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REPORT OF THE OECD SEMINAR ON RISK REDUCTION AND PESTICIDE NON-PROFESSIONAL USES

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Environment Directorate
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FOREWORD

This report summarises the discussion and outcomes of an OECD Seminar on "Risk Reduction and Pesticide Non-Professional Uses", which took place on 9 December 2014 at OECD headquarters in Paris, France. The seminar was the 14th in a series of Seminars organised by the Risk Reduction Steering Group (RRSG), a sub-group of the OECD Working Group on Pesticides (WGP). This Seminar was jointly organised with the Registration Steering Group (RSG), another sub-group of the WGP, as the issue of non-professional uses of pesticides relates to both registration and risk reduction activities.

The Seminar was chaired by Wolfgang Zornbach (Germany), Chairman of the OECD Pesticide Risk Reduction Steering Group (RRSG). Thirty-eight experts from nine OECD countries, the European Commission, the UN Food and Agricultural Organization, Business and Industry Advisory Committee (BIAC), International Biocontrol Manufacturers Association (IBMA) and research institutes/universities participated in the Seminar. The list of participants can be found at Annex 2.

"Risk Reduction and Pesticide Non-Professional Uses" was selected as the topic of this one-day Seminar because of its significance for pesticide risk reduction in the fields of human/public health and the environment. Previous OECD Pesticide Risk Reduction Seminars already considered some aspects of issues related to the uses of pesticides near or in residential areas. However, this was the first time that issues around the topic of non-professional uses were dealt with exclusively at the OECD.

The objectives of the seminar were to:

i. discuss issues related to pesticide non-professional uses, also referred to as “amateur”, “domestic”, “non-occupational” or “home/garden(ing)” uses;

ii. identify risk reduction strategies for protecting pesticide users that are not professional and not farmers or pest control operators; and

iii. exchange information on certain job-related uses by unqualified persons/staff (e.g. weed management by school janitors).

This document is being published under the responsibility of the Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology, which has agreed that it be declassified and made available to the public.

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INTRODUCTION

1. This report presents the results and recommendations of the *OECD Seminar on Risk Reduction and Pesticide Non-Professional Uses*. This one-day Seminar, held on 9 December 2014 at OECD, in Paris, France, was chaired by Wolfgang Zornbach (Germany), Chairman of the OECD Pesticide Risk Reduction Steering Group (RRSG).

2. This Seminar was the 14th in a series of Seminars organised by the RRSG, a sub-group of the OECD Working Group on Pesticides (WGP), composed primarily of representatives of the 35 OECD governments and including representatives of the European Commission, other international organisations, the (bio-)pesticide industry, and the environmental and consumer community. This Seminar was jointly organised with the Registration Steering Group (RSG), another sub-group of the WGP, as the issue of non-professional uses of pesticides was related to both registration and risk reduction aspects. An *ad hoc* planning group composed of RRSG/RSG representatives from Germany, Japan, the Netherlands and CropLife International helped prepare the Seminar programme and identify the speakers.

3. OECD pesticide Seminars focus on key issues in pesticide risk reduction of concern to OECD countries and associated parties. The Seminars are intended to provide an opportunity for OECD governments to discuss these issues together with non-governmental stakeholders and to develop recommendations for further OECD activities. The OECD Pesticides Programme has made great strides toward helping national governments coordinate and improve the efficiency and effectiveness of pesticide risk reduction activities. Past OECD Risk Reduction Seminars are listed in Annex 1.

4. Members of the RRSG selected "risk reduction and pesticide non-professional uses" as the topic of this Seminar because of its significance for pesticide risk reduction in the fields of human/public health and the environment. Previous OECD Pesticide Risk Reduction Seminars already considered some aspects of issues related to the uses of pesticides near or in residential areas. The 11th Seminar considered "residential" issues but in the context of professional uses. Also, the very first Seminar in 2003 on Compliance stressed the importance of raising public awareness about pesticide risks and later Seminars on Good Pesticide Labelling and on Good Container Management recommended that labels be in clear language and mindful of different users. Therefore, with this Seminar, it was the first time that issues around the topic of non-professional uses were dealt with exclusively at the OECD.

PARTICIPANTS

5. Attendees of the Seminar included representatives from:

- pesticide regulatory authorities of OECD countries;
- the pesticide industry;
- invited experts from key stakeholder groups such as home garden pesticide manufacturers, home garden user associations; and
- other international organisations (i.e., FAO and EPPO).

6. A participant list is provided in Annex 2.

SCOPE OF THE SEMINAR

7. The scope of the Seminar concerned issues and risk reduction strategies regarding pesticide non-professional uses, also referred to by some as "amateur", "domestic", "non-occupational" or "home/garden(ing)" uses. In the context of the Seminar, uses included those in homes:

- outside, in gardens, kitchen/allotment gardens, on trees, edges, etc. and/or
- inside, including home greenhouses, private terraces, balconies, etc.

8. In other words, for this event, the pesticide user is a non-professional and not a farmer nor a pest control operator. S/he is not expected to have received training in pesticide application and is not familiar with proper pesticide uses and other aspects of the pesticide life-cycle. The scope and discussions of the Seminar however covered certain job-related uses by unqualified persons/staff (e.g. weed management by school janitors). Hence, uses in public places and amenity areas were included if performed by unqualified persons who could be considered as non-professionals.

PURPOSE OF THE SEMINAR

9. As with previous Seminars, the objective of this one-day event was primarily to exchange information on a specific topic of interest to most OECD countries and other stakeholders, through presentations from countries, organisations, and industry followed by discussions and recommendations.

10. Within the topic of non-professional uses of pesticides, the main objectives of this Seminar were to:

- identify key issues, specific risks and challenges of pesticide non-professional uses and risk reduction;
- provide updates of national and international legislative and non-legislative activities and initiatives regarding non-professional uses;
- exchange information on OECD countries' current risk reduction activities;
- share successful and effective/efficient and approaches;
- share experiences for promoting information towards non-professional users;
- identify good practices that aim at improving risk reduction strategies for pesticide amateur uses;
- identify key aspects of the authorisation process that would need harmonisation;
- suggest and discuss options for further steps by governments and key stakeholders in OECD and non-OECD countries to address the identified issues; and,
- recommend possible further work for OECD, governments and other stakeholders.

STRUCTURE OF THE SEMINAR

11. The first part of the Seminar in the morning and early afternoon was devoted to informative presentations from governments, industry and trade associations and from a user group. The second part of the afternoon consisted of a roundtable discussion that built on issues that arose from the presentations, and development of recommendations for the OECD. The Seminar Programme is provided in Annex 3.

PRESENTATIONS

12. As an introduction, the Seminar Chair welcomed all participants, made an opening presentation (Presentation 1) about the OECD and the Pesticide Programme, and reminded participants about the Seminar objectives.

13. Then, the OECD Secretariat provided an overview of the situation in OECD countries (Presentation 2) and introduced the background document (Annex 4) prepared for the Seminar. That document compiles and analyses the results of an OECD survey carried out in early 2014 on regulatory requirements for pesticides used by non-professionals, in which 11 OECD countries participated. In particular, the survey requested information on two main aspects:

- requirements for non-professional pesticide uses (authorisation/registration by active ingredient/product and/or by use, and labelling and disposal requirements); and
- official data with respect to health/environment incidents caused by the non-professional use of pesticides.

14. In addition, the background document includes relevant information that was identified in the reports of three previous above-mentioned OECD Seminars, namely:

- 1st Seminar in 2003 on compliance;
- 3rd Seminar in 2004 on container management; and
- 4th Seminar in 2006 on good pesticide labelling.

15. Following these initial presentations, three groups of stakeholders, namely regulatory authorities, pesticide manufacturers and a home garden user group, provided their respective perspectives. Speakers shared their experiences and national initiatives on non-professional uses. Listed below are the main topics covered in each presentation. More detailed and illustrative information can be found in the presentations listed and compiled in Annex 5.

Authority and regulatory perspectives

16. Speakers from government agencies in Germany, the United States and Japan first presented their national frameworks:

17. Dr. Rolf Forster from the Federal Office of Consumer Protection and Food Safety (BVL) introduced the German concept for the authorisation of plant protection products for non-professional uses (Presentation 3). He first mentioned the decision making process involving four federal agencies and the legal framework which is in line with the European requirement (i.e. Regulation (EC) No. 1107/2009 and Directive 2009/128/EC). He then presented the specific requirements (see also the background document and the German response to the OECD survey) that could be summarised with the following general principle "*Plant protection products can only be authorised for use in home gardening if the evaluation of the plant protection product shows that, according to current scientific and technical knowledge it will cause no harmful effects when used correctly and for its intended purpose, or as a consequence of such, on human and animal health or groundwater nor any unacceptable effects on the environment. Dosage forms/techniques which do not cause any or negligible exposure of users, third persons and non-target areas are particularly suitable for use by non-professional users in home gardening (e.g. ready-to-use products in trigger spray bottles, plant sticks, ready-to-use products for wiping or spreading).*" As of October 2014, 131 products (i.e. different main authorisations) were authorised in Germany (out of a total of 626 products on the pesticide market for amateur users), representing 76 active substances and 907 uses (with insecticides/acaricides representing the higher proportion, followed by fungicides and then herbicides). Also, in 2013, pesticides for non-professional uses represented 5.3% (in tonnage of products) of the total German pesticide product market.

18. Mr. Jeff Dawson from the US Environment Protection Agency (EPA) provided considerations of the amateur pesticide uses in the US (Presentation 4), covering issues such as use, potential risks, policies & procedures and risk management. In 2006-2007, it was estimated that home and garden uses accounted for 8-9 % of the US pesticide market. Mr. Dawson referred to the 2012-updated Residential SOPs that provide detailed methods, and include scenarios, to assess amateur exposures (e.g. dermal, oral, inhalation) for both children and adults. As part of the policies, he outlined the label requirements and associated activities such as the "Smart Label Pilot Project" and "Web Distributed Labeling". Finally, he provided EPA updates in related issues relevant to non-professional uses such as spray drift & volatilization.

19. Mr. Masashi Kusukawa from the Ministry of Agriculture, Forestry and Fisheries presented the situation in Japan (Presentation 5) where no specific reference to "professional" or "non-professional" users is made in the law. "*Both are equally responsible for safe and proper use*". There is no system of "licensing" of pesticide uses so "*any registered pesticides are available to non-professional users*" and "*non-professional users are expected to understand the label and follow instructions*". However, Mr. Kusukawa acknowledged that the latter assumption was not always correct. Therefore, he provided detailed information about the different measures taken to manage risks concerning non-professional uses, such as restrictions for pesticides "intended for home gardeners" (with requirements on toxicity and net content), voluntary guidelines concerning the labelling and claims of such pesticides, and advice & consultation provided by prefectures and pesticide manufacturers. He concluded that although the measures in place have contributed to reduce accidents and illegal disposals, it was still possible that non-professional users buy "normal" pesticides which required more skills and caution. Therefore, as part of possible future challenges, he listed developing further the labelling guidance to include inappropriate claims and increasing dissemination of information about risk/benefit of pesticides in a broad effort to improve public chemical literacy.

Industry/trade association perspectives

20. Speakers from the pesticide industry representing CropLife International presented views from both a large company and a small-and-medium size company.

21. Mr. Kris Leemans from Monsanto Europe reviewed "risk perceptions versus reality" associated with gardens and non-professional pesticide uses based on published surveys and studies (Presentation 6). He first listed positive values associated with gardens, which are considered as leisure areas where maintenance is needed. Among the options available to the home gardeners is the use of chemical/biological pesticides (that, in particular, could reduce maintenance time). The current problem of industry "that is pushed into a defence position" is the "widely communicated perceptions" and emotional claims around the risks of pesticides. Mr. Leemans argued that e.g.: according to Belgian and German data, "real intoxications" caused by pesticides are very rare; according to a UK study, glyphosate concentration in water is below threshold values; according to a 2014 ICPR symposium, in 2012, pesticide products had 60% less impact on honeybees than in 2005; and according to a 2010-2011 Special Eurobarometer 360 on "consumer understanding of labels and the safe use of chemicals", consumer risk awareness is generally greater than expected and gardeners are aware of the products characteristics. He concluded that gardeners ask for having the freedom of choice, given the cost implication with pesticide use.

