

News

Biocide regulation – PAN campaigns for alternatives on biocides

After the European Parliament (EP) adopted its first reading resolution on the biocide regulation on 22 September 2010, the Environment Council agreed its position concerning this revised EU authorisation regime for products like household insecticides or antibacterial cleaners on 20 December. PAN welcomes some of the amendments, but calls for further improvements because the protection of human health and the environment is still disputable.

In the months leading up to the agreement of the Council's position, PAN Germany, PAN Europe and its supportive NGO partners have initiated several calls for an EU biocide regulation that will ensure the consistent protection of humans and biodiversity. The EP supported some of these demands in its first reading. In particular, members of the European Parliament (MEP) voted for the exclusion of environment-related, highly hazardous biocides (cut-off regime) like highly persistent and bio-accumulative chemicals. The EP also agreed on a specific need for the protection of vulnerable groups like children. Furthermore, the EP voted for establishing innovative substitution plans that promote the dissemination of sound alternatives in pest management, and it adopted a binding EU-initiative for the sustainable use of biocides. However, these encouraging amendments are inadequate due to vague derogations. As a consequence, highly hazardous biocides will still be able to obtain approval. Essential data requirements for identifying risks of biocides will be waived. Toxic biocidal products will be able to gain EU-wide



PAN Germany *Choose alternatives* Biocide campaign logo

authorisation and the weak labelling standards for biocide treated articles won't ensure transparency and safety for consumers. While the Council's position partly addresses the shortcomings concerning the data requirements and also considers risks of chemical mixture effects, it fails to overcome the loopholes of the cut-off regime. As regards to the substitution principle, it does not require the replacement of (developmental) immuno- and neuro-toxic substances. Products of high concern will be able to gain authorisation for wholesale and there are no convincing efforts to minimise the use of biocides across Europe. Thus, PAN and its supportive NGOs have sent an open letter to the Council and Ministers in order to urge them for an effective ban and replacement of hazardous biocides.

This has to compliment intelligent strategies that ensure the development of non-chemical alternatives and that prioritise preventive measures and risk reduction measures. For this purpose PAN calls for establishing both an EU Framework Directive on the sustainable use of biocides and substitution plans. EP and Council shall agree on this in the second reading of the regulation during the coming year.

Christian Schweer, PAN Germany

For details of the campaign, see:
www.pan-germany.org/gbr/project_work/biocide_policy_europe.html
www.pan-europe.info/Campaigns/biocides.html
or email:
christian.schweer@pan-germany.org

Pesticide residues keep on being a food risk – findings by the EFSA

The European Food Safety Authority (EFSA) published their 2008 Annual Report on Pesticide Residues this July. The EFSA report summarised the results of analyses from the 27 EU member states plus Norway and Iceland. The report contains the results of national surveillance programmes. It also presents the results of an additional EU-wide co-ordinated testing programme which tests a range of different products each year. In 2008 oranges, mandarins, pears, potatoes, carrots, cucumbers, spinach, beans without pods and rice were part of the additional coordinated testing programme. 11,610 samples were analysed across Europe, as comparatively as possible, testing for 78 pesticides. The exceedance of maximum residue limits (MRL's) for these samples was 2.2% which means this 2.2% was illegally put on the market and consequently consumed by the public. The highest exceedance was for spinach (6.2%) and the lowest for potatoes (0.5%).

The analysis results of 687,887 of the national surveillance samples were summarized by EFSA, as well as 2,256 'enforcement' samples. The MRL exceedance for fruit and vegetables was 3.7%. This is slightly higher than the coordinated EU-wide programme and might be due to the higher number of pesticides analysed (varying from 39 – 679 in different countries).

The average MRL exceedance percentage of all fruit and vegetable samples was 3.5% and is slightly lower than previous years (2007: 4%, 2006: 5%). It is however difficult, or even impossible, to make a comparison between these years. In 2008 the EU went through a massive relaxing of the residue standards to achieve EU-wide harmonisation. The harmonisation process resulted in the weakest standard available within an EU member state, becoming the highest EU harmonised standard. Standards were lowered as much as 1000 times. Tens of thousands of standards were revised in this process, so it is not possible to know if the exceedance percentage went up or down.

What we do know is in 53.3% of products (fruit, vegetables, cereals) no residues were found. This is the good news and several food items like cabbage or cereals can be eaten without risk of pesticides. The bad



news is that 26.7% of the food contained multiple residues, 10.9% contained 2 residues, 6.5% contained 3 residues, 4.2% contained 4 residues, etc. A sample of grapes analysed in Germany even contained 26 different pesticides. What makes this worrying is that the EFSA does not calculate the health risks of exposure to multiple residues – only single exposure to individual pesticides in foods. This makes the whole assessment of risk by the EFSA unscientific and useless. Every citizen eating everyday foods will be exposed to dozens of pesticides daily and the EFSA risk assessment should include the effects of all these cocktails of chemicals.

