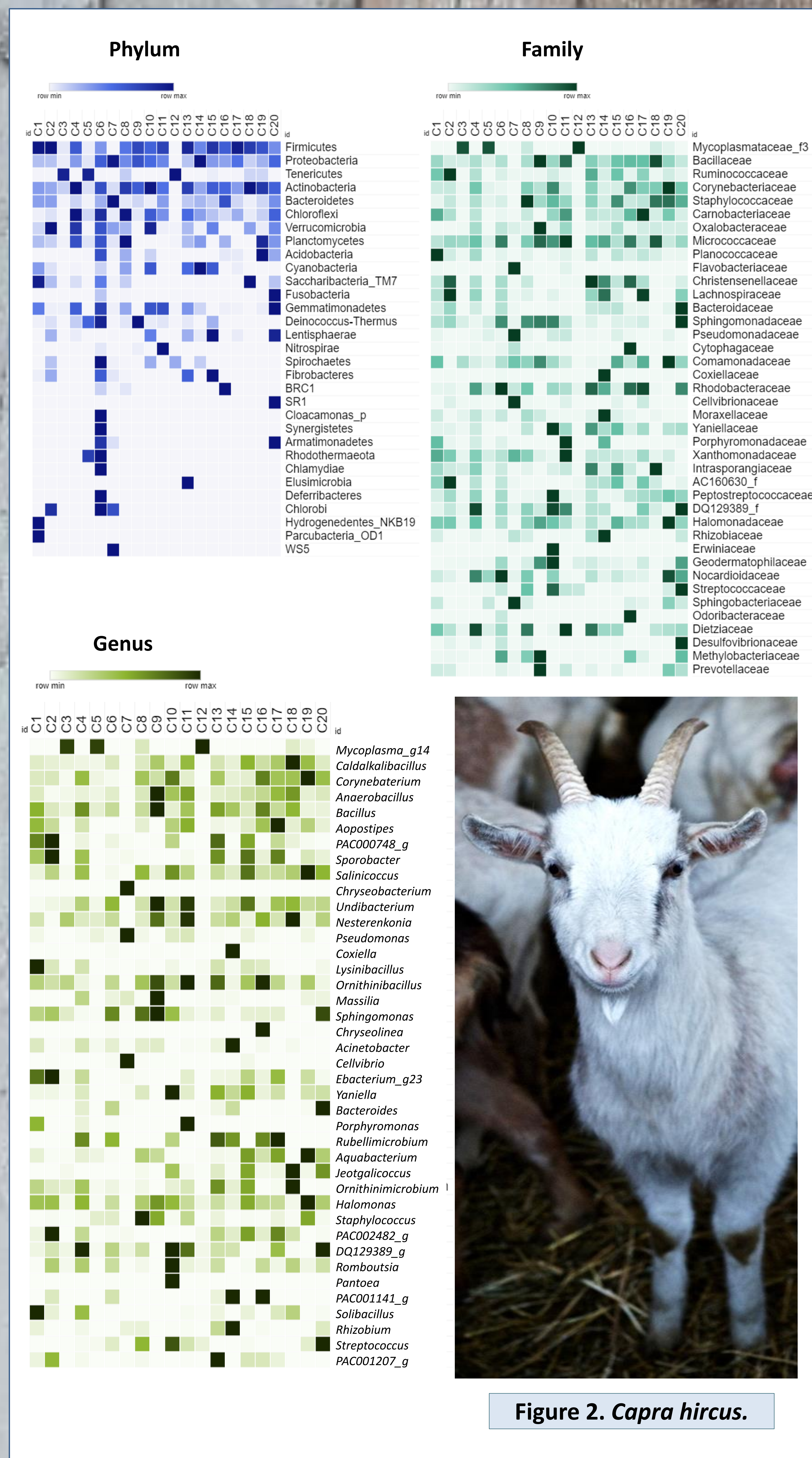


Figure 2. *Capra hircus*.

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