22. Ms. Martina Utenwiehe from W. Neudorff GmbH KG provided a "Practical View from a SME" in particular regarding risk mitigation measures (Presentation 7). Taking into account the duration of the R&D and registration process, and given the small size of the home garden pesticide market, she asked for more predictable and stable registration criteria for garden products. Echoing the previous presentation, she complained about the "widely communicated perceptions" about pesticide risks and argued that *"the precautionary principle should not be invoked without serious and documented reasons"* and that *"registration evaluation should be based on science, without 'political driven influence'".* Ms. Utenwiehe then listed the various risk options e.g. dosing, packaging, special application systems, communication, adding that more stewardship towards less risk products was still possible, but required study and innovation investments. She also mentioned issues associated with labelling (such as language, icons, size) and with training of sales staff. Finally, in her "wish list to regulators", she requested that "*risk assessments used should be based on real risk scenarios"* as *"current risk assessments and safety factors do not reflect the real risk".*

User group representative perspectives

23. Mr. Martin Breidbach from Verband Wohneigentum E.V., a German user association representing more than 350.000 members nationwide with activities in consumer-protection, lobbyism, insurance benefits, magazine, advice, etc., presented the results of an on-line questionnaire carried out in 2014, that received 1642 responses (Presentation 8). A number of interesting messages can be drawn from the responses:

- The members of the association use their gardens in many different ways (25% kitchen garden and 75% flower/ornamental garden) and for a number of reasons. They inform themselves about plant damages, diseases, pesticides on a broad level, but are also advised by the association and its advisers.

- 94% of the users spend less than 75€ per year on pesticides.

- The packaging sizes are sufficiently dimensioned. The range of ready-to-use-preparations corresponds to the members' needs. In contrast, action would be needed to improve the instruction leaflets as well as the dosage aids.

- There is still need of information for the use of herbicides, especially in view of the use on hard surfaces like paths or garage drive.

- Environmental awareness and risk perception have clearly increased over the last 14 years. However prohibiting pesticides seems to be going too far for most of the consumers.

- He informed the participants that a nationwide, governmental (?) survey about the use of pesticides in domestic and small-garden sector first carried out in 2001 would be conducted again in 2015.

How non-professional users differ from professionals

24. As part of the presentations, many speakers mentioned that expected behaviours and practices of non-professional users were different from professional ones (farmers or professional operators), that risk assessment and management options were thus to be specific, and referred to current assumptions made by either regulatory authorities or manufacturers on non-professional users. The attached background document also compiled a number of parameters that define those users (as reported by the countries in the OECD survey). Therefore, as part of this Seminar report, it was thought worthwhile listing these assumptions/features that characterize "amateurs" with respect to pesticide use, using information from both the Seminar presentations and the survey.

25. Non-professional users of pesticides:

- do not use and apply pesticides in the framework of their professional activities on a regular basis (i.e. in some countries, certain persons working in public places and amenity areas e.g. school janitors applying pesticides from time to time for weed management, would also be considered as non-professionals)

- have no or limited knowledge about pesticides and therefore tend to either over- or under-estimate the associated health risks (for them, their family including children, and neighbours) as well as environmental risks

- are not trained for proper use, handling, storage or disposal (although some information may be given at the time of purchase if pesticides are bought in a specialised shop), and therefore do not hold any license or certificate

- are assumed not to wear any personal protective equipment (some countries assume that a Summer attire is worn, while other countries assume a minimal degree of protection: e.g. gloves, long-sleeved shirt, long trousers, headgear, sturdy footwear such as rubber boots) – in addition, they may not have good access to PPE nor know how to correctly use and maintain such equipment; and overall they may be not aware of the necessity to protect themselves

- are not familiar with the information found on the packaging labels (about use instructions to follow or personal protective equipment to wear in some cases), although in most countries the language has been adapted to consumer use

- use pesticides in small cultivation areas (although this size aspect may vary from country to country)

- are expected to generally experience only short-term exposures (as “”operators”)

- apply pesticides in areas that may be frequented by sensitive groups of persons (e.g. children, the elderly and the ill), who might experience intermediate / longer-term (post-application) exposures (e.g. lawn treatments)

- spray usually with a hand-held (or knapsack sprayer) or other commercial ready-to-spray bottles which require no preparation and mixing

- cannot be monitored by the competent authorities to the extent professional users are.

SEMINAR DISCUSSIONS

26. Following the presentations that addressed issues and challenges associated with non-professional uses of pesticides, as reported in the above section, the floor was opened to all Seminar participants for a roundtable discussion. The Chair invited participants to focus on a number of issues raised by the various speakers and in the attached background document. They are reported in the paragraphs below.

Risk assessment and risk management, including exposure scenarios

27. The Chair first suggested exchanging views on risk assessment and risk management approaches, reminding participants that most countries applied cut-off criteria based on the hazardous properties of the products when considering non-professional users. It was stressed that these criteria responded to the need to restrict the access of some pesticides to those users and to remove the most toxic substances from the non-professional market. For example, Germany mentioned that organo-phosphorous compounds which used to cause concern and reported cases of poisoning were no longer available to amateurs.

28. However, some participants mentioned that although these cut-off criteria greatly limited the availability of many substances that should not be in the hands of non-professionals, there were still products causing health concerns, in particular for children and babies (as by-standers), and that additional assessments were needed. The US delegate informed the meeting that the US risk assessment methodology for children exposure was identical for pesticides used by amateurs or by professional lawn service staff. He added that the methodology would assume label compliance (i.e. no over dosage would be anticipated) and would apply additional safety factors for children because of their possible increased sensitivity (more detailed information is to be found in the US residential SOPs).

29. Industry delegates argued that most current risk assessment models were based on assumptions used for pesticides in professional settings and that they would need to be refined to be in line with new technology, e.g. taking into account ready-to-use products. Exposure scenarios for by-standers/residents

could also be reconsidered as the treated surface areas were generally limited to a few hundreds square meters maximum in a non-professional context. It was therefore agreed that some efforts could be put into developing more specific risk assessment models and scenarios.

Restrictions of uses

30. Participants reviewed some of the options used by regulatory authorities to mitigate the risks of products for non-professionals by restricting certain uses. This is mainly achieved through authorising only some types of formulations, requiring specific packaging and allowing uses in certain conditions (see examples in background document, section A (c)). Industry representatives mentioned that they were investing substantially in developing innovative formulations and packaging for ready-to-use products, requiring no mixing operations (but resulting in more expensive products). They however reported that some users still preferred buying concentrates (when available) and diluting them, as this could be more cost-effective.

Residue issues

31. The Chair then opened the floor to review issues around pesticide residues (e.g. MRLs, guidelines, dietary exposure) and whether these were specific to amateur uses or already covered by professional approaches. The Seminar noted that, generally speaking, the residue requirements and limits for kitchen garden/orchard uses would follow those applied for professional agricultural uses. However, some countries do pay attention to home-produced commodities as these food crops could represent a non-negligible proportion of the diet and be more than just a "complementary" food. In addition, it was reported cases where amateurs would consciously use a product that is indicated/authorised for one specific vegetable e.g. for tomato, on neighbouring vegetables in the kitchen garden that could appear to have the "same" pests or diseases. Discussion then followed on how to manage authorisations in a more logical and common-sense way for non-professionals. Some more points were also made about related issues such as off-label uses, minor uses and gaps as they are related to amateur uses.

Environmental issues

32. Seminar attendees then turned to environmental issues. Participants from EU countries mentioned that water bodies and non-target organisms were considered in EU/national legislations (for example, see German requirements in Presentation 3). The US delegate reported that discussions were taking place with registrants and scientists in this area. One limiting aspect was the lack of usage information and thus assumptions and extrapolations were being made in modelling (which is currently adapted to larger agricultural uses).

Labelling

33. The Chair and participants agreed that labelling was very important for non-professional users as labels often represent the first and only step of information about the products. It was reiterated that the language(s) used should be as simple and as light as possible (although it was acknowledged this was not always feasible because of the legal requirements and the size of packaging which is generally smaller for non-professional products). In particular, it was stressed that the texts/instructions should not be the same as those used in professional/commercial environment: they would need to be adapted to make sense for

the general public. In addition to being reviewed by government experts and industry advisors, it was questioned whether the labels for non-professionals were cross-checked and tested for layman understanding before being released. Finally, some participants acknowledged the fact that it needed to be assumed that some users simply do not/never read the labels.

Communication

34. Participants reported on some communication initiatives towards non-professional users. In particular it was noted the use of internet and social media and the development of new applications for mobile phones and tablets. Such newer technologies help provide clear and direct messages and raise awareness about certain issues regarding pesticide uses in the home environment, such as correct uses, specific risks or suggested alternatives.

Compliance and non-compliance

35. The Chair noted that many of the previously-mentioned issues related to compliance. How to assume compliance by non-professional users given that they cannot be monitored and inspected as agricultural and other professional operators are? How big is the risk of non-compliance? How to manage non-compliance? Germany illustrated this point as this country faces an important number of illegal uses of herbicides on paved surfaces such as paved slip roads or pedestrian paths: according to checks made by competent authorities in 2008 and 2010, more that 60 % of the uses were classified as illegal and approximately 60 % of these situations were caused by amateur gardeners

36. Participants acknowledged that regulators had to assume compliance up to a certain degree and that non-compliance cases were somehow covered in the registration procedures through the risk assessment (see above section) and risk mitigation decisions. For example, for human health aspects, only products with no re-entry period are authorised while for environment aspects, no safety/buffer zones are generally required when using products for non-professional uses.

Alternatives to chemical pesticides

37. As reported by the speaker from the German home garden user association in Presentation 8, many non-professional users already do not use any chemical means and instead use mechanical and biological means (i.e. 25-30 % of non-professional users use chemical measures). It was also mentioned that some countries in the EU, i.e. France and the Netherlands, have taken a more stringent approach: in France, by 2022, no chemical plant protection products would be available to non-professional sold in general and garden stores. The IBMA representative reported recent shifts in consumer behaviours towards alternatives and beneficials: although beneficials are more expensive, when they are successfully kept and applied under the right conditions, more users (re-)buy them and the market is expanding.

SEMINAR RECOMMENDATIONS

38. All participants made knowledgeable interventions which contributed to a better understanding of the issues associated with non-professional uses of pesticides, and helped the group identify recommendations on possible follow-up steps on this topic.

39. In summary, the recommendations from the Seminar participants were the following:

- More specific risk assessment and more specific exposure scenarios should be developed for non-professional uses of pesticides to take into account the differences in application and in behaviours

- Regulators should identify areas (or key compounds) that would need more attention in order to target regulatory actions to situations where non-professional users are more at risk

- Although the Seminar did not identify any urgent needs for harmonised risk assessment, it recommended starting combined efforts in order to further improve harmonisation e.g. exchanging experiences and approaches with colleagues in other countries, and sharing information about updated regulatory and guidance documents

- Should any harmonization or activities take place in the area of non-professional uses, the Seminar recommended they take into account the OECD green growth strategy and any current initiatives by other regional/international organisations (EU, FAO, EPPO)

40. The Chair concluded the Seminar by thanking the speakers and the participants and by acknowledging the continued interest of stakeholders in exchanging information about a given subject in OECD one-day Seminars.

Note: The recommendations developed by the Seminar participants will be forwarded to the relevant bodies of the OECD Pesticides Programme, the members of which will consider these recommendations and agree on which one(s) to initiate, if any, and which existing expert group(s) to involve.

