



To the State Secretary of Infrastructure and the Environment

Subject : Advisory letter *Health risks caused by plant protection products in agriculture: the use of research among residents*

Your reference : DP/2011043142

Our reference : I-821/11/HvD/bp/887-C1 Publication no. 2011/18E

Enclosure(s) : 1

Date : September 2, 2011

Dear State Secretary,

On 18 April, also on behalf of your colleague of Economic Affairs, Agriculture and Innovation, you asked the Health Council of the Netherlands to advise you on the potential health risks for residents living near agricultural fields arising from the use of plant protection products. You ask a number of questions in your letter (see Annex A). First of all, you wish to know whether residents are exposed to a degree that endangers their health. You ask that particular attention be given to vulnerable groups, high-exposure situations, exposure to combinations of chemicals, populations living near glasshouses and exposure via contaminated vegetable gardens. Additionally, you wish to know to what degree a planned European adjustment to the authorisation procedure for plant protection products offers a solution. Finally, you ask the Council's opinion on the usefulness and design of population screening in order to determine health risks for residents.

In order to answer your questions, I will shortly be appointing a multidisciplinary committee. In accordance with your request, I will briefly address your final question in this letter. My answer is based on relevant previous advisory reports published by the Health Council of the Netherlands and consultation of members of and advisors to the Committee to be appointed (see Annex B) and the Standing Committee on Health and the Environment.

Usefulness and design of research among residents

Plant protection products may leave the treated field as a result of spray drift during application, or afterwards via volatilisation from the plants or ground.^{1,2} They may also adhere to ground or dust particles spread by wind or carried on shoes or clothing.³ Residents are particularly worried about the potential health consequences for themselves and their children in relation to crops that require intensive use of such chemicals, such as flower bulb production.⁴ You ask whether population screening could shine a light on the health risks for residents. The term 'population screening' can



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mean a number of things. Sometimes this refers to screening individuals for a specific disease, such as breast cancer. Your question relates to research aiming to demonstrate or rule out health risks to residents due to the local use of plant protection products. For the sake of clarity, I prefer to use the term ‘research among residents’.

Research among residents living near agricultural fields can be split into two stages: exposure research and health research. The consulted Committee and Standing Committee members are unanimous in their opinion that exposure research is a necessary first step. In order to relate any health effects among residents to the use of plant protection products, greater knowledge of exposure is essential. Current insights into exposure levels for residents are largely based on models that may not include all relevant exposure situations. Measurement data on exposure of residents to plant protection products are scarce. In the Netherlands, only a few orienting studies have been conducted into plant protection product levels in air⁵, ground⁶, house dust^{3,6}, vegetables from kitchen gardens^{6,7} and drinking-water from private wells⁶. This is external exposure. Internal exposure (levels in body materials such as blood or urine) of residents in our country has, to the best of my knowledge, hardly been investigated. Available data from other countries cannot easily be translated to the situations in the Netherlands. I therefore feel exposure studies among residents are definitely useful. It is worth recommending research focus on areas where, based on intensive use and application methods for plant protection products, relatively high levels of exposure may be expected.

Measurement data may clarify which chemicals residents are exposed to, what the average level of exposure is in the longer term, and what the peak exposure levels are. Data may also provide insights into what the distance of a house to a treated field means for the inhabitants' exposure levels, how exposure varies over time, and how model-based exposure estimates relate to measured exposure levels. A comparison with the exposure of people who do not live in agricultural areas can clarify to what degree residents face higher levels of exposure than the rest of the population, which may also be exposed to plant protection products, for example via consumption of sprayed fruits and vegetables. Checking measured exposure against reference levels deemed safe, such as those for exposure of individuals who apply the chemicals (so-called AOEL^a) and consumers (ADI^b and ARfD^c) will indicate the level of risk. Based on the outcomes

^a Acceptable Operator Exposure Level

^b Acceptable Daily Intake

^c Acute Reference Dose



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of exposure research, the usefulness and potential design of further health research may be determined.

In order to yield usable results, exposure research must meet certain conditions.⁸ This relates to, among other things, the selection of suitable study populations, comparable control groups, chemicals to be measured, samples to be tested (*e.g.* air, house dust, urine) and timing, frequency and duration of measurement. Optimal design depends on the questions one wishes to answer. The Committee will therefore examine the issue of what type of exposure research can provide what kind of information.

Involving stakeholders

In your request for advice, you expressly requested that I involve residents in some way in drafting the advisory report. The Health Council of the Netherlands has previously emphasised the importance of citizen participation in dealing with environmental issues, particularly if they give rise to local worries⁹ and are characterised by substantial uncertainty¹⁰. Both issues appear to apply here. In order to develop exposure research that will be able to answer the questions of worried residents, it would be wise to not only involve them in designing exposure research, but already involve them now in drafting the advisory report on the possibilities and limitations of such research. The Committee will deliberate carefully on how to give this involvement form. Additionally, I shall ask the Committee to consult stakeholders other than residents as well, such as the agricultural sector and the agrochemical industry.

