

### **O34. Assessment of metal exposure (uranium and copper) in fatty acids and carbohydrates profiles of *Calamoceras marsupus* larvae (Trichoptera) and *Alnus glutinosa***

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Metals occur in nature including watersheds. However, their concentrations have increased through anthropogenic actions. Here we explore physiologic changes in fatty acids (FA) and carbohydrate (CHO) composition in the shredder *Calamoceras marsupus* larvae (Trichoptera) and leaf litter (*C. marsupus* food) exposed to copper and uranium under natural and experimental conditions. We measured FA and CHO profiles in specimens exposed to reference and impacted streams, and after larvae and litter exposition for 5 weeks to four environmental realistic concentrations of copper (35  $\mu\text{g L}^{-1}$  and 70  $\mu\text{g L}^{-1}$ ) and uranium (25  $\mu\text{g L}^{-1}$  and 50  $\mu\text{g L}^{-1}$ ). Regarding FA, (1) leaf litter had reduced polyunsaturated FA (PUFA) in metal treatments in comparison with natural conditions. Leaf litter exposed to uranium also differed in saturated FA (SFA) composition, with lower values in natural conditions and higher under low uranium concentration. (2) *C. marsupus* had low PUFA content under both Cu and U exposure, particularly in high uranium concentrations. Under uranium treatment, detritivores increased in SFA and monounsaturated FA (MUFA) and decreased in PUFA and highly-unsaturated FA (HUFA). Also, copper exposition affected the composition in SFA, and MUFA, PUFA and HUFA of detritivores. Regarding CHO, (1) microorganisms colonizing leaf litter differed in CHO composition between natural (impacted and reference) and experimental conditions, with glucose and galactose being the most abundant sugars and showing different amounts under copper or uranium exposure; (2) Detritivores' CHO showed a similar pattern in high galactose and fucose concentration in contaminated streams and high copper treatments, whereas low copper treatment showed a distinct composition of CHO, with higher mannose, glucose, arabinose and fucose concentrations. Our study provides evidence of metal impacts in proportions of FA and CHO, which might alter the food quality flow in trophic webs.

**Palabras clave:** biomarker, invertebrate, polysaccharide, lipids.

**Área temática:** Biomarkers and toxicity mechanisms.