ANNEX 1
LIST OF OECD SEMINARS ON PESTICIDE RISK REDUCTION

Title of Seminar [references of OECD publication]	**Date**	**Place**
Compliance and Risk Reduction *ENV/JM/MONO(2004)6 (*Series on Pesticides No. 24)	10 March 2003	Paris, France
Minor Uses and Pesticide Risk Reduction *ENV/JM/MONO(2005)4 (*Series on Pesticides No. 26)	4 Nov. 2003	Canberra, Australia
Pesticide Risk Reduction through Good Container Management *ENV/JM/MONO(2005)12 (*Series on Pesticides No. 28)	22 June 2004	Bonn, Germany
Risk Reduction through Good Pesticide Labelling *ENV/JM/MONO(2006)13 (*Series on Pesticides No. 29)	1 March 2005	Paris, France
Pesticide Risk Reduction through Better Application Technology *ENV/JM/MONO(2007)3 (*Series on Pesticides No. 35)	30 Nov. 2005	Wellington, New Zealand
Joint OECD/EC Seminar on Harmonised Environmental Indicators For Pesticide Risk (HAIR) *ENV/JM/MONO(2007)27 (*Series on Pesticides No. 40)	13 Nov. 2006	Bonn, Germany
Risk Reduction through Better Worker Safety and Training *ENV/JM/MONO(2008)9 (*Series on Pesticides No. 42)	21 March 2007	Brno, Czech Republic
Risk Reduction through Education / Training the Trainers *ENV/JM/MONO(2009)35 (*Series on Pesticides No. 45)	15 Nov. 2007	Mexico City, Mexico
Risk Reduction through Spray Drift Reduction Strategies as Part of National Risk Management *ENV/JM/MONO(2009)36 (*Series on Pesticides No. 46)	12 June 2008	Paris, France
Pesticide Risk Reduction through Better National Risk Management Strategies for Aerial Application *ENV/JM/MONO(2010)22* (Series on Pesticides No. 50)	24 Feb. 2009	San Francisco, US
Pesticide Risk Reduction Strategies near/in Residential Areas *ENV/JM/MONO(2011)5* (Series on Pesticides No. 58)	17 Nov. 2009	Tokyo, Japan
Risk Reduction through Prevention, Detection and Control of the Illegal International Trade in Agricultural Pesticides *ENV/JM/MONO(2011)6* (Series on Pesticides No. 59)	19 May 2010	Paris, France
Indicators for Integrated Pest Management (IPM) *ENV/JM/MONO(2014)7* (Series on Pesticides No. 75)	27 Nov. 2012	Queenstown, New Zealand

The reports from these Seminars are available on the OECD public web site at: http://www.oecd.org/env/pesticides, under the section "Risk Reduction."

ANNEX 2
LIST OF PARTICIPANTS

OECD Seminar Risk Reduction and Pesticide Non-professional Uses
9 December 2014, OECD, Paris, France

Allemagne/Germany	Dr. Wolfgang ZORNBACH **(CHAIR)** Deputy Head, Plant Protection Unit Federal Ministry of Food and Agriculture (BMEL)
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Verband Wohneigentum e.V.	Mr. Martin BREIDBACH Verband Wohneigentum e.V.

ANNEX 3

Seminar Programme

14th OECD Seminar on Pesticide Risk Reduction (organised jointly by the Registration & Risk Reduction Steering Groups, RRSG & RSG)

OECD Seminar on Risk Reduction and Pesticide Non-professional Uses

9th December 2014

OECD Conference Centre, 2 rue André-Pascal, 75016 Paris

Chair: Wolfgang Zornbach, Germany

9.00 am	**Introduction** • **Opening and welcoming remarks** – OECD Secretariat • **The OECD Working Group on Pesticides and Purpose and structure of the seminar** – Seminar Chair (Wolfgang Zornbach, Federal Ministry of Food, Agriculture and Consumer Protection, Germany, and Chair of the RRSG) • **Tour de table** to introduce participants
9.30 am	**Presentations** *1) The situation in OECD countries* • Risk Reduction Steering Group work relevant for non-professional uses and 2014 survey results (Secretariat, OECD Pesticides Programme) *2) Authority/Regulatory perspectives* • The German concept for the authorization of PPP for non-professional uses (Rolf Forster, Federal Office for Consumer Protection and Food Safety (BVL), Germany) • Consideration of amateur pesticide uses in the US (Jeff Dawson, Environment Protection Agency, US) • The current situation in Japan regarding non-professional pesticide uses (Mr. Masashi Kusukawa, Deputy Director of the Ministry of Agriculture, Forestry and

	Fisheries, Japan) *3) Industry/Trade Association perspectives* • Risk Reduction and Pesticide Non-Professional Uses: Producer Perspective (Kris Leemans, CropLife International) • "Pesticides for Non-Professional Uses & Risk mitigation measures: Practical view from an SME" (Martina Utenwiehe, the ECPA GAPEG, Garden and Amenity Group) *4) User Group representative perspectives* • "Use of pesticides in German leisure gardens – a view into the gardens of the association's members" (Martin Breidbach, Verband Wohneigentum e.V. (national home ownership association, Germany)
12.30 (around)	Lunch Note: coffee breaks will be organised in the morning and in the afternoon
Afternoon	**Round-table Discussions (non–exhaustive list)** The Seminar should aim to answer the following questions: i. From the viewpoint of protecting human health and the environment, what are the significant differences between non-professional pesticide uses and normal (professional) pesticide uses? ii. Policies, procedures and regulations: – What regulatory requirements, guidance and other voluntary measures exist in different countries concerning pesticides for non-professional uses? – What risk assessment approaches, including specific exposure models for amateur use, are available? – What are the differences between countries? iii. What are the key issues for the improvement of risk assessment/risk management approaches (e.g. exclusion of certain categories of a.i. for non-professional uses such as carcinogens) for reducing risks from non-professional pesticide uses? iv. What could governments and other stakeholders do to promote better practice by non-professional users to ensure protection of users/by-stander/neighbours? E.g.: – Communication / advice including training • Specific training for amateurs • Specific communication tools for amateurs (e.g. media, internet) – Risk reduction and mitigation measures • Specific and feasible Personal Protective Equipment (or assuming no PPE at all)

	• Simple to implement v. Is there an opportunity for governments to take harmonized approaches to address the identified issues concerning non-professional uses? vi. What is the possible work of OECD in this area? vii. Other possible topics for discussion: • Sales, distribution, storage, disposal aspects (as they relate to risk reduction) o Labels (e.g. in a language clear and easy to understand) o Specific packaging (e.g. ready-to-use packages, small volumes) • Use gaps (i.e. unavailability of products for certain amateur uses) • Neighbouring problems: smells, exposure to clothing, health problems, drift • By-stander (including children/infant) issues • Incentives for industry to develop more low-risk products
	Summary of the discussion and Ideas for follow-up **Conclusions** The Seminar (Chair and/or Secretariat) will conclude on the roundtable discussions. **Recommendations** The Seminar could develop recommendations for solutions and further actions on: • improving risk reduction strategies for amateur uses • encouraging better practices by amateur users • ensuring better user/by-stander/neighbours/protection and information (e.g. identify clear communication tools and strategies) • promoting better understanding of issues among all stakeholders involved. • harmonising (regulatory) approaches for amateur uses • developing possible future OECD work (e.g. survey, guidance, etc.)
5.00 p.m.	End of the Seminar

NOTES - Presentations

Presentations will start in the morning and will continue into the afternoon, as necessary. Each presentation will last about 20 minutes (apart from the OECD presentation of 10 minutes), followed by 5-10 minutes for questions and answers.

1) Authority/Regulatory perspectives:

Talks should focus on i) registration/authorisation (including any regulation with regard to more hazardous active ingredients); ii) labelling requirements; iii) exposure/risk assessment practices; iv) risk mitigation measures (exposure); v) requirements for disposal (linked to labelling requirements)

2) Industry/Trade Association perspectives:

Talks should focus on i) the uses products are marketed for; ii) companies' experiences with registration/authorisation; iii) aspects to do with risk reduction: how a.i.s are chosen (target, hazard, product delivery system driven?) and any restrictions, examples of packaging/labelling employed to reduce non-target exposure/risk mitigation measures; and iv) where they see the major challenges in the area of reducing risk for non-professional applications.

3) User Group representative perspectives:

Talks should focus on i) description of most prevalent uses, uses associated with greatest perceive risk; ii) usefulness of current labelling and guidance with regard to risk reduction; iii) current approaches to education/improving risk management; iv) where they see greatest problems from users' perspective and room for improvement (e.g. in products (packaging & labelling), PPE use, potential for beneficial regulation).

BACKGROUND MATERIAL

1. Background document for the seminar, including the results of the 2014 survey on regulatory requirements for pesticides used by non-professionals and summary of relevant information from the previous RRSG seminars on:
   - compliance (ENV/JM/MONO(2004)6);
   - container management (ENV/JM/MONO(2005)12)
   - good labelling (ENV/JM/MONO(2006)13);

2. U.S. EPA's 2012 Standard Operating Procedures for Residential Pesticide Exposure Assessment (see http://www.epa.gov/pesticides/science/residential-exposure-sop.html);

3. the German concept for Plant protection products for non-professional users and for use in home gardening (see http://www.bvl.bund.de/SharedDocs/Downloads/04_Pflanzenschutzmittel/PSM_Haus_und_Kleingarten_EN.html).

ANNEX 4

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION DE COOPÉRATION ET DE DÉVELOPPEMENT ÉCONOMIQUES

14th OECD Seminar on Pesticide Risk Reduction
organised jointly by the
Registration & Risk Reduction Steering Groups
RSG & RRSG

OECD Seminar on Risk Reduction and Pesticide Non-professional Uses

BACKGROUND DOCUMENT

Date of initial version: 21 November 2014
Revised 2 February 2015

Seminar to be held on 9th December 2014

OECD Conference Centre
2 rue André-Pascal
75016 Paris, France

This paper has been prepared as a background document to the OECD Seminar on Risk Reduction and Pesticide Non-professional Uses, to take place on 9 December 2014, at OECD in Paris.

Background

The members of the RRSG selected "risk reduction and pesticide non-professional uses" as the topic of this Seminar considering its significance for pesticide risk reduction in the fields of human/public health and the environment. Previous OECD Pesticide Risk Reduction Seminars already considered some aspects of issues related to the uses of pesticides near or in residential areas. The 11th Seminar considered "residential" issues but in the context of professional uses. Also the very first Seminar in 2003 on Compliance stressed the importance of raising public awareness about pesticide risks and later Seminars on Good Pesticide Labelling and on Good Container Management recommended that labels be in clear language and mindful of different users. Therefore, it will be the first time that issues around the topic of non-professional uses will be dealt with exclusively at the OECD.

Scope of the Seminar

The scope of the Seminar will be on issues and risk reduction strategies regarding pesticide[1] non-professional uses. Some countries also refer to these uses as "amateur", "domestic", "non-occupational" or "home/garden(ing)" uses. So, in the context of the Seminar, uses to be covered include uses in homes:

- outside, in gardens, kitchen/allotment gardens, on trees, edges, etc. or/and
- inside, including home greenhouses, private terraces, balconies, etc.

In other words, in the context of this event, the user is a non-professional, and not a farmer, nor a pest control operator. S/he is not expected to have received training in pesticide application and is not familiar with proper pesticide uses and other aspects of the pesticide life-cycle. The scope and discussions of the Seminar could however cover certain job-related uses by unqualified persons/staff (e.g. weed management by school janitors). Hence uses in public places and amenity areas could be included if performed by unqualified persons who could be considered as non-professionals.

Content of this document

This document is based on the attached results of a 2014 survey on regulatory requirements for pesticides used by non-professionals, in which 11 OECD countries participated.

The survey analysis is complemented by relevant information that was identified in the reports of three previous, above-mentioned OECD Seminars, namely:

- 1st Seminar in 2003 on compliance (published as ENV/JM/MONO(2004)6);
- 3rd Seminar in 2004 on container management (published as ENV/JM/MONO(2005)12); and
- 4th Seminar in 2006 on good pesticide labelling (published as ENV/JM/MONO(2006)13).

