

# THE FACULTY OF FOOD SCIENCE

## FOOD ENGINEERING

### TECHNICAL MICROBIOLOGY LABS

#### **LABS week 1** April 7, 2023

Introduction to the lab and the metabolism, physiology, and growth characteristics of bacteria present in food: Macro- and microscopic observations and conclusions.

#### **LABS week 2** April 14, 2023

Effects of physical and chemical factors on the growth and survival of microbes, such as temperature, pH, water activity, UV, antimicrobial agents (Microbiological testing).

#### **LABS week 3** April 21, 2023

Microbiological testing results and conclusions.

Food fermentation: designing fermented food beverages (Microbiological testing).

#### **LABS week 4** April 28, 2023

Microbiological testing results and conclusions.

Environmental microbiological monitoring of the food processing environment: surface, personnel hands, air, and water sampling and contamination detection (Microbiological testing).

#### **LABS week 5** May 5, 2023

Microbiological testing results and conclusions.

Bacterial biofilms: Efficacy of commercial sanitizers used in food processing facilities for inactivation of bacterial Biofilms (Microbiological testing).

#### **LABS week 6** May 12, 2023

Microbiological testing results and conclusions.

Detecting the microbial load on food contact surfaces with the use of rapid *in situ* technique: microscopic observations and remarks.

**Final (written) test from the technical microbiology course content.**

#### **LITERATURE**

Doyle M.P., Steenson L.R., Meng J. (2013) Bacteria in Food and Beverage Production. In: Rosenberg E., DeLong E.F., Lory S., Stackebrandt E., Thompson F. (eds) The Prokaryotes. Springer, Berlin, Heidelberg.

USDA/FSIS, 2012. Introduction to the Microbiology of Food Processing. Small Plant News Guidebook Series.

Chmielewski R.A.N., Frank J.F., 2003. Biofilm formation and control in food processing facilities. Comprehensive Reviews in Food Science and Food Safety 2:22-32.

Myszka K., Czaczyk K., 2011. Bacterial biofilms on food contact surfaces - a review. Pol. J. Food Nutr. Sci., 61:173-180.

Olszewska M., 2013. Microscopic findings for the study of biofilms in food environments, Acta Biochimica Polonica 60:531-537.

Students choice, Based on own selection or supervisor advice.