**Culture collection management and setting up of methodology of bacterial conservation**

Microorganisms are fundamental in food, agriculture, industry, medicine, veterinary and biotechnology. The identification, characterization and preservation of microbial cultures are essential not only for the maintenance of natural ecosystems but also for research purposes and biotechnological exploitation. Therefore, culture collections are crucial for the conservation of microbial biodiversity. Preservation methods and customized protocols must be achieved for specific microorganisms by setting different parameters, e.g., suitable suspension media, cells concentration, cryoprotectant, freeze-drying procedures, etc. Also, the cataloguing and the history of the maintained strains are important for better describing all the potentiality of the strains. Finally, the checking of the state of purity and “health” of microbial strain is fundamental to assure a long life of the culture collection.

In the Department of Agricultural and Food Sciences the BUSCOB collection is hosted. This collection comprises about 9000 freeze dried strains mainly belonging to bifidobacteria. Unfortunately, about half of the bacterial strains dated from 30 years old and have never been revitalized to date. This means that there is a serious risk to lose a lot of bacterial cultures.

The objective of the present research activity will be i) improving the catalog of the strains present in BUSCOB; ii) setting up of the best procedure to revitalize strains dated from 30 or more years ago.

Activities planned:

Updating of the database of BUSCOB collection.

Collecting all the information from the literature about revitalization of freeze-dried cultures.

Setting up of the best conditions to optimize the growth of freeze dried cultures.