[1] pesticides are plant protection products (i.e. not biocides)

Such Seminar information has been inserted in boxes within the text of the survey analysis, where appropriate.

Additional information was included from two more country documents:

- the German concept for "the authorisation of plant protection products for non-professional users and for use in home gardening" (see http://www.bvl.bund.de/SharedDocs/Downloads/04_Pflanzenschutzmittel/PSM_Haus_und_Kleingarten_EN.html). This document was referred to in the German response to the survey.
- U.S. EPA's 2012 Standard Operating Procedures for Residential Pesticide Exposure Assessment (see http://www.epa.gov/pesticides/science/residential-exposure-sop.html) . This document does not specifically provide information on the US requirements but outlines a wide array of exposure scenarios that are intended to address all major possible means by which individuals in the general public could be exposed to pesticides in a residential environment.

Report and analysis of the responses to the OECD Survey on regulatory requirements for pesticides used by non-professionals

Eleven countries responded to the OECD survey sent out in March 2014: ***Australia, Belgium, Canada, Denmark, Germany, Hungary, Italy, Japan, New Zealand, Norway*** and ***Turkey.***

Although two responses were received from Australia, one from the national government and another one from a regional authority, responses from this country were aggregated to count as "one country" response, in particular for the sums made in the compilation of the responses provided in Appendix 1.

A. Requirements for non-professional pesticide uses

To the initial question about whether countries had specific regulatory requirements with respect to non-professional pesticide uses, nine countries responded positively. Only New Zealand and Turkey indicated that they had no specific requirements. However, New Zealand mentioned that access by the general public to some dangerous products (including plant protection products) which meet certain criteria (relating to acute toxicity, corrosivity or ecotoxicity) was restricted and that such products would require an approved handler certificate. As it is described further below, the New Zealand's approach is in fact consistent to what other countries, which indicated having amateur-specific requirements, reported doing.

The next question requested more detailed information about these regulatory requirements for non-professional uses, and whether they applied to authorisation/registration by active ingredient/product and/or by specific use, to labelling requirements and to disposal practices. Overall, country responses indicated that regulatory requirements for non-professional uses cover all above-mentioned areas.

As described further in this document, a key objective in country regulations is to limit the access and availability of pesticides to non-professional users. Requirements relating to the a.i./product and those relating to specific uses seem to be applied in combination in most countries, to take into account the characteristics of the non-professional users (see (a) below). The approach seems to be consistent in responding countries:

- In general, countries first restrict products based on their properties and classification to authorise only those of lower toxicity (see (b) below).
- Then, countries further restrict products by authorising only certain uses, i.e. through adapting packaging, formulations and conditions of use (see (c) below).

(a) How non-professional users differ from professionals

Although this was not a direct question of the survey questionnaire, when justifying why and how the requirements for non-professional pesticide users were specific, responding countries have put forward a number of parameters that define those users. The list below is therefore non-

exhaustive but gives a picture of what characterize "amateurs" with respect to pesticide use. In essence, non-professional users of pesticides:

- do not use the pesticide products in the framework of their professional activities
- have no or limited knowledge about pesticides and the associated risks (for them, their family including children, and the environment)
- are not trained for proper use, storage or disposal (although some information may be given at the time of purchase if pesticides are bought in a specialised shop), and therefore do not hold any license or certificate
- are assumed not to wear any personal protective equipment (or only in a minimal way: e.g. gloves, long-sleeved shirt, long trousers, headgear, sturdy footwear such as rubber boots) – and in addition, may not have good access to PPE nor know how to correctly use such equipment
- use pesticides in small cultivation areas (although this aspect may vary from country to country)
- are expected to generally experience only short-term exposures
- apply pesticides in areas that may be frequented by sensitive groups of persons (e.g. children, the elderly and the ill), who may experience intermediate / longer-term (post-application) exposures
- spray usually with a knapsack sprayer
- cannot be monitored by the competent authorities to the extent professional users are.

Hence, this had led to creating user categories, as reported by some countries, in particular in the EU: as required by EC pesticide regulation 1107/2009 (Article 31, section 4d), since 2011, a differentiation in the authorisation of PPP is now made based on categories of users which consist of professional and non-professional users. Hungary mentioned that plant protection products are classified into three user categories, with "user category III" including the non professional uses that are permitted with minimal safety equipment. A national guidance document on user category classification is available and uses a score system which includes the several criteria such as: the effect on the environment, application management (including potential resistance issues), flammability, pre-harvest interval and re-entry period.*"*

Therefore, based on the user categories, measures have been generally put in place to restrict the access and availability of pesticides to non-professionals. In the EU, as per the Framework Directive on sustainable use of pesticides (2009/128/EC), "*the Member States shall take necessary measures to make sure that sales of plant protection products authorised for professional users are only sold to persons holding a certificate providing evidence of expert knowledge*."

(b) Authorisation/registration by active ingredient/product

Most countries indicated that authorisation is granted on the basis of the hazardous properties and classification of the products. In EU countries, this is reflected in the above-mentioned Directive (2009/128/EC) that encourages e.g. "*pesticides of low toxicity*". Australia referred to its poison classification whereby "*only those products where there is a low or moderate risk of harm*" should be available to non-professionals, and thus providing an access barrier. Denmark

mentioned that ready-to-use formulations may not have any health classifications; and added that if concentrates are used, only products without serious health classifications are authorised for non-professionals, i.e. "*such products may at the most be classified as local irritants or as skin contact allergens but should not have this effect after dilution*". Some countries provided detailed criteria, such as:

- In Belgium
  Products for amateur uses should not be classified as CMR: R45 (carcinogenic), R46 (mutagenic), nor R60 or R61(toxic for the reproduction), explosive, highly flammable, very toxic, toxic or corrosive.

- In Italy
  - for non–professional uses on ornamental plants: limitations on the product's classification are established, admitting only Xi (irritant to eyes?) -R38 and/or N products
  - for use on edible crops, the appropriate certified training is necessary to buy and use PPPs classified as Xn (harmful to health), T or T+.

- In Japan
  a formulation intended for home gardening uses will not be registered when it meets one of the following criteria:
  - Acute oral toxicity test: LD50 ≤ 300 mg/kg
  - Acute dermal toxicity test: LD50 ≤ 1,000 mg/kg
  - Acute inhalation toxicity test: LC50 ≤ 1.0 mg/L (4hr)
  - Skin sensitization test: positive ratio ≥ 75 %

- Germany provides a comprehensive list of requirements concerning the properties of the plant protection products in the field of "health" and in the field of "environment".
  - For health reasons, this country follows the approach of the above-mentioned countries, i.e. "*Plant protection products which are labelled as very toxic, toxic, corrosive or sensitizing (chemical active substances) can generally not be authorised*".
  - In the field of environment, Germany states that "*Considerable disadvantageous effects on non-target organisms are considered as critical for applications in home gardening, even if these only occur for a limited period. Generally plant protection products which carry a low risk should be authorised for home gardening (...). ...the following specific requirements apply (...):*
    a) Plant protection products which are classified as hazardous to bees because they belong to categories B1 and B2 are generally not allowed to be authorised for use outdoors.
    b) Systemic products with insecticidal properties (including granules for spreading, products for watering and wiping applications, sticks etc) which are intended for use outdoors on flowering plants are not allowed to be used as long as harmful effects cannot be excluded when the flowers are visited by non-target organisms.
    c) Due to the danger of plant protection product entry into water, the use of plant protection products on paths and public places cannot be authorised.

d) In general, uses which require additional risk mitigation restrictions to protect terrestrial organisms (including birds and mammals) cannot be authorised due to the strict requirements concerning the correct implementation of restrictions.
e) Plant protection products with active substances for which the risk assessment shows that, having taken into consideration the specific conditions of application for home gardening, there is a strong run-off tendency which would require mitigation measures, cannot be authorised for home gardening.
f) Uses which require buffer zones to water greater than 10 m according to the risk assessment for the protection of aquatic organisms cannot be authorised for home gardening."

(c) Authorisation/registration by use

Most, if not all, countries indicated that ensuring appropriate packaging and adapting formulations can, following a risk assessment, reduce exposure and risks for non-professionals by helping to avoid both dangerous handling operations and inappropriate storage of half-full containers, including leaking and further re-use of badly stored products. In the European Union, this is again reflected in the EU Framework Directive (2009/128/EC) that promotes e.g. "*ready to use formulations*" and that encourages setting "*limits on sizes of containers or packaging*." Responding countries have reported and further explained similar approaches for risk mitigation:

√ **Limiting the volume of the container**
In Japan, the volume of a container of the formulation intended for home gardening uses should meet the following requirements:
- *Insecticides and fungicides: 1-2 kg for granular formulations, 100 g for wettable powder, and 100 ml for liquid formulations such as emulsifiable concentrate*
- *Herbicides: 3 kg for granular formulations, 100 g for wettable powder, and 200 ml for liquid formulations such as emulsifiable concentrate*

Note: there is no specific requirement for the volume of a container for ready-to-use formulations such as sprayer and aerosol sprayers.

√ **Limiting the maximum area that can be treated with one single container**
Although this is correlated to "limiting the volume" as described above, some countries express the approach by setting a maximum surface of use.
Denmark specifies the maximum area of 1000 m^2 (i.e. *products may only be sold in packages corresponding to treating a limited area of maximum 1,000 m^2*) while Belgium and Germany indicate 500 m^2. Germany added that "*At least one packaging size for treating small areas must be available ($\leqslant$ 100 m^2 for applications outdoors or $\leqslant$ 10 m^2 for applications in greenhouses or indoors).*"

√ **Limiting the product concentration / dose**
In Italy, limitations are set to "*until 1000 ml/g for PPPs ready to use and until 100 g/l for PPPs not ready to use*".

√ **Restricting some formulations**
Belgium reported that powder is generally not authorised.

√ **Encouraging some packaging options**
Belgium mentioned a number of possibilities, e.g.
- bottles should be equipped with child resistant caps
- bags should be reclosable
- PPP should be equipped with graduated scoops

Germany also recommended:
- ready-to-use products in trigger spray bottles
- plant sticks
- ready-to-use products for wiping or spreading
- other requirements related to the suitability for dosing, i.e. to calculate and check the application rate e.g. using a measuring device such as measuring spoon, indicating statements such as "*spray until visibly wetted*" instead of being stated in metric units (e.g. in ml/m²).

Canada has required, for certain domestic class rodenticides:
- domestic class products be packaged with one or more tamper-resistant bait stations, e.g., tamper-resistant for children and dogs.

Further to packaging and dosing options, countries also mentioned other use conditions:

√ **Specifying the location of use**
Canada indicated that "*Domestic class products are marketed to consumers for use in and around a dwelling*".
Germany specifies that "*If a plant protection product is to be used indoors, it must be assured that any contamination of the air indoors does not have a lasting effect.*"

√ **Setting re-entry interval to zero following application**
Canada mentioned that *"a restricted entry interval following application should not be required for domestic class products."*

√ **Restricting spraying equipment**
Germany indicated that its "*definition of uses for spray applications specifies the use of handheld, portable equipment".* These restrictions of use are tailored to the specific conditions of home gardening.

(d) Labelling requirements

All countries reported specific labelling requirements for products to be used by non-professionals. Generally speaking, countries indicated that labels should include statements on whether the product is authorised for use by non-professionals or professionals. This is done in one way or another. Germany indicated that if a plant protection product has been found to be suitable for non-professional users for home gardening, the packaging should clearly read "*Use authorised for non-professional users*" (while for professional users in home gardening, it would read "*Use authorised only for professional users*"). In Canada, labels for non-professional uses would be marked as "Domestic" while labels for professional uses are marked as either

"Commercial" or "Restricted". In the US, the product labels would mention the statement "*Restricted Use Pesticide*" indicating that the product cannot be bought or applied by homeowners. Hungary mentioned that the label should specify the user category(ies). Australia reported that "*APVMA requires label statements on a range of chemical products restricting use in home garden or domestic situations. Use of the types of products in these situations would be contrary to the label instructions.*". Australia added that "*non-professional pesticide uses are only subject to generic controls i.e. all chemical products must be used in accordance with any instructions on approved product labels or conditions of a permit*."

