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Key words: Drainflow, groundwater, decision support, farm

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Preference: either poster or platform
1st Choice: 6D 2nd Choice: 4C?
I want to be considered for the Young Scientist Award and will be below 30 years of age at the time of the meeting ~~Yes~~ / No

Exposure assessment to support on-farm risk characterisation for pesticides. Brown C.D.[1], Lewis K.A.[2] and Hart A.[3], [1]Cranfield University, Silsoe, UK; [2]University of Hertfordshire, Hatfield, UK; [3]Central Science Laboratory, York, UK. A computer-based decision support tool (p-EMA) has been developed to support UK Government policy of optimising agricultural pesticide use. The overall aim is to support the selection of pesticides at farm level that are likely to pose the least risk to the environment within the context of local site conditions and farm practices. The system estimates risks to a wide range of taxonomic groups and environmental compartments using methods consistent with current regulatory assessments, but also allows adjustments to reflect formulation, the local conditions and the environmental costs and benefits of varying management practices. The methodology requires conventional estimates of exposure to combine with the toxicological properties of the pesticide in the form of toxicity:exposure ratios. It uses simple models of the dispersion pathways of the pesticide in the local environment to estimate the predicted environmental concentration in the field and margin soil, surface water, groundwater and other media to which organisms (operators, mammals, birds, aquatic organisms, bees, earthworms and non-target arthropods) will be exposed. Concentrations in groundwater are calculated on the basis of a meta-version of the MACRO model linked to environmental and pesticide databases. Surface water concentrations are taken as the maximum of those arising from inputs via spray drift and drainflow (where installed). Data confidence is determined using a scoring regime considering the data source and the proportion of missing information. The new software will be made available to farmers, advisers and agronomists during 2001 as part of the EMA (Environmental Management for Agriculture) CD ROM.