

# ABSTRACT

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**Title of Diploma thesis:** The effect of hop on the growth of facultative pathogenic bacteria

**Background:** The aim was to determine the sensitivity of selected strains of anaerobic bacteria (*Bacteroides fragilis*, *Clostridium perfringens*, *Clostridium difficile*) to compounds isolated from hop extract ( $\alpha$ -bitter acids,  $\beta$ -bitter acids, xanthohumol).

**Method:** To determine the minimum inhibitory concentration (MIC) of anaerobic strains used in the macrodilution method, known as Schaedler Broth, to which were added isolates from hop extract. Minimal bactericidal concentration (MBC) was determined at Schaedler blood agar and Columbia blood agar.

**Results:** The research carried out demonstrated inhibitions within all the selected strains. The measured concentrations of MIC and MBC moved subsequently within the ranges:

$\alpha$ -bitter acids 1024 - 128 mg/l

$\beta$ -bitter acids 527 - 4 mg/l

xanthohumol 128 - 8 mg /l

**Conclusion:** The results obtained showed xanthohumol to be the best. All strains tested showed low and stable xanthohumol MIC and MBC values. From the bitter acids, only beta acids reached low MIC and MBC values, and only for strains of *C. difficile*.