

Detoxification of Herbicides in *Phragmites australis*[§]

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Unintentional loss of herbicides into drainage ditches, shores or other waterbodies may cause large problems in farmland. Therefore strategies for the phytoremediation of agrochemicals and especially herbicides have become a topic of great interest in many agricultural areas. However, in order to establish effective biological pollution control, information on the detoxification capacity of riparian plants and aquatic macrophytes (*e.g.*, *Phragmites australis*) is important to build up effective buffer stripes. We determined the detoxification capacity of *Phragmites australis* roots and leaves for the conjugation of agrochemicals to glutathione by assaying the model substrate CDNB as well as the herbicides fenoxaprop-P, propachlor, pethoxamid and terbuthylazine. Specific GST activities were always higher in the rhizomes ($6.78 \pm 0.88 \mu\text{kat}/\text{mg}$ protein for CDNB) than in leaves ($1.08 \pm 0.21 \mu\text{kat}/\text{mg}$ protein). The detoxification capacity is distributed across an array of GST isoforms. In summary, *Phragmites australis* seems to be efficient in herbicide detoxification and a good candidate for phytoremediation of effluents from agricultural sites.

Key words: Glutathione Conjugation, Phytoremediation, Enzyme Induction