Regarding the actual content of the label, some countries provided examples on what is required.

- Norway indicated that "*the label must contain information on such as how to use the product, hazard statements (if applicable), personal protective equipment (if applicable), requirements for storage of the product and disposal practices*".
- Canada mentioned that domestic class products must be acceptable for use without any requirement for personal protective equipment (PPE) or a restricted entry interval following application.
- Belgium reported that a standardized labels with 3 parts (Identity / Use / Security) is mandatory on the bottle or attached to it. And mentioned the following requirements:
  - *dosage to be expressed in the simplest way with g/L or ml/L and indication consumption of the product in L/m2 or granules/m2*
  - *areas to be expressed in are or in m2, never in hectare*
  - *standardized names of plants and pathogens to be used*
  - *clear instructions to be given for a safe use with respect to health and the environment*
- Italy reported on the range of possible sentences on labels:
  - *Store in original container, tightly closed, in a place inaccessible to children and away from food, feed and beverages.*
  - *Do not eat, drink or smoke when using the product; avoid inhalation and any kind of direct contact.*
  - *In case of contamination, washing the contaminated area is recommended as a first intervention.*
  - *In case of accidental ingestion or illness resulting in exposure, consult the doctor and show him the product's label.*
  - *Do not apply in windy conditions.*
  - *If the product is used indoors, ventilate the room after application.*
  - *Avoid spraying the areas around ornamental plants and clean the surfaces possibly contaminated.*
  - *Do not use on edible crops and, in general, in agriculture.*
  - *After use, do not dispose of either the container or the remaining contents into the environment.*
  - *Do not reuse container.*
  - *Do not release to the environment.*

In 2006, the 4th Seminar on Good Pesticide Labelling provided a number of country experiences with non-professional uses.

Canada stressed that "*Labels in clear language and mindful of different users (e.g. home and garden, commercial, industrial and agricultural) can contribute to risk reduction.*"

"*(…) the UK's pesticides regulatory authority, commissioned a study on the effectiveness of labelling of pesticides in order to learn about consumer understanding of labels (the Effectiveness of Labelling Pesticides, HSE Contract Research report 390/2001). This study carried a survey of 64 UK product labels of both professional and amateur (home and garden) pesticides and biocides.*
(….) Most warning labels express safety information as instructions. For example, risk expression as a personal instruction is better than a sentence in passive tense, e.g. "You must not use near animals" is more effective than "Do not use near animals". The study also found that amateurs and professionals use and understand labels differently. While products for professionals should include supplemental directives to increase compliance, for amateur user safety information should not be presented in additional leaflets."

In the US, "*one study from food labelling showed that 30 percent of consumers read labels, 30 percent do if taught to do so, and 30 percent never read them. In order to make household product labels easier to read, understand and use, US EPA launched the Consumer Labelling Initiative (CLI) with partners including state agencies and industry. Consumer research studies were carried out including 135 in-depth interviews with product users, to learn how to provide clear information on labels. The main findings included:*
• first aid information was read only when there was an accidental exposure, and "first aid information" is preferred over "statement of practical treatment";
• the distinction between "caution" and "warning" is not clearly understood;
• consumers with children or pets were more likely to read precautionary labels before purchase;
• consumers did not read disposal directions but did store products out of children's reach;
• consumers do not understand the term "inert ingredients" and prefer less technical words on labels; and
• the font used on labels is too small."

Finally, among the main areas for label improvements, the "*seminar concluded that labels should follow a consistent structure that reflects priority, e.g. first aid information more prominent than generic information, especially for amateur users."*

(e) Disposal requirements

All countries reporting specific disposal requirements for products to be used by non-professionals. In relation to section (d) immediately above, most countries indicated that the label should indicate disposal statements such as "After use, do not dispose of either the container or the remaining contents into the environment" and "Do not reuse container".

However, the way pesticide containers used by non-professionals are handled and disposed of slightly differs among countries.

It mainly depends on whether the container is considered as hazardous waste. This classification varies between countries and may vary even within a country.

- In Canada, if empty, the container can be disposed of in household garbage. But if "*unused or partially used, products should be disposed at provincially or municipally designated hazardous waste disposal sites*".
- In Germany, "*non-professional users have to make use of the well developed public waste disposal system, which also includes a disposal system for hazardous waste*".
- In Belgium, although some differences exist among regions, pesticides and their packaging are considered as (small) "*dangerous waste and cannot be eliminated by means of selective household disposal. Amateurs and non-professionals must therefore go to specific container parks or mobile trucks collecting chemicals and other dangerous waste."*

Hungary reported that the disposal procedure depends on the size of the container, i.e. plastic bottles which are 1 liter or smaller can be disposed as domestic rubbish, and the bigger pesticide bottles will be collected and disposed of by a company founded by the pesticide manufacturers.

Disposal of pesticides and their packaging are generally free of charge for the non-professional users.

In 2003, the 1st OECD Seminar on Compliance also mentioned some compliance issues associated with disposal aspects:
"*Pesticide Action Network and BEUC (European Consumers Union) also noted that some countries have insufficient disposal facilities for leftover home and garden pesticides, which leads to non-compliance in product storage*."

In 2004, the 3rd Seminar on Container Management further discussed disposal aspects in relation to pesticide container management and mentioned that "*Both agricultural and home and garden uses were considered, while taking note of the fact that different mechanisms of container management are required by different uses and users.*"

That same Seminar in 2004 provided an example of a study done in the home and garden sector in the UK by PAN-UK: "*PAN UK presented their work in identifying container management problems and solutions in the home and garden sector in the UK. Knowing that 6 pesticide active ingredients were withdrawn in July 2003 representing 81 different products, they were concerned about improper storage and disposal of these withdrawn products and their containers. Often they remain in people's sheds indefinitely, or are disposed of inappropriately.*
PAN UK conducted national and local surveys which helped build a greater understanding of the problem. The results of a survey carried out in a region that has facilities for the disposal of household hazardous chemicals showed that; 56% of the households have obsoletes and containers requiring disposal, 52% will store them indefinitely, 2.7% pour down the drain, 16% dispose along with other household waste, 74.7% would use a local authority disposal facility if they knew it existed, but 84% had no knowledge about the household chemical disposal facility of their local authority.
PAN took the lead in providing a solution for the disposal of home and garden products and their containers. They worked with the national government (Pesticide Safety Directorate), local government authorities, industry (Crop Protection Association), and retailers. Special emphasis was placed on raising awareness of local authority employees who often did not know about the

disposal service they provide, and retail workers so that they could better advise users about disposal options at the time of purchase.
They profiled best case examples of disposal facilities to encourage more local authorities to provide the service. PAN has also created the first database of UK disposal facilities. This is a resource that allows the public to find the nearest disposal facility and encourages households to dispose of pesticides and their containers safely."

(e) Other requirements

In the survey, Norway indicated that the fees for products for non-professionals were higher than the fees for professionals.

B. Official data with respect to incidents on health/environment caused by the non-professional use of pesticides

The second part of the questionnaire focused on data on incidents caused by non-professional users of pesticides.

Seven out of the eleven responding countries indicated that they collect such data. These are: Belgium, Canada, Hungary, Italy, Japan, New Zealand and Norway. In particular:

- In Hungary, the "*Health Toxicological Information Service (HTIS) has a database which keeps record of all pesticides poisoning in all three (user) categories"*.
- In Italy, "*the official observing and monitoring system detects separately the incidents on health/environment caused by the use of PPPs on ornamental plants in home/private gardens and the incidents caused by the all other uses of PPPs (in agriculture or extra-agriculture)."*
- In Japan, "*the Ministry of Health, Labor and Welfare conducts yearly survey on incidents caused by household chemicals, including pesticide for home gardening."*

In addition, both Australia and Germany mentioned intoxication reporting programmes.

- In Australia, "*APVMA operates a national adverse experience reporting program and some states & territories also collect data on complaints concerning pesticide use. However these complaints are not categorised according to whether they involve professional vs non-professional use.*"
- Germany mentioned that the country collected general data on intoxications, but not related to non-professional uses in particular.

Reasons for the incidents

Countries were then asked to present the main reasons for these incidents caused by the non-professional use of pesticides. The main general reason that was mentioned several times was: inappropriate use or misuse i.e. not following the label instructions.

Regarding health incidents, the following reasons were provided.

- direct exposure to the pesticide during application (e.g., splashed in person's eyes or on skin, or inhalation of dust, etc.) (Canada)
- post-application exposure from contact with a treated area (e.g., walking across a lawn that had been treated with a pesticide) (Canada)
- suicide attempts (Hungary)
- improper storage including pouring off the product in a container other than the original not properly marked nor properly stored (Italy)

Regarding environmental incidents:

- Canada indicated reported plant damage from direct application of a pesticide to a lawn or garden
- New Zealand noted that the reporting of the environmental incidents was very poor. "*The incident data collected by the EPA does not provide enough information on environmental effects and there are no other data sources currently available."*

Some countries (Belgium, New Zealand and Norway) reported on the difficulties of collecting specific data regarding non-professional uses and thus of getting an accurate picture. The reasons were many:

- Belgium noted that the poisons centre collects data not only on plant protection products but also on biocides (such as insecticides and rodenticides), and that a number of organisations are involved in pesticides issues.
- New Zealand noted that several tracking processes were in co-existence: through medical practitioners and the national poison centre, hospitals / Ministry of Health, online module for "Hazardous Substances & Lead Notifications", voluntary email notification for any incident involving a hazardous substance, NZ Fire service's Fire Incident Reporting System, media reports.
- In addition, Norway acknowledged that some data could concern professional uses and some data could be reported several times. In addition, it explained that data related to one pesticide product would not be registered when there are less than five incidents for that product.

Finally, two countries, Belgium and Norway, provided some more detailed reports on specific investigations made in recent years (the full cases are to be read in Appendix 1). In summary:

- In Belgium, a specific analysis of the phone calls to the national Poisons Centre that are related to poisonous incidents with pesticides were carried out in 2007, 2011 and again for 2014. The programme called " Toxicovigilance" involved follow-up calls after the initial calls to assess the consequences of the incidents, such as the persistence of the symptoms or the recovery. Among the data provided, it is interesting to note the following:
  - In 2003-2006, annually, the national poison center received about 2750 calls related to products identified as "agricultural products"; in 2007-2010, the figure is close to 2400 annual calls, including about a thousand for pesticides.
  - About a third of the calls concerned animal/pet victims – all fatal cases, mainly dogs and cats, belonged to this category and involved molluscicides and rodenticides.
  - Regarding the calls involving children (27%), 2/3 of the cases were about children within the age of 1 to 4.
- In Norway, during 2009 – 2013, 54% of the registered cases/enquiries at the Norwegian Poison Information Centre were related to people in the age group 20-69 years old, while 38% were related to children. It was noted that 63% of the enquires resulted in no form of treatment, 5.7% resulted in treatment by a doctor, 4.3% resulted in treatment at the hospital, 15% resulted in a general answer about toxicity and 9% resulted in "other answers".

Although not directly linked with incidents, Germany reported a "*high degree cases of non-compliance of non-professional users"* with the use of herbicides on paved surfaces such as paved slip roads or pedestrian paths where these products are not authorised.

