

BOOK OF ABSTRACTS

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selected bryophyte species (both moss and liverwort species). The extracts of bryophytes were made in two different ways (methanol and ethanol extracts) with the aim to get various compounds set from each of the selected bryophyte species. The obtained crude bryophyte extracts were tested *in vitro* for their potential to affect *B. cinerea*. The results showed that all bryophyte extracts inhibited the growth of *B. cinerea*. However, ethanolic extract of the pleurocarp moss *Isoetium alopecuroides* was the most effective in growth inhibition of *B. cinerea* under *in vitro* conditions. Further investigations are ongoing, having in mind that these results already have huge potential in development of biopesticide for this pathogenic fungus.

Keywords: *Botrytis cinerea*, plant pathogen, bryophytes, biopesticide

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Application of different methods for measuring carotenoid status in maize grain

PP5-25

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Maize grain carotenoids are among the most abundant in cereals, exhibiting considerable diversity in the composition profiles. In this experiment, HPLC-DAD was used for lutein and zeaxanthin (predominant carotenoids) and β -carotene (proVA carotenoid) determination in flour of whole maize kernel. In addition, Raman spectroscopy, as a non-destructive method for pretreatment-free and rapid *in situ* screening of carotenoids status in different kernel regions, was applied. Six yellow maize inbred lines (L1-L6) were evaluated. After the spectral normalization, deconvolution was performed on three individual bands in three observed regions on kernel longitudinal section (aleurone cell layer, flouy and vitreous endosperm), for all genotypes. It was found that the mean fitted area and intensity of three main carotenoid bands were the highest at 1520 cm^{-1} , medium at 1155 cm^{-1} and the lowest for the band at 1007 cm^{-1} , as spectral features used to identify carotenoids and quantify relative carotenoid concentration. Both the highest values for mean band fitted area and intensity observed in the flouy endosperm, and the lowest in the aleurone cell layer, were recorded in the same regions for all genotypes evaluated. L1 and L2 exhibited the highest values, while L3 and L4 exhibited the lowest values for the average and total band area. Significant and negative correlation between carotenoid content quantified by HPLC-DAD and bands area fit for vitreous endosperm region obtained by Raman spectroscopy (-0.847; $p \leq 0.05$), and between carotenoid content and total bands area (-0.898; $p \leq 0.05$) indicated the competition for carbon supplies reflected through increased starch reposition over carotenoids accumulation.

Keywords: β -carotene, endosperm, lutein, Raman spectroscopy, *Zea mays* L.

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