

P005 Using Proteomics to Understand Herbicide Safener Mode of Action

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Safeners are chemicals which protect crops from herbicide injury. They are thought to work by increasing the ability of the crop to detoxify herbicides, without affecting target weeds. The mechanisms by which they do this are poorly understood, although a number of safener-induced genes have been identified. The aim of this project is to use 1- and 2D electrophoresis in combination with immunoblotting and mass spectroscopic analysis to identify rice and wheat proteins which are differentially regulated and post-translationally modified in response to treatment with herbicides and safeners. The possible function of selected proteins will then be investigated. Techniques for obtaining reproducible phenotypic safening in rice, and for extraction, assay and 1- and 2D-electrophoresis of proteins have been established.