C. Other issues associated with pesticide non-professional uses and additional relevant information

Previous OECD Seminars identified some additional issues that were not covered by the 2014 survey, such as awareness raising and communication aspects as during the 2003 Seminar on Compliance:

> *"The group agreed that raising awareness was often the most effective approach, in view of the difficulty and expense of enforcement, and that it should involve (...) provision of clear, easy-to-understand information about pesticides, their risks, and the proper way to handle them, for both farmers and amateur users."*
> *(...)*
> *"The group agreed that more and earlier communication is needed to farmers and other stakeholders along the food chain about upcoming decisions and changes affecting pesticide use. Pesticide distributors also need to increase and improve communication to amateur users, who often receive no advice."*
> *(...)*
> *"Several participants suggested that governments should give more attention to pesticide use in homes and gardens, and that both governments and NGOs should use the media to disseminate information about pesticides to the public."*

Further to communication aspects, Germany indicated in its separate documentation that a list of authorised products for non-professional users can be searched on the following on-line database http://www.bvl.bund.de/psmdb

Canada also has an online database in which domestic class labels can be searched by selecting the "Domestic Marketing Type." The database is located at: http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php

Finally, regarding the application process by the registrants, Germany provided some specific information. In particular, it stated that "*the applicant must apply for the authorisation of a PPP for non-professional users and, if appropriate, for professional users as well, and provide special packaging sizes for non-professional users.*" (…) The regulatory authority "*determines the suitability of plant protection products for non-professional users*" and (…) "*can decide, on application, that the use of a plant protection product which is authorised for professional users may also be applied by these users for home gardening if the plant protection product only differs from a product intended for non-professional use due to its packaging size or dosage form. This rule means that large packs are available for professional users which can also be used for home gardening. (...) Applications both for packaging for professional and for non-professional use can be included in the same application. Information must be provided for each packaging on whether it is intended for professional or for non-professional use."*

APPENDIX 1

COMPILATION OF RESPONSES RECEIVED TO THE OECD QUESTIONNAIRE ON REGULATORY REQUIREMENTS FOR PESTICIDES USED BY AMATEURS/NON-PROFESSIONALS

Question 1: Are there any specific regulatory requirements in your country with respect to non-professional pesticide uses?

Country	Yes	No	Comments
AUSTRALIA (1)*	√		
AUSTRALIA (2)*	√		Only agricultural and veterinary (Agvet) chemicals used are registered by the Australian Pesticides and Veterinary Medicines Authority (APVMA), or for which a permit has been issued by the APVMA under the Commonwealth *Agricultural and Veterinary Chemicals Code Act 1994*, ensuring that all Agvet chemicals are used in strict accordance with directions specified on the label of the registered Agvet chemical or directions specified in an issued permit. Under the *Environment Protection Act 1997* and the Environment Protection Regulations 2005: A person must take the steps that are practicable and reasonable to prevent or minimise environmental harm or environmental nuisance caused, or likely to be caused, by an activity conducted by that person. (The application of pesticides, herbicides and veterinary chemicals within the ACT).
BELGIUM	√		It is important to mention that we consider here "pesticides" as plant protection products. Reasons for specific authorizations: − Limited knowledge's about PPP from amateurs − Personal Protective Equipment is generally lacking − In general smaller areas are cultivated by amateurs − Amateurs usually spray with a knapsack sprayer
CANADA	√		
DENMARK	√		

Country	Yes	No	Comments
GERMANY	√		
HUNGARY	√		
ITALY	√		
JAPAN	√		
NEW ZEALAND		√	In New Zealand there is no specific regulatory requirement exclusively applicable to non-professional pesticides uses. Nevertheless the possession, the storage, the sale and the use of dangerous products (including plant protection products) which met certain regulatory criteria (relating to acute toxicity, corrosivity or ecotoxicity) require an approved handler certificate and a tracking system to record the whereabouts use and disposal of products throughout their lifecycle. These regulatory requirements have the effect of limiting access to some dangerous products by the general public. The compliance of the retailer with these provisions is of course critical to their efficiency. More details on the approved handler certificate and the tracking system are available under the following links: http://www.epa.govt.nz/Publications/ER-IS-33-2.pdf http://www.epa.govt.nz/Publications/ER-QG-30.pdf In addition, under the ACVM Act administered by MPI, we would consider residues and efficacy for non professional pesticide trade name products. There are no specific information requirements for such products.
NORWAY	√		
TURKEY		√	
Total (out of 11)*	**9**	**2**	

*Two responses were received from Australia and are reflected in this compilation as:

- Australia (1): response from the national governmental authority (Australian Government Department of Agriculture)
- Australia (2): response from the regional governmental authority (ACT - Australian Capital Territory)

However, Australia is counted as "one country" in the total of responses.

Question 2: Do these regulatory requirements apply to:

(a) authorisation/registration by active ingredient/product (for non-professional uses)
(b) authorisation/registration by specific (non-professional) use
(c) labelling requirements
(d) disposal practices
(e) Other/additional comments

Country	(a)	(b)	(c)	(d)	(e)
AUSTRALIA (1)	√	√	√	√	√
AUSTRALIA (2)	√	√	√	√	
BELGIUM	√	(√)	√	√	
CANADA		√	√	√	
DENMARK	√	√	√	(√)	√
GERMANY	√	√	√	√	
HUNGARY	√		√	√	
ITALY	(√)	√	√	√	√
JAPAN	√	(√)	√*	√*	
NORWAY	√	√	√	√	√
Total (out of 9 countries)**	**8**	**8**	**8**	**8**	

* Japan has labelling requirements and disposal practices for both professionals and non-professionals.
** - Australia is counted as "one country" in the total of responses (see Question 1).
- As New Zealand and Turkey indicated having no specific requirements for non-professional uses in Question 1 above, they are not listed in the table.
(√) means that although the country original response did not show the selection of the regulatory area(s), it is thought to be the case according to the text provided by the country.
Where further information was provided to responses (a), (b), (c), (d) and (e), the tables on next pages include the text.

Further information about question 2(a):

Country	(a) authorisation/registration by active ingredient/product (for non-professional uses)
AUSTRALIA (1)	National registration and approval process by APVMA See also response to 2(e).
AUSTRALIA (2)	Under the Environment Protection Act 1997 and the Environment Protection Regulations 2005: Section 53 Agvet chemical products taken to cause environmental harm—Act, s 5 (b) (1) An agvet chemical product is taken to cause environmental harm if it enters the environment. (2) This section is subject to section 54. Section 54 Agvet chemical products—exception for registration or permit (1) An agvet chemical product is not taken under section 53 (1) to cause environmental harm if it— (a) is registered under the agvet code, part 2; and (b) is being used in accordance with the conditions of registration. (2) An agvet chemical product is not taken under section 53 (1) to cause environmental harm if it, or an active constituent of the product, is being used in accordance with a permit under the agvet code, part 7.
BELGIUM	Belgium indicated that authorisations for pesticides had been changing for the last decade, leading to a (legislative) split in authorisations. Therefore, from September 2015 onwards, only products with amateur-specific authorizations will be allowed to be placed on the market. Characteristics of PPP for amateur use a) Toxicology : No R45 (carcinogenic); No R46 (mutagenic) ; No R60 or R61(toxic for the reproduction), explosive, highly flammable, very toxic, toxic or corrosive. - No powder excluding exceptions - Specific exposure models : expojardins v3_4 UPJ; Revised_UK POEM Model - Only some hazard categories are allowed Some statistics in Belgium: - About 300 PPP for amateur use - 45 enterprises from BE (30), NL (2), FR (2), UK (2), DE (3), IT (2), DK (1) and Canada (1)

Country	(a) authorisation/registration by active ingredient/product (for non-professional uses)
	– ~ 100 active substances – Mainly coming from already existing PPP for professional use (or formerly mixt usage products)
CANADA	"Domestic Use" which is indicated on all relevant product labels, must be reflected in the product registration
DENMARK	Only ready-to-use products or if concentrates only products without serious health classifications that are packaged in a way that will prevent exposure during mixing are authorised for non-professionals. Products for non-professionals can either be ready-to-use products or concentrated products, however ready-to-use formulations may not have any health classifications, and concentrated products may at the most be classified as local irritants or as skin contact allergens and may not have this effect after dilution. If the product is a concentrated product and is classified and labelled for the above mentioned health hazards, it should be apportioned in a way that ensures minimum exposure of the user e.g. dosage bags or dosage device. It must not be necessary to use personal protective equipment to demonstrate safe use in risk assessments. Products may only be sold in packages corresponding to treating a limited area of maximum 1,000 m^2.
GERMANY	http://www.bvl.bund.de/SharedDocs/Downloads/04_Pflanzenschutzmittel/PSM_Haus_und_Kleingarten_EN.html (German supplementary document)
HUNGARY	Plant protection products are classified into 3 user categories in Hungary based on their hazardous properties and the risk assessment. The user category III includes the non professional uses and is permitted with minimal safety equipment. The classification of user categories of the pesticides is based on the national guidance document on user category classification. The guidance is based on a score system which includes the following criteria: - the effect on the environment - application management (e.g. because of the potential resistance of the product, special knowledge is required) - flammability - preharvest interval - re-entry period
ITALY	According to Italys's response to Question 2(b) below: - regarding PPPs for non–professional uses on ornamental plants: there are not limitations on composition in active substances, but limitations on the product's classification are established (admitted only Xi -R38 and/or N) - regarding PPPs for use on edible crops, the appropriate certified training is necessary only to buy and use PPPs classified as Xn, T or T+.

Country	(a) authorisation/registration by active ingredient/product (for non-professional uses)
JAPAN	There is no explicit regulatory requirement with respect to non-professional pesticide uses in Japan. However, the Ministry of Agriculture, Forestry and Fisheries applies the following internal criteria for the registration of formulations intended for home gardening uses by non-professional users: (i) Toxicity In order to protect the health of non-professional users, who may not have good access to personal protective equipments, a formulation intended for home gardening uses will not be registered when it meets one of the following criteria: Acute oral toxicity test) LD50 ≤ 300 mg/kg Acute dermal toxicity test) LD50 ≤ 1,000 mg/kg Acute inhalation toxicity test) LC50 ≤ 1.0 mg/L (4hr) Skin sensitization test) positive ratio ≥ 75 % (ii) Volume of a container – see below Question 2 (b)
NORWAY	The products for non-professional use must be authorised by the Norwegian Food Safety Authority. Usually the inherent properties of the active ingredient and/or the product have already been assessed during the approval of the product(s) for professionals, and this assessment is used as a starting point for assessing the use of the product for non-professionals.

Further information about question 2(b):

Country	(b) authorisation/registration by specific (non-professional) use
AUSTRALIA (1)	APVMA approval process specifies uses. See also response to 2(e).
AUSTRALIA (2)	To use only agricultural and veterinary chemicals registered by the Australian Pesticides and Veterinary Medicines Authority, or for which a permit has been issued by the Australian Pesticides and Veterinary Medicines Authority under the Commonwealth Agricultural and Veterinary Chemicals Code Act 1994.
BELGIUM	Characteristics of PPP for amateur use Packaging : limited in volume (quantity sufficient for 0,05 ha max.) and when appropriate: – bottles are equipped with child resistant caps – bags are to be reclosables – PPP are equipped with graduated scoops
CANADA	Health Canada has specific use site categories and specific data requirements for the safety assessment of domestic class plant-protection products (i.e., non-professional pesticide uses). Domestic class products are marketed to consumers for use in and around a dwelling. Use conditions are determined following a risk assessment. Domestic class products are registered only when no risks of concern are identified for exposure during application and post application. Mitigation measures (e.g. packaging, formulation restrictions) can be applied to reduce exposure and risk, and allow registration if risks are not of concern.
DENMARK	Maximum area 1000 m^2

Country	(b) authorisation/registration by specific (non-professional) use
GERMANY	The authorisation of specific uses is based on a risk assessment which differs in some points in comparison of the assessment of uses for professionals, e.g. regarding risk mitigation measures, due to the probable lack of knowledge (absence of certified knowledge). According to the EU pesticide regulation 1107/2009 (Art. 31 section 4 letter d) a differentiation in the authorisation of PPP has to be made based on categories of users which consist of professional and non-professional users. The sales of pesticides authorised for professional use have to be restricted to users with a certified sufficient knowledge on various aspects enabling a safe use of pesticides with respect to human health and environment (see Articles 5 and 6 of EU framework directive on sustainable use of pesticides 2009/128/EC). To account for the missing expertise of non-professional users "Member States shall take all necessary measures regarding pesticides authorised for non-professional users to avoid dangerous handling operations. These measures may include use of pesticides of low toxicity, ready to use formulations and limits on sizes of containers or packaging." (Art. 13 of 2009/128/EC). In Germany therefore further requirements for PPP explicitly intended to be used only by non-professional users are established in addition to the a set of minimum requirements for placing on the market and use of PPP that has to be covered by the authorisation (see Art. 31 of 1107/2009). Therefore PPP have to fulfil specific requirements be proven for use by non-professional users (please refer to the aforementioned link).
HUNGARY	See above table for Question 2(a).
ITALY	In the current national system, regarding PPPs for non–professional uses on ornamental plants (indoor uses such as at home, in the private terraces and balconies or outside uses in private gardens, also to manage weeds) which can be sold and purchased through garden-centres or supermarket without any special permission, the following authorization requirements are established: there are not limitations on composition in active substances, but limitations on the product's classification are established (admitted only Xi - R38 and/or N) and also limitations in the package size (until 1000 ml/g for PPPs ready to use and until 100 g/l for PPPs not ready to use). Regarding the PPPs for use on edible crops, the current system establishes that the appropriate certified training is always needed for selling them, while, for buying and using, the appropriate certified training is necessary only to buy and use PPPs classified as Xn, T or T+.

