

Opinion of the Scientific Panel on Plant protection products and their Residues on a request from EFSA on the Final Report of the FOCUS Air Working Group on Pesticides in Air: Consideration for exposure assessment. (SANCO/10553/2006 draft 1 (13 July 2006)).

(Question N° EFSA-Q-2007-047)

adopted 03 July 2007

SUMMARY OF OPINION

After application of plant protection products the chemicals in the product may volatilise from the surface of the treated plants, soil or water. These airborne residues are transported downwind, transformed, and may be deposited at short range or in remote regions. This emission is caused by processes other than spray drift, drainage, or run-off from soil. Deposition of these airborne residues may then coincide with the exposure at the edge of field already assessed in the existing risk assessment schemes, but may also result in an unassessed exposure of the terrestrial or aquatic environment, either nearby or in remote areas.

The FOCUS Air group was formed to develop guidance for applicants and Member States on appropriate methods for calculating exposure concentrations resulting from emission to air of plant protection products. The FOCUS Air group has produced a Report containing a proposal for exposure assessment for plant protection products in air. The Report considered that the contribution from the deposition of volatilised residues was quantitatively less important than spray drift at the edge of field. The relative importance of deposition after volatilisation increases if spray drift mitigation is required (e.g. buffers zones, drift reducing nozzles). The short-range transport (SRT) assessment scheme uses a vapour pressure trigger to identify substances of potential concern. The trigger in the Report is 10^{-5} Pa (at 20 °C) if a substance is applied to plants and 10^{-4} Pa (at 20 °C) if the substance is applied directly to soil. Substances that exceed these triggers, and require drift mitigation in order to pass the terrestrial or aquatic risk assessment, need to have deposition following volatilisation quantified and added to deposition from spray drift. The Report recommends quantification by modelling with the EVA2.0 model, if safety cannot be demonstrated by this means then further experimental data are required. The Report also recommends a trigger of a DT50 in air of 2 days to identify substances of potential concern for long-range transport (LRT). Substances having a longer DT50 require further evaluation to assess their potential impact upon the environment; recommendations on how such an evaluation may be done are presented in the FOCUS Air Group Report.

The Scientific Panel on Plant Protection Products and their Residues was asked for a critical opinion on the scientific review and practical recommendations made by the FOCUS Air group on the exposure assessment for plant protection products in air. As a specific point the Panel was asked to consider whether the vapour pressure cut off values for not assessing short range transport are appropriate, in the context of the tiered risk assessment scheme outlined.

The PPR Panel acknowledges the tremendous efforts which have gone into the preparation of the Report. The PPR Panel appreciates the broad view of the Report and the magnitude of the work completed.

However, the PPR Panel concludes that the FOCUS Air Report does not reflect the state of the art of science in the field of atmospheric transport and deposition of pesticides.

The PPR Panel is of the opinion that the exposure assessment scheme needs more clarification regarding its applicability for the various possible methods of pesticide application, as well as for introducing refinements.

The PPR Panel recommends that the trigger values for volatilisation as proposed by the Report (10^{-5} Pa for plants and 10^{-4} Pa for soil) are not used to eliminate the need for a risk assessment at the short range.

The PPR Panel is of the opinion that the Report's recommendations regarding the use of the EVA2.0 model for short range exposure assessment are scientifically not robust enough. The PPR Panel has investigated whether the proposed methodology for short range transport generates realistic worst case estimates of exposure, which are required for risk assessment. The PPR Panel has come to the conclusion that the recommended model does not give realistic worst case exposure estimates.

The PPR Panel considers the Report's conclusion that the DT50 trigger of 2 days is suitable to assess the need for exposure assessment of long range transport, to be appropriate for practical reasons.

The main recommendations of the PPR Panel are:

1. The PPR Panel recommends the chapters on atmospheric transport and modelling be reconsidered. The PPR Panel recommends that the sections on atmospheric deposition and monitoring include a process description of dry and wet deposition. The PPR Panel recommends that transformation products in the atmosphere be considered, as is currently required by the Directive 91/414/EEC. The PPR Panel recommends that the Report should summarise the key properties of the useful models and provide further guidance for the practical use of these transport models. It should be stated whether these models have been validated for regularly measured air-pollution compounds.
2. The PPR Panel recommends that in the SRT modelling the contribution of volatilisation to the exposure should be accounted for over a longer period of time than 24 hours. The PPR Panel recommends that for short range exposure in the field the Report should define realistic worst-case scenarios for field size and atmospheric conditions.
3. The PPR Panel recommends a more thorough analysis of the uncertainty in the calculated exposure concentrations be carried out.
4. The PPR Panel recommends the Report should provide guidance on how and when hazardous properties to the atmosphere should be assessed, and should consider the issue of solvent emissions as a potential problem.

Key words: Aerial transport, Atmospheric, Emission, Deposition, Long Range Transport, Pesticides, Short Range Transport, Transformation, Trigger, Vapour Pressure, Volatilisation