Influence of two polycyclic aromatic hydrocarbons on spore germination of *Gigaspora margarita*

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Arbuscular mycorrhizal fungi (AMF) are ubiquitous soil microorganisms that occur in soils contaminated by organic and inorganic compounds. However, little is known about the interaction of AMF with organic contaminants such as polycyclic aromatic hydrocarbons (PAH). To evaluate the influence of PAH on the spore germination of AMF, water-agar (1%) plates were contaminated with two PAH: phenanthrene (PHE) and benzo[\(a\)]pyrene (BaP). Contaminants were separately diluted in acetone and sprayed on the agar surface to apply 0, 25 (0.1 mM of BaP & PHE), 50 (0.2 mM BaP & 0.3 mM PHE), 75 (0.3 mM BaP & 0.4 mM PHE) and 100 \(\mu\)g mL\(^{-1}\) (0.4 mM BaP & 0.6 mM PHE), respectively. Twenty-four hours later, a superficially disinfested-spores of *Gigaspora margarita* Becker & Hall were placed on treatment plates with water-agar (1%). There were five treatments per concentration utilized per PAH species. Each treatment consisted on four replicate plates with 20 spores per plate (n=80). Plates were incubated at 24°C in darkness for 25 days, and then spore germination and hyphae length were evaluated. Spore germination was drastically affected by all concentrations of PHE. The spore germination percentage was reduced < - 92% > at 100 \(\mu\)g mL\(^{-1}\) (0.6 mM) of PHE compared to the non-contaminated medium (control). In contrast, the effect of BaP was less negative on spore germination percentage than PHE. Spore germination at 100 \(\mu\)g (0.4 mM) of BaP was reduced < - 42.8% > compared to the control. BaP stimulated total hyphal length compared to the control.