Country	(b) authorisation/registration by specific (non-professional) use
JAPAN	There is no explicit regulatory requirement with respect to non-professional pesticide uses in Japan. However, the Ministry of Agriculture, Forestry and Fisheries applies the following internal criteria for the registration of formulations intended for home gardening uses by non-professional users: (i) Toxicity (see above Question 2(a)) (ii)Volume of a container In order to prevent unused formulations from being stocked by non-professional users, who may not be well-trained for proper disposal or storage, the volumes of containers of such formulations need to be smaller than those of formulations used by professional users. For this reason, according to the type of formulation, the volume of a container of the formulation intended for home gardening uses should meet the following: • Insecticides and Fungicides: 1-2 kg for granular formulations, 100 g for wettable powder, and 100 ml for liquid formulations such as emulsifiable concentrate • Herbicides: 3 kg for granular formulations, 100 g for wettable powder, and 200 ml for liquid formulations such as emulsifiable concentrate Note: There is no specific requirement for the volume of a container for ready-to-use formulations such as sprayer and aerosol sprayers.

Further information about question 2(c):

Country	(c) labelling requirements
AUSTRALIA (1)	APVMA approved uses included on product labels. All product label instructions must be followed, unless otherwise allowed by a permit issued by the APVMA. Specifically, the APVMA requires label statements on a range of chemical products restricting use in home garden or domestic situations (Schedule 7 Poisons, Restricted Chemical products). Use of the types of products in these situations would be contrary to the label instructions.
AUSTRALIA (2)	That all Agvet chemicals used are done so in strict accordance with directions specified on the label of the registered Agvet chemical or directions specified in a permit issued by the APVMA under the Commonwealth Agricultural and Veterinary Chemicals Code Act 1994.
BELGIUM	Standardized labels with 3 parts (Identity / Use/ Security) mandatory on the bottle or attached to it. - dosage is expressed in the simplest way with g/L or ml/L and indication consumption of the product in L/m2 or granules/m2 - areas expressed in are or in m2, never in hectare - standardized names of plants and pathogens - clear instructions for a secure use in regard to the health and the environment More info on www.phytoweb.fgov.be
CANADA	Labels for non-professional uses would be marked as “DOMESTIC” while labels for professional uses are marked as “COMMERCIAL” or “Restricted”. Although not specifically stated in the Pest Control Products Act and Regulations (the federal legislation under which pesticides imported into, sold or used in Canada are nationally regulated), Health Canada’s general approach is that domestic class products must be acceptable for use without any requirement for personal protective equipment (PPE). The reasons for this are because users are not trained and also may not have access to PPE or know how to use such equipment. Similarly, a restricted entry interval following application should not be required for domestic class products. In other words, for domestic class products, risks must be acceptable without these additional mitigation measures.
DENMARK	It will be stated whether or not the product is authorised for use by non-professionals or professionals.
GERMANY	If a plant protection product has been found to be suitable for non-professional users for home gardening, according to Article 36 (1) p. 2 no. 2 Plant Protection Act, the following label must be stated on the packaging: "Use authorised for non-professional users".
HUNGARY	Labels must indicate the user category of the pesticide and S 2, 13, 20/21 according to DPD; and P 102, P 270 according to CLP regulation.

Country	(c) labelling requirements
ITALY	Limitations on the classification and packaging are established on PPPs for use on ornamental plants sold and purchased through garden-centres or supermarket without any special permission. The label always includes the following sentences: *- Store in original container, tightly closed, in a place inaccessible to children and away from food, feed and beverages.* *- Do not eat , drink or smoke when using the product; avoid inhalation and any kind of direct contact.* *- In case of contamination, washing the contaminated area is recommended as a first intervention.* *- In case of accidental ingestion or illness resulting in the exposure, consult the doctor and show him the product's label.* *- Do not apply in windy conditions.* *- If the product is used indoors, ventilate the room after application.* *- Avoid spraying the areas around ornamental plants and clean the surfaces possibly contaminated.* *- Do not use on edible crops and, in general, in agriculture.* *- After use, do not dispose of either the container or the remaining contents into the environment.* *- Do not reuse container.* *- Do not release to the environment.*
NORWAY	The labels for products for non-professionals must be approved by the Norwegian Food Safety Authority. The label must contain information on such as how to use the product, hazard statements (if applicable), personal protective equipment (if applicable), requirements for storage of the product and disposal practices.

Further information about question 2(d):

Country	(d) disposal practices
AUSTRALIA (1)	The product must be disposed of as specified on the APVMA approved label (if any instructions) and in accordance with state/territory environment protection legislation.
AUSTRALIA (2)	Disposal of empty Agvet chemical containers and unused or unwanted Agvet chemicals shall be conducted in accordance with the product label (or permit) instructions and the requirements set by the Environment Protection Authority.
BELGIUM	Region Wallonia : sensitization campaigns (every 2 years) to encourage the non professional users to dispose their pesticides packaging and non usable pesticides in "container parks" held by public authorities. In Flanders (Region) non-used non-professional pesticides and their packaging are considered to be "Small and Hazardous Waste". The local authorities are responsible and obliged to set up schemes for the separate collection of this type of waste, whereby citizens can free of charge discard these wastes. In the Brussels Region, empty packaging and unused pesticides by amateurs/non-professionals are dangerous waste within the meaning of Order of 14 June 2012 on waste. Consequently, according to a regulation dating from 19 December 2008, they cannot be eliminated by means of selective household disposal. Amateurs and non-professionals must therefore go to specific container parks or mobile trucks collecting chemicals and other dangerous waste.
CANADA	Standard disposal statements are required on all domestic class products. The current statement for domestic class products is: *"DO NOT reuse the empty containers. Dispose in household garbage.* *Unused or partially used products should be disposed at provincially or municipally designated hazardous waste disposal sites."*
DENMARK	Always stated on the label.
GERMANY	Non-professional user have to make use of the well developed public waste disposal system in Germany, which also includes a disposal system for hazardous waste.
HUNGARY	The plastic bottles which are 1 liter or smaller can be disposed as domestic rubbish, and the bigger pesticide bottles will be collected and disposed by CSEBER Kft. The company was founded by the pesticide manufacturers and its activities cover the 98 % of Hungarian market. The system is designed that way that the disposable bottles are collected free of charge from the end user.

Country	(d) disposal practices
ITALY	The label always includes appropriate instruction as: - *After use, do not dispose of either the container or the remaining contents into the environment.* - *Do not reuse container.* - *Do not release to the environment.*

Further information about question 2(e):

Country	(e) Other / Additional comments
AUSTRALIA (1)	Some states/territories require any use of any pesticides in public places and amenity areas to be carried out by trained personnel in South Australia. In others non-professional pesticide uses are only subject to generic controls i.e. all chemical products must be used in accordance with any instructions on approved product labels or conditions of a permit. Sale and supply, and therefore use of, pesticides is principally controlled by nationally set poisons schedule classifications. Only those products where there is a low or moderate risk of harm, and those risks can be reduced by appropriate packaging, warnings and safety directions included on the label are available to non-professionals. Additional comments: The Standard for the Uniform scheduling of Medicines and Poisons (SUSMP) http://www.tga.gov.au/industry/scheduling.htm as adopted by Australian States and territories provide a uniform standard for classification of, and access to scheduled poisons. Under the standard, there are controls over medicines and high risk products and therefore provides an access barrier to non-professional and non-occupational users of chemicals.
BELGIUM	As all other member states of the EU, Belgium have transposed the article 6.3 of directive 2009/128 : *"Member States shall require distributors selling pesticides to non-professional users to provide general information regarding the risks for human health and the environment of pesticide use, in particular on hazards, exposure, proper storage, handling, application and safe disposal in accordance with Community legislation on waste, as well as regarding low-risk alternatives. Member States may require pesticide producers to provide such information. "* In transposition of article 6.1 of the same directive, Belgium also impose the salers *to have sufficient staff in their employment holding a certificate of knowledge (Phytolicence, in Belgium). Such persons shall be available at the time of sale to provide adequate information to customers as regards pesticide use, health and environmental risks and safety instructions to manage those risks for the products in question.* Additional comments: Region Wallonia : In transposition of article 11.2.d of directive 2009/128, Wallonia imposes the ban of pesticides use on hardened surfaces (public and/or private) connected with sewers (from 1st September 2014).
DENMARK	The requirements have been adopted and must be implemented by 26 November 2015 in accordance with the EU-framework directive on sustainable use (2009/128/EC).

Country	(e) Other / Additional comments
ITALY	New rules are being developed in Italy for the use of plant protection products on edible crops by amateur / non-professional users.
NORWAY	In Norway the fees for products for non-professionals are higher than the fees for professionals. In the Nordic-Baltic Zone in the EU we are currently working on harmonizing our assessment of products for non-professionals.

Question 3: Are there any official data available in your country with respect to incidents on health/environment caused by the non-professional use of pesticides?

Country	Yes	No	Comments
AUSTRALIA (1)		√	The APVMA operates a national adverse experience reporting program, see: http://www.apvma.gov.au/use_safely/adverse/. Some states and territories also collect data on complaints concerning pesticide use. However these complaints are not categorised according to whether they involve professional vs non-professional use.
AUSTRALIA (2)		√	
BELGIUM	√		The calls at the Belgian Poison centre were specifically followed up on a three month period in 2007 and 2011.
CANADA	√		
DENMARK		√	
GERMANY		√	Only general data on intoxications, but not related to non-professional uses in particular.
HUNGARY	√		The Hungarian Health Toxicological Information Service (HTIS) has a database which keeps record of all pesticides poisoning in all three (user) categories.
ITALY	√		In line with the above mentioned national system of authorization, the official observing and monitoring system detects separately the incidents on health/environment caused by the use of PPPs on ornamental plants in home/private gardens and the incidents caused by the all other uses of PPPs (in agriculture or extra-agriculture).
JAPAN	√		The Ministry of Health, Labor and Welfare conducts yearly survey on incidents caused by household chemicals, including pesticide for home gardening.
NEW ZEALAND	√		

Country	Yes	No	Comments
NORWAY	√		
TURKEY		√	
Total (out of 11)*	**7**	4	

* - Australia is counted as “one country” in the total of responses (see Question 1).

Question 4: If yes (i.e. if there are official data available in your country with respect to incidents on health/environment caused by the non-professional use of pesticides), what are the main reasons for these incidents?

