

HERBICIDE USAGE RECORDING SYSTEM

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In a climate of increasing public concern over pesticide use and litigation, accurate and easily accessible application data is essential to the land manager.

The Herbicide Usage Recording System (HURS) aim is to provide a fast, easy to use and comprehensive record of herbicide applications to predominantly linear land reserves such as railways, roads, irrigation channels and power and communication utilities.

The HURS system provides this on two levels. It is primarily a computer data base that will provide key information. In addition by the use of the unique reference number generated by HURS, the actual paper report produced by the spray operator may be quickly accessed for more detailed information. This provides the manager with a powerful tool to review the success of past applications and answer queries confidently.

The programme was originally prepared by the Public Transport Corporation to record all application of herbicide over the main-line rail network. However, it is envisaged that the system can be easily modified to suit other land management systems.

PHOTODEGRADATION OF BENSULFURONMETHYL HERBICIDE UNDER SIMULATED ENVIRONMENTAL CONDITIONS

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Photodegradation appears to be an important step in the transformation of herbicides applied to wetland paddy as most herbicides are applied at the time of transplanting. Bensulfuron-methyl herbicide (methyl α -[3,4,6-dimethoxypyrimidin-2-yl] ureido)sulfonyl-0-toluate; BSM), a common herbicide in paddy fields of Japan, has unique physicochemical properties, for example, its solubility in water is strongly dependent on pH (2.9 ppm at pH 5.0 to 1,200 ppm at pH 8.0 at 25°C). The pH of water in paddy fields varies considerably (6.4 to 8.9) within a single day.

We studied photodegradation process of BSM under simulated environmental conditions. After irradiating aqueous solutions of BSM with varying pH and photosensitizers in a spectro-irradiator, photodegradation products of the herbicide were analyzed by liquid chromatography and mass spectrometry. Photodegradation was confirmed by changes of UV absorption spectra under acidic conditions and in the presence of photosensitizers.