Responsible use of antibiotics in Swine Reproduction: alternative methods to decrease bacterial contamination of A.I. doses

INTRODUCTION

Essential oils (EOs) are products of the secondary metabolism of aromatic plants and are complex mixtures of several compounds. EOs show a wide variety of biological activities widely exploited in both Human and Veterinary Medicine. The pharmacologically active substances within EOs also show toxic effects when tested on different cell including human spermatozoa. Cytotoxicity studies on swine spermatozoa have two main outcomes: first, the identification of a cost-effective screening method for EOs evaluation in general, and then a direct application in reproductive medicine as alternative to the use of Antibiotics in artificial insemination (A.I.) doses.

Thanks to the collaboration with dr. Maurizio Scorzelli (APA-CT, Forlì) we identified four Essential oils with possible antibacterial effects:
1) Lavandula hybrida (Lq) 3) Corydithamus capitatus (Cc)
2) Rosmarinus officinalis (Ro) 4) Melaleuca alternifolia (Ma)

AIM

The aim of the phase I is to evaluate the dose-dependent effects of some essential oils on the main morpho-functional parameters of swine spermatozoa, in order to identify the highest dose, for each oil, that does not interfere with the quality of ejaculates. In phase II, the previously identified dosages will be tested for their antibacterial proprieties.

PRELIMINARY RESULTS

As of now 2 Eos, Coridithamus capitatus (Cc) and Rosmarinus officinalis (Ro), were tested on three ejaculates (n=3) collected from the same boar. The data regarding the acrosome status are currently under evaluation. The pH remained stable (6.8±0.1) throughout all of the experimental trials, thus it is not reported in this section.