



Czech University of Life Sciences Prague

**Faculty of Agrobiolgy,
Food and Natural Resources**

Study programme: **General Animal Science**

Department of: **Microbiology, Nutrition and Dietetics**

Supervisor: **Eva Skrivanova, skrivanovae@af.czu.cz**

Co-supervisor: **Pavel Novy**

Topic: Natural-derived antibacterial compounds and their interactions with antibiotics

Hypotheses:

Natural antibacterial compounds will interact with antibiotics in certain level (antagonism, additive effect, or synergism), not only in vitro, but also in biofilms, or in animal model.

Summary:

The emerging need of new antibacterial compounds is one of the crucial consequences of increasing antibiotic resistance, not only in human and veterinary medicine, but also in animal feeding. One of the examples is multiresistant *Staphylococcus aureus* and its importance, addressed by EU authority. In our previous experiments, the interaction between lauric acid and oxacilin were observed as antagonism. This is a very extraordinary finding, that merits further investigation. The aim of the thesis will be to determine the effect of interaction between lauric acid and oxacilin in biofilms, following by other natural derivatives and antibiotics. Also the model animals can be used (mice, rats). New antibacterials and antibiotics will be tested as the output of the student's literature investigation, that will take place at the beginning of his/her study. In vivo experiments will take place at the Institute of Animal Science in Prague.

Source of: Institutional support of Institute of Animal Science (Ministry of Agriculture)

In Prague, date 19.3.2018

signature