

Abstract:

The release of the mustard oil 2-phenylethylisothiocyanate (PEITC) by living canola (*Brassica napus* L.) roots into rhizosphere soil were assessed. Two cultivars of both winter and spring canola with different root glucosinolate contents were studied. PEITC-concentration in the rhizosphere ranges between 10 to 10000 pmol g<sup>-1</sup> (referring to soil fresh matter). The PEITC-concentration in rhizosphere reflects the glucosinolate concentration in roots. PEITC-concentration in rhizosphere changes with time and root zone. Besides the PEITC-concentration the community structure of rhizosphere microflora were assessed using PCR-DGGE and BIOLOG<sup>®</sup>-ecoplates. The community structure of both, bacterial and eucaryotic rhizosphere microflora, changes with differing PEITC-concentration in rhizosphere. This indicates that PEITC might be an important selective factor in the canola rhizosphere. The implications of PEITC-release for microbial diversity in the rhizosphere and plant health are discussed.