ASSESSING THE ENVIRONMENTAL RISK OF CHEMICALS: THE EUROPEAN EXPERIENCE

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The need for appropriate assessment and management of chemicals introduced into the environment from a variety of direct and indirect sources has long been recognised. But what influences our decision to regulate the use of chemicals in specific ways and why have different environmental assessment criteria been developed and applied? Fundamental to risk assessment is the need to characterise both the exposure and the effect from which the likelihood, magnitude, frequency and longevity of the risk can be assessed. Indeed, the very presence of chemicals in the environment has given scientists the opportunity to develop a real understanding of how they got there and the extent to which they influence ecosystem health. This has enabled the development of sophisticated regulatory risk assessment procedures. In the European Union, the regulation of chemicals is driven by discreet Directives, each of which has resulted in very different approach to environmental risk assessment depending upon the classification of the use of the chemical. Pesticides are subject to rigorous and highly complex assessments compared with, for example, veterinary medicinal products or biocidal products. It is probably not surprising that the drivers for regulation and the associated risk assessments are influenced both by perceived benefit of the chemical and by socio-economic factors that determine it's acceptability. In affluent European societies where food is plentiful, the focus is not on keeping crops free of pests and diseases but on high levels of environmental protection, with close to zero chemical residues in food, resulting in stricter environmental measures in order to reduce pesticide usage. By comparison, veterinary products, that include pesticides, are deemed essential to animal health so environmental impact has not been viewed as a key regulatory driver.

The public also appear to have little interest in, or knowledge of, the vast numbers of chemicals present in large volumes in consumer goods that they have come to rely upon, certain of which could have a greater potential to affect both environmental and human health. In this context, the implementation of contentious new EU legislation (REACH) Regulation Evaluation and Authorisation of CHemicals is now under discussion that will require evaluation of the impact of the chemical through its life cycle. But the amount of environmental data needed is based on the tonnage of chemical produced. Regulation based on tonnage and hazard assessment, with no account taken of exposure, should be viewed with caution. It is important to recognise that an environmental exposure in one place is not necessarily the same as in another, which is why comprehensive exposure, effects and risk assessment, based on chemical usage pattern –albeit at different scales, is so essential to science based decision making.