(a) no specific authorisation/registration for non-professionals (use)
(b) no or inappropriate labelling
(c) inappropriate disposal practices
(d) Other?

Country	(a)	(b)	(c)	(d)
AUSTRALIA (1)				
AUSTRALIA (2)				
BELGIUM				√
CANADA				√
DENMARK				
GERMANY				√
HUNGARY				√
ITALY				√
JAPAN				√
NEW ZEALAND				√
NORWAY				√
TURKEY				

None of the responding countries chose (a), (b) and (c) options that were suggested but rather provided additional information as shown in the following table.

Further information about question 4:

Country	Main reasons for the incidents caused by non-professional uses
BELGIUM	Inappropriate use

Additional comments:

A specific analysis of the phone calls to the national Poisons Centre that are related to poisonous incidents with pesticides were commanded in 2006, 2011 and again for 2014. The programme is called " Toxicovigilance".

1. Toxicovigilance 2007 - abstract (full reports 2007)
This study was carried out by request of the FPS Health, Food Chain Safety and Environment within the frame of the Federal Reduction programme for pesticides. The greater part of this study is made up of figures on exposures to these products and their consequences.

From 2003 until 2006 included, the Poison Centre received annually 2744 calls (range: 2433-2914) for exposures to products coded as "agricultural products" on the call sheet. This group includes the plant protection products, the biocides and the fertilizers. Noteworthy is the proportion of animal victims (30%). Regarding the calls for children (27%) 2/3 of the cases are about children within the age of 1 to 4. The products with the most exposures to are pest control products (product-type 18 of the biocides), rodenticides, herbicides and insecticides (plant protection products).

To get a better view on the effects of the exposures a follow up by telephone was made during two three-month periods (April-June 2006 and October-December 2006). In these time periods there were 1078 calls for actual exposures of 1143 victims. These calls involved only plant protection products and biocides - no other "agriculture products" like fertilizers. Of the 1078 calls a follow-up by telephone was obtained for 375 of the 1078 calls.
At the first call to the Poison centre the victims had none (45%) or only minor (30%) symptoms. 10% had mild symptoms. Animals (42) and (human) adults (4) had serious symptoms (11%). The fatal cases (3%) were exclusively animals and most of them dogs.
From the follow-up emerges that the vast majority (82%) of exposed victims with symptoms at the first call recovered without permanent symptoms, 3 had persistent symptoms and 23 complementary died.

In the group without symptoms at the first call there were also 2 deaths putting the total of fatal cases to 36 – exclusively animals: 19 dogs, 8 cats, 5 cows, 1 chicken, 1 deer, 1 guinea-pig and 1 rat. The fatal cases could not be attributed to one product in particular.

Country	Main reasons for the incidents caused by non-professional uses

The contacts with poison centres in foreign countries show a heterogeneous picture: Some countries have projects and some of them are still running. This should be explored further.
Also the classification of the biocides should be looked after. In practice the current classification gives quite a lot of problems.
In Belgium there is a heterogeneous group of organisations that is more or less involved with the pesticides/biocides-problematics.

CONCLUSION: From the figures of the (Belgian) Poison centre one can get a picture of the exposures to plant protection products and biocides and their effects. With the experiences of this explorative study it should be possible to start a project for a permanent toxicovigilance programme.

2. Toxicovigilance 2011 - abstract (full reports 2011)
This study was carried out on order of the FPS Public health, Food chain Safety and Environment within the framework of the federal Programme of reduction of the pesticides and biocides. The major part of this study includes the supply of statistics of exposure to these products and their consequences.

From 2007 to 2010 included, the Antipoisons Centre recorded on average 2394 contacts a year (range: 2101 - 2754) for exposure to plant protection products and biocides. For the plant protection products and biocides, the average amounted respectively to 969 and 1425.

An important proportion of the calls is due to animals poisoning (37%). For the children (26% of the calls), 2/3 are aged between 1 and 4 years. The products for which the exhibitions are most numerous, are the pest-control biocides (group 18), the rodenticides, the herbicides and the insecticides.

For the period from April to September 2011, a telephone follow-up was carried out to have a better idea of the consequences of the exhibitions. During this period, one counted 1376 calls for effective exhibitions, with 1475 exposed people. Among these calls, 338 were the object of a telephone re-call.
At the time of a first call, 53% did not present any symptom and 28% only minor symptoms. For 12% of these re-calls, the symptoms were moderated and for 4% of them, they were serious. The 15 fatal cases (1%) were observed exclusively with animals, mainly in the dogs. Five of these cases could not be contacted for various reasons.
After the follow-up, 16 fatal cases still came to be added. On the whole, we have 26 fatal cases, for which we have detailed information. For 14 case, the causal relation with the toxics was manifest.

Country	Main reasons for the incidents caused by non-professional uses
	With only one exception, these cases were due with molluscicides and rodenticides. The follow-up of the exposures to biocides is sometimes problematic. It is not always obvious to determine which products belong to this group and which are not part of it. CONCLUSION: The statistics of the Antipoisons Centre make it possible to obtain an image of the type of acute intoxications to plant protection products and biocides in Belgium. The data are however insufficient to have a complete view of the consequences of these exposures. 3. Another study is on-going in 2014 On the basis of current information, it is not considered that there would be more problems with pesticides and biocides than with any other consumable. For the time being, it is unlikely that major problems would arise because of specific authorisation/registration for non-professionals (use) failure, as both pesticides for agricultural use or biocides are highly regulated and law enforcement is strict. However, final conclusions are awaited at the end of the planned study.
CANADA	The main reasons for the incidents on health are: 1) direct exposure to the pesticide during application (e.g., splashed in person's eyes or on skin, or inhalation of dust, etc.) 2) post-application exposure from contact with a treated area (e.g., walking across a lawn that had been treated with a pesticide). For environmental incidents, the main reason is plant damage from direct application of a pesticide to a lawn or garden.
GERMANY	According to § 12 (2) Plant Protection Act PPPs may not be applied on paved surfaces, unless the specific use has been allowed by the competent authority of the federal state. However, enquiries of the federal states showed, a high degree of non-compliance of non-professional users with this use restriction especially the prohibition of use of herbicides on paved surfaces such as paved slip roads or pedestrian paths.
HUNGARY	Main reasons for the poisonings are the following: - suicide attempts - using instructions are not followed
ITALY	Regarding the above described PPPs to amateur/non-professional use on ornamental plants, the main reasons for incidents are misuse, improper storage, pouring off the product in a container other than the original not properly marked nor properly stored.
JAPAN	Reasons for the incidents are not available, because the survey provides only the summary (e.g. number of incidents) and case studies.
NEW	Under the NZ legislation (section 143 of the HSNO / Hazardous Substances and New Organisms Act 1996) any disease or injury caused by a

Country	Main reasons for the incidents caused by non-professional uses
ZEALAND	hazardous substance must be reported by a medical practitioner (including the National Poisons Centres) or by the hospital in charge of the patient to the Medical Officer of Health who ensures that information is well supplied to the Minister of Health. In practice, these notifications are made online via the 'Hazardous Substances & Lead Notifications' module on the "bestpractice Decision Support" dashboard. So the incidents caused by the non-professional use of pesticides may be covered by this tracking process if a physician is consulted. A model of the notification is available under the following link: https://surv.esr.cri.nz/episurv/CaseReportForms/HSI-Sept2007.pdf Anybody can also voluntarily notify an incident involving a hazardous substance by sending an email to HSincidents@epa.govt.nz (this notification is in free text). EPA collected also reports from HSNO enforcement agencies (Ministry of Business, Innovation and Employment, Ministry of Health, Ministry for Primary Industries, local authorities), from the NZ Fire service's Fire Incident Reporting System (FIRS) or media reports. The reporting of the environmental incidents is very poor. The incident data collected by the EPA does not provide enough information on environmental effects and there are no other data sources currently available. For more information, see the last HSNO monitoring report 2013: http://www.epa.govt.nz/about-us/monitoring/Pages/Hazardous-substances-incidents.aspx or the EPA webpage on incident reporting: http://www.epa.govt.nz/about-us/monitoring/Pages/Hazardous-substances-incidents.aspx
NORWAY	On the label of all plant protection products authorised in Norway (both for professionals and non-professionals) it is specified that in case of an accident, the user should contact the Norwegian Poison Information Centre or seek medical advice. Thus, for many of the accidents related to plant protection products there is some information available. However, it is important to keep certain things in mind when using the information available from the Norwegian Poison Information Centre: – In general, the enquiries/cases registered at the Norwegian Poison Information Centre should not be regarded as a total overview of all accidents related to PPPs in Norway. Many of the accidents may not be reported to the Norwegian Poison Information Centre but rather at other health institutions. In addition, some cases/accidents may be registered several times, because on case may lead to multiple enquiries. – The information presented below is for products for non-professionals. However, the data may contain some enquiries which are related to products for professionals because the user does not always know the specific name of the plant protection product. – In addition, some enquiries may not be accounted for in the data presented below, because enquiries related to a PPP is only registered

Country	Main reasons for the incidents caused by non-professional uses

when there has been a total of 5 enquiries for that specific PPP. So if there has been only 1-4 enquiries/cases registered for a product for non-professionals, it will not be accounted for in the data below.

Data on enquiries/cases on products for non-professionals registered at the Norwegian Poison Information Centre:

- In the period of 2009 – 2013, 87.5% of the cases registered at the Norwegian Poison Information Centre were described as "accidents". 4.7% of the registered cases were "accidents related to work" and 3.3% of the registered cases were self-inflicted or caused by misuse.
- In the period of 2009 – 2013, 54% of the registered cases/enquiries at the Norwegian Poison Information Centre were related to people in the age group 20-69 years old, while 38% were related to children.
- In the period of 2009 – 2013, 63% of the enquires resulted in no form of treatment, 5.7% resulted in treatment by a doctor, 4.3% resulted in treatment at the hospital, 15% resulted in a general answer about toxicity and 9% resulted in "other answers".

Contact information

Country	Authority	Name
AUSTRALIA (1)	Australian Government Department of Agriculture, Agvet Chemicals Policy	Donald Ward
AUSTRALIA (2)	Australian Capital Territory Environment and Sustainable Development Directorate	Stella Williams
BELGIUM	Federal Public Service (FPS) Health, Food chain safety & Environment	Vincent Van Bol
CANADA	Health Canada's Pest Management Regulatory Agency [PMRA]	Martha Farkas
DENMARK	Environmental Protection Agency	Vibeke Møller Krista Bøgebo
GERMANY	Federal Ministry of Food and Agriculture	Dr. Wolfgang Zornbach
HUNGARY	Ministry of Rural Development	Andras Gyeraj
ITALY	Ministry of Health	Gisella Manzocchi
JAPAN	Ministry of Agriculture, Forestry and Fisheries	Masashi Kusukawa
NEW ZEALAND	Ministry of Primary Industries (MPI-ACVM) & Environment Protection Authority (EPA)	Warren Hughes Christophe Rosiers
NORWAY	Food Safety Authority	Sara Leeves
TURKEY	Ministry of Food, Agriculture and Livestock	Mehmet Culcu

ANNEX 5

Please refer to separate publication for full Annex 5 ENV/JM/MONO(2017)3/ANN

List of presentations

OECD Seminar on Risk Reduction and Pesticide Non-professional Uses 9 December 2014, OECD, Paris, France

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Presentation 2
Outcomes of OECD Survey & other relevant OECD Activities *(Beatrice Grenier, Consultant to the Secretariat, OECD Pesticides Programme)*

2) Authority/Regulatory perspectives

Presentation 3
The German concept for the authorization of PPP for non-professional uses *(Rolf Forster, Federal Office for Consumer Protection and Food Safety (BVL), Germany)*
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Presentation 8
The use of pesticides in German leisure gardens – a view into the gardens of the association's members *(Martin Breidbach, Verband Wohneigentum e.V. - national home ownership association, Germany)*