Most worrying is that the EFSA itself is the organisation blocking the evaluation of the pesticide cocktails. In the 2005 Residue Directive, the EU decided that cocktail effects should be taken into account to protect consumers against the risks. But, unfortunately, the EU also decided that the EFSA is the institute to come up with methods to assess the cocktail effects. While several methods are available and in use in the USA (combined effects of the big group of organophosphate pesticides), the EFSA up to now, 5 years later, fails to put forward evaluation methods. The EFSA simply continues to publish its annual reports while saying more information is needed. This highly irresponsible attitude puts consumers at risk.

In the report, the EFSA finds the nerve toxin Diazinon exceeds health standards in people's diets. By

introducing assumptions about what could happen in processing the food, the EFSA declares Diazinon consumption "safe" at the end point. Diazinon is a potent nerve toxin of the group organophosphates and independent research shows that Diazinon even in low doses can harm human development especially the brain. Children and the unborn risk being irreversibly affected. Firstly, it should be questioned if this scientific literature is taken into account by EFSA because generally EFSA bases their opinions on industry laboratory tests. Secondly, the doses of Diazinon might produce a harmful cumulative effect with those of other organophosphates like Chlorpyrifos, Malathion and other organophosphates which are found in many food products.

There is no way anyone can conclude all food on the shelves is safe. Without the combined effects of pesticides being assessed, the current assessment system is futile. Governments and government institutes tend to say food is safe, that everything is under control and consumers need not worry. This is probably the reason why they are not trusted. In this 2008 report, the EFSA is perpetuating this decade-long tradition. People in Europe know better. In the EU barometer citizens of Europe (65%) still see pesticide residues as their number one health concern. Concerns of citizens must be taken more seriously by the EFSA.

Hans Muilerman, PAN Europe Chemicals Policy Officer

14 December is NAP day!

The 14th December marks the date for crucial deadlines in the implementation of the Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides:

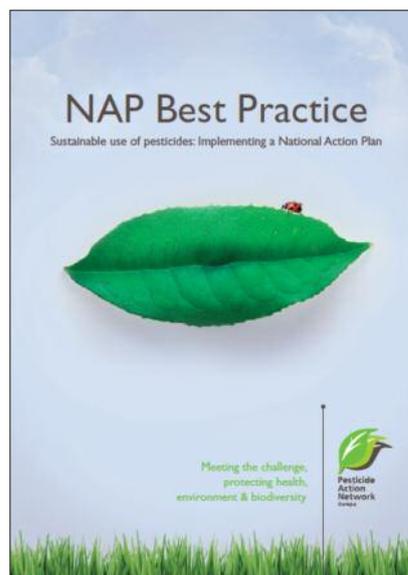
- o One year from now, by 14 December 2011, Member States have to bring the directive into accordance with their national law (article 23), and
- o Two years from now, by 14 December 2012, have to communicate their National Action Plan to the Commission and to other EU Member States (article 4.2).

These deadlines might seem far away, but there is a lot of work required by Member States in order to meet these deadlines.

Earlier this year, PAN Europe developed a best practice NAP manual (pictured). This publication

contains examples of what is already being successfully done in Member States. See www.pan-europe.info/Resources/Reports/NAP_best_practice.pdf to download your copy. We are regularly updating this with more details. As part of PAN Europe's engagement with Member States on the development of their NAP's we also arrange meeting allowing stakeholders to exchange experience at a practical level, identify problems and solutions and together discuss feasible ways forward.

PAN Europe is concerned about the unequal implementation of the new Framework Directive across the EU. On the 14 December, we wrote a joint letter with HEAL, to EU Health Commissioner John Dalli, asking him to take a more pro-active role in protecting citizens from the effect of pesticides and and to make pesticides one of his 2011 priorities.



PAN Europe NAP Best Practice guide to implementing a National Action Plan

Henriette Christensen, Senior Policy Adviser, PAN Europe

The Common Agricultural Policy communication - a lost opportunity to show the real potential of Europe's agricultural sector

The 18th of November saw the release of the European Commission's Communication, COM (2010) 672, on future CAP reform, 'The CAP towards 2020: Meeting the food, natural resources and territorial challenge of the future'.

While the proposal does endorse permanent pasture, green cover, crop rotation and ecological set-aside to become mandatory "greening" components of direct payments, the real potential of such an approach is not truly realised.