Naturally, the Committee will also address the other questions you have asked. My goal is to have the Committee's advisory report ready for you during the course of 2012.

A copy of this advisory letter was sent to your colleague of Economic Affairs, Agriculture and Innovation.

Yours sincerely,
(signed)
Professor H. Obertop
Vice President



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The request for advice

On 18 April 2011, the President of the Health Council received a request from the State Secretary of Infrastructure and the Environment to advise on the risks to residents resulting from the use of plant protection products. The State Secretary wrote (letter DP/2011043142):

The topic of risks to residents resulting from the use of plant protection products is on your 2011 working programme based on a request from my predecessor, the Minister of Housing, Spatial Planning and the Environment. With this letter, I wish to further specify the questions relating to this topic. I will involve recent developments on this topic. I do so also on behalf of my colleague from the Ministry of Economic Affairs, Agriculture and Innovation.

The risks to residents and bystanders of using plant protection products are not considered in the authorisation process. It is assumed that the assessment of the risks to the operator (who applies the chemicals) is sufficient to cover the risks to residents and bystanders. This assumption is increasingly being questioned, both nationally and internationally. Therefore, the decision has been made at a European level to assess said risks. This has been included in the new Regulation regarding authorisation of plant protection products. The development of a technical guideline outlining the evaluation process is still in progress.

The central topic for the advisory report is the question of whether residents may face levels of exposure to plant protection products that may result in health risks. Special attention is requested for vulnerable or sensitive groups, situations with high levels of exposure, and exposure to a mix of chemicals. A number of

groups of residents are currently worried about these issues. Given the level of societal unrest, it would be desirable to involve residents in some fashion in drafting your advisory report.

As soon as a European guideline for the authorisation process has been defined, it will also be implemented in the Netherlands. Your advisory report may take this development into account. Is it reasonable to assume that implementation of said guideline in the authorisation process may be expected to result in a decreased risk for residents, and if so, to what degree? Once this has been done, is there no longer any reason for concern, or are there still aspects that demand attention? Should this be the case, can these aspects be addressed sufficiently by instructions for use, or will areas for attention still remain? Experience in Germany with implementation of a precursor to the European evaluation method may provide valuable information.

I ask that you provide particular attention to risks that only play a role in the Netherlands, and are therefore not addressed by the European guideline, such as those affecting residents living near glasshouses. Additionally, there are exposure routes that are not included in the proposed evaluation, such as the risks due to consumption of foods from vegetable gardens located near agricultural fields. Are there reasons to modify the authorisation evaluation based on these considerations, or is there sufficient room for manoeuvring outside the boundaries of the authorisation process? I would like to be informed of any gaps in knowledge you have identified, and ask that you suggest ways to fill them.

Finally, I ask your attention for a more specific issue. This topic was discussed during a recent TV programme and subsequent political debate. It was suggested that the potential risks to residents could be determined using population screening. I would like your opinion on the usefulness and potential design of such a screening programme. Given the social and political interest in this suggestion, I would appreciate an answer to this question in advance of the full advisory report, for example in the form of an advisory letter. I would appreciate it if you could complete this advisory letter before this summer.

I would like to know how much time you believe is needed to draft the advisory report. You may call on my Ministry and/or the National Institute for Public Health and the Environment for involvement as observers or advisors.

Sincerely,

The State Secretary of Infrastructure and the Environment

(signed)

Joop Atsma

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Provisional list of members of the Committee

-
- Dr F. Woudenberg, *chairman*
Psychologist, GGD Amsterdam
 - Dr F. van den Berg, *advisor*
Environmental Chemist, Centre for Water and Climate, Alterra,
Wageningen University & Research Centre
 - Prof. M. van den Berg
Professor of Toxicology, Institute for Risk Assessment Sciences, Utrecht University
 - Dr P.J. Boogaard
Toxicologist, Shell International BV, The Hague
 - M. Busschers, *advisor*
Toxicologist, Board for the Authorisation of Plant Protection Products and Biocides,
Wageningen
 - Prof. D.J.J. Heederik
Professor of Health Risk Analysis, Institute for Risk Assessment Sciences,
Utrecht University
 - Dr R.M. Meertens
Psychologist, Maastricht University
 - Dr M.N.E. Nelemans, *observer*
Ministry of Infrastructure and the Environment, The Hague
 - Dr B.C. Ossendorp, *advisor*
Risk Assessor, National Institute for Public Health and the Environment, Bilthoven
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- Prof. P.J.J. Sauer
Emeritus Professor of Paediatrics, University Medical Center Groningen
- Dr P.T.J. Scheepers
Toxicologist, Radboud University Nijmegen Medical Centre
- Dr H.F.G. van Dijk, *scientific secretary*
Health Council of the Netherlands, The Hague
- M. Drijver, *scientific secretary*
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