

PESTICIDE, HERBICIDE AND PHARMACEUTICAL USE AND RELEASE TO THE WIDER ENVIRONMENT

Problem

Fugitive emissions from application of herbicides, pesticides and pharmaceuticals and leaching from soil to ground- and surface-waters.

Impact

Human health

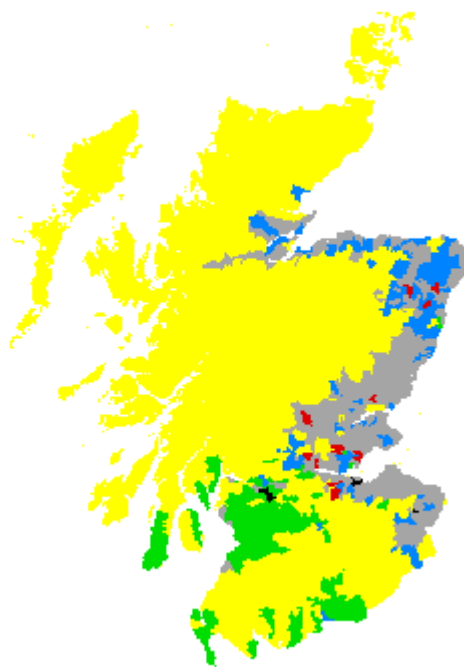
- Direct exposure of operatives and general public;
- Indirect exposure through accumulation in food chain and leaching to groundwater.

Ecosystem health

- Specific concern for wild aquatic and terrestrial species.

Areas at Risk

Application of herbicides and pesticides is widespread throughout arable cropping systems, particularly those located on prime agricultural land. A major environmental concern regarding pharmaceuticals lies in the widespread use of sheepdips, historically organophosphates and more recently synthetic pyrethroids. Areas at risk are broadly coincident with the distribution of the sheep population.



Distribution of Main Farm Types

| Farm Type | Areas at Risk | | |
|------------------|---------------|----------|------------------------------------|
| | Localised | Regional | Universal |
| General Cropping | | | Fugitive emissions |
| Mixed | | | Fugitive emissions |
| Dairy | | | Fugitive emissions |
| Pigs and Poultry | | | |
| Cattle and Sheep | | | Fugitive emissions esp. sheep dips |

Practical Actions

The development and testing of herbicides and pesticides is controlled by the Pesticide Safety Directorate whereas their use on farms is controlled by a range of legislation, including the Food and Environment Protection Act (1985), the Control of Pesticide Regulations (1986) and the Control of Substances Hazardous to Health Regulations (1994). The greatest source of risk to humans lies in the storage of pesticides on the farm, the dilution of concentrates for spraying and the act of spraying itself. However, specific guidelines are available to cover all of these areas, including hazard warning sheets from the manufacturers, advice from SEPA and SAC (downloadable from the SEPA website) and a complete section in the PEPFAA code.

In relation to sheep dip, again a range of advice is available with a section devoted specifically to sheep dipping in the PEPFAA Code. In addition the Health and Safety Executive also publish advice on sheep dipping. Recent work (Merrilees, 1999) has establish

a flow chart whereby risks to waters from disposal of spent dip can be minimised. Other bodies who offer advice and information include the Scottish Environment Protection Agency and the Environment Agency. In addition, the EA also publish data from monitoring of groundwaters in areas of Wales actively carrying out dipping sheep dip. These show that in 1997, despite the available advice on use and disposal, the active ingredients of dip still found its way into waters.



Linkages

Nutrient loss,
Erosion.

Research Gaps

The major gap appears to be in how to persuade farmers and other users to follow the advice offered to them.

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