EU citizens believe that environmental protection needs to be an element of the Common Agricultural Policy (Special Eurobarometer 336, March 2010). Also, EU citizens continue to consider pesticides residue levels in fruit, vegetables and cereals as their main concern regarding food related risks (special Eurobarometer 354, November 2010).

As a result the only sustainable agricultural policy option to be considered is supporting farmers technically, morally and financially for delivery of public goods such as:

- o permanent coverage, green manure, minimum or no tillage, crop rotation, to preserve soil and soil fertility;



- o mineral input reduction, biobeds, cover-crops to protect water; and
- o crop rotation, hedges, intercropping, mixed cropping, maximum field size, use of biological control agents to protect biodiversity.

PAN Europe has been closely involved in, and will continue to campaign for, a reformed CAP that reduces dependency on pesticides and promotes a truly sustainable agriculture. From 2014 it will, according to Directive 128/2009 on sustainable use of pesticides, be mandatory for all EU farmers to apply integrated pest

management. For us this means that each EU farmer needs to take a 'system approach' to farming, starting with delivery of a (certified) plan to drastically change methods and deliver practices which take a 'prevention first' approach (rotation with nitrogen-fixing crops); choose resistant crop varieties; and make use of biological control. The majority of organic farmers are already taking a systematic approach to farming – so why not let organic farmers lead the way for conventional farmers?

Henriette Christensen, Senior Policy Adviser, PAN Europe

Decline of the bees: a new resolution from the European Parliament a good start for the further debate

Beekeeping plays a strategic role in society, providing a public service of environmental value, and beekeeping is a valuable example of a 'green occupation' (improving and preserving biodiversity and the ecological balance and conserving plant life) and a model of sustainable production in a rural environment. Agriculture has a major interest in maintaining bees as pollinators. Bee mortality is an increasing problem in many regions owing to a synergy of factors which include bee diseases, weakened immunity to pathogens and parasites, climate change, land use change to some extent, periods of lack of food and foraging for bees, progressive eradication of melliferous plant species, and the use of pesticides and unsustainable farming techniques. Reports of global bee-diseases are constantly increasing so that *Apis mellifera* is at serious risk of becoming an endangered species.

In November 2010 a resolution was approved by the European Parliament, encouraging the European Commission to take action, among others on the following points:

- o harmonising border controls, to improve sanitary conditions for honey products
- o find effective veterinary treatments against *Varroa* mites and related diseases
- o adapt the scope and financing of European veterinary policy to take account of the specific nature of bees and beekeeping with a view to ensuring more effective bee-disease control, in collaboration with beekeepers' organisations
- o develop mainstreaming sustainable, pollinator-friendly farming practices by avoiding monocultures without rotation
- o activate independent and timely research into bee mortality, including plant protection products (such as coated seeds), genetically modified crops and the spread of toxins via pollen
- o maintain the existing support for the apiculture sector also after 2013
- o owing to the possible effect of plant protection products, direct and indirect exposure must be taken into account, in particular through nectar, pollen and water



- o coordinate national monitoring programmes for labelling requirements and risk mitigation measures which should be included in plant protection product authorisation, as well as exposure monitoring programmes for plant protection products

For the entire resolution see: www.europarl.europa.eu/oeil/FindByProcnum.do?lang=en&procnum=RSP/2010/2778

A declaration has been added to the resolution addressed to Commissioner Dalli specifying:

It is time to stop listing potential causes of the decline of the number of bees without giving necessary attention to the only new cause always mentioned but never studied: the growing contamination of the environment with systemic insecticides. This is the cause with more than suspected links and which would be easy to solve. It is time to recognise that there is a link between the losses of bees, frogs, butterflies (which have suffered a huge decline of 60% in 20 years!) and insect-eating birds, demanding the need for cohesive research of the pathological reason.

New reports of fungi and viruses being discovered in declining frog and bee

populations are increasingly frequent. Does it not seem more probable that only one factor is the reason behind the different diseases? There are many elements pointing in that direction. Now it is up to the European Commission to launch independent research to prove the disastrous effects on bees of these new insecticides that are being increasingly and irresponsibly used.

The current risk assessment process for the new systemic pesticides must be abolished and a more accurate system used. Current authorisation procedures are based on analysis of the lethal consequences to the single bees while, in reality, it has been proven both by science and in practical field experiments that the negative effects are affecting the beehive as whole system.

Independent studies must be carried out to show the immediate consequences and the long-term consequences of pesticides on beehive communities. The EPs resolution is a unique opportunity for the European Commission to guide European agricultural production to ensure its feasibility for the future.

Francesco Panella, President, the Italian Beekeepers Association

"If we lose the bees, we lose the fight for a more green and more diverse environment. We simply cannot afford to lose. The work of PAN Europe is crucial for the future of our environment and provides important examples of how to promote a green Europe of tomorrow."

Dan Jørgensen, MEP

See the PAN Europe 'IP farmer of the year, bee-friendly competition' website: www.pan-europe.info/Bee_friendly_competition.html

PAN 2010 summer CEE food testing: polluted tomatoes & illegal strawberries

PAN Europe's recent test results of pesticides in Central and Eastern European countries in food indicate that food is not safe enough. Illegal pesticides were found, pesticides exceeding health standards were found as well as pesticides dangerous for children.

PAN Europe tested vegetable and fruit samples in June 2010¹ in four Central and Eastern European countries: Bulgaria, Czech Republic, Hungary and Slovakia. 35 of the 49 samples contained some residues. 10 samples included active ingredients not authorized in the EU and 3 Bulgarian sample contained residues over EU Maximum Residue Limits (MRLs). According the EU-Regulation No 1097/2009 from November 2009 the MRLs of 11 pesticides have been lowered for many commodities. The EU-wide Regulation became applicable from 7 June 2010.

Our test analyses showed levels of the fungicide procymidone² above the new MRL in Bulgarian, Hungarian and in Slovakian samples. Despite the fact that the new MRLs may not apply for those products, as they were probably produced before the 7th of June, it is worrying to not see better results in the month of transition.

Additionally, some of the most dangerous pesticides for children were found in strawberries and tomatoes. Carbendazim is a well known endocrine disruptor, blocking the male sex hormone and has possible effects on fertility. For children and the unborn even small doses can be harmful.

Chlorpyrifos is a developmental neurotoxin. If the unborn are exposed, negative behaviour effects could result in later life (for example ADHD and memory errors³) even in very small doses. So these tomatoes and strawberries should never be consumed by pregnant woman. Given the results of the tests, it can only be recommended for children to only eat organic tomatoes and strawberries.

We found the cleanest products in the Czech Republic. 70% of the Czech samples were free of residues and we found 1 active ingredient in 1 sample. PAN's testing found the most contaminated fruits and vegetables in Bulgaria.

- o 93.3% of the Bulgarian samples contained pesticides, and we found 3 sample above existing MRLs and 1 above the new procymidone



MRL. Furthermore we found 9 banned substance in 8 samples. We measured 44 active ingredients in 15 Bulgarian samples. One tomato of Turkish origin sold in Bulgaria contained 7 active ingredients, 2 banned in the EU, one 4 times above the MRL.

- o Only 21% of the Hungarian products were pesticide free. One tomato sample contained procymidone 7.5 times above the new MRL.
- o 3 of the 10 Slovakian samples were residue free, but 1 tomato sample of Polish origin contained 4 different pesticide residues, including the fungicide thiophanate-methyl, a substance of concern for health and environmental reasons. The one Slovakian grape sample contained 6 different kind of active ingredients and procymidone 4 times above new MRL.

PAN Europe's testing showed the shortcomings of national food safety systems, and the lack of proper checks on imported products. The aim of our testing was to encourage supermarkets to apply stricter standards for pesticide residues in their food products. This programme of PAN has succeeded in many participating countries, as supermarkets have entered into meaningful dialogue with some of the organizations on the testing and monitoring of pesticides. It has also generated a great deal of media coverage in some of the countries, therefore raising awareness with the public. Furthermore, we would like to see the European Commission begin to protect consumers health and not the interest of pesticides industry and producers, by developing MRLs based on the latest scientific information (ADI and ARfD limits) and for this to include combination and cumulative effects. The possible combination effect of low dose mixtures was well illustrated in Turkish tomatoes bought in Bulgaria which contained 7 different pesticide residues, or the strawberries of Greek origin containing 6 different residues⁴. These results critically show the need

for strong National Action Plans for the sustainable use of pesticides in order to protect consumers health.

Gergely Simon, Clean Air Action Group (Levegő Munkacsoport), Hungary

SUBSTANCES OF CONCERN:

Procymidone: CAS 32809-16-8 in Bulgarian, Hungary, Slovak samples

- Procymidone; The EPA classified procymidone as a probable human carcinogen.

www.epa.gov/oppsrrd1/REDs/procymidone_tred.pdf 2005

- Reproductive Toxicity: classification is valid according the database of footprint and go to procymidone under "P": <http://sitem.herts.ac.uk/aeru/footprint/en/index.htm>. At the end of the data sheet you will find the hazard classification R2.

- EDC

www.pan-europe.info/Resources/Policy/List_of_CMV12ED_plus_list_of_CMV3.pdf

- All concerns:

www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC34254

Thiophanate-methyl: in Bulgarian, Slovakian samples

- Likely carcinogen & Reproductive and Developmental