PRESENTATION

INNOVATIVE TECHNOLOGIES FOR SUSTAINABLE AGRICULTURE: THE RESPONSE OF PLANTS TO SEED PROCESSING WITH COLD PLASMA, VACUUM AND ELECTROMAGNETIC FIELD

BY **PROF. DR. VIDA MILDAŽIENĖ**
(VYTAUTAS MAGNUS UNIVERSITY)

The results of the research on the pre-sowing seed treatment with physical stressors, such as cold plasma, vacuum and electromagnetic field and their relevance for application in sustainable agriculture will be discussed in the presentation. Long term field observations have revealed significant effects of seed processing besides stimulation of seed germination:
(i) effects on the growth of perennials persist at least for 6 years;
(ii) significant increase of plant biomass production and seed yield can be achieved;
(iii) changes are induced in the secondary plant metabolism.

The latter effect can lead to increased plant fitness and stress resistance including the improved defense from pathogens and herbivores (and thus, decreased need for pesticides). Due to chemical changes in root exudates plant communication with beneficial soil microorganisms can be improved, including N-fixating rhizobacteria – therefore, due to stimulated nodulation and N-fixation in legumes, the need for chemical fertilizers can be reduced.

ABOUT THE SPEAKER:

Prof. Dr. Vida Mildažienė is a professor at the Vytautas Magnus university. Her research interests are: biochemistry, bioenergetics, regulation of oxidative phosphorylation in mitochondria of animal tissues; impact of pathological factors and xenobiotics on mitochondrial energy functions; evaluation of tissue viability. Plant and animal cell response to stress, plant response to stress caused by seed treatment, application of systems biology methods, application of cold plasma in sustainable agriculture.

M C M X X I I

VYTAUTAS MAGNUS UNIVERSITY