

Acta Biologica Plantarum Agriensis 5(1): 63 (2017) DOI:10.21406/abpa.2017.5.1.63
ISSN 2061-6716 (Print), 2063-6725 (Online) 4th CC 2017 Abstract
<http://abpa.ektf.hu/> Poster

EFFECTS OF SELECTED BRYOPHYTE SPECIES EXTRACTS ON MICROORGANISMS

Kiválasztott mohafajok kivonatainak hatása mikroorganizmusokra

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Two dozen of bryophyte species was collected from native habitat types across Europe to test if the ethanol extract can affect the growth of various microorganisms. After start-up test the ethanol extract did not show any influence on growth and development to Gram-negative bacteria and fungi *Candida albicans* (ATCC10231). Thus, the further tests focused on the Gram-positive bacteria. The ethanol extract of 5g bryophyte material was macerated in liquid nitrogen, and then extract was evaporated till dry. The dry residue was dissolved in 5ml of methanol. This was used in further analyses by MIC and MBC techniques. The result obtained showed the most effective extracts were those made from *Pellia endiviifolia* and *Bazzania trilobata*. Phytopathogenic bacteria and fungi *C. albicans* showed resistance to extracts of any bryophyte species tested. Gram-positive bacteria, namely *Staphylococcus aureus* (ATCC25923), *Listeria monocytogenes* (ATCC19111) and *Bacillus subtilis* (ATCC6633) were intolerant to extracts of liverworts *P. endiviifolia* and *B. trilobata*. MIC value for two above mentioned liverworts extract tested were 7-12mm, while referent antibiotic (rifampicin) inhibitory zone were 15-35mm. The most resistant to any bryophyte extracts was *Escherichia coli* (ATCC25922), while the most sensitive was *B. subtilis* (ATCC6633) with MIC values obtained 0.01-0.19 mg/ml. The results obtained show clear antimicrobial potential of *P. endiviifolia* and *B. trilobata*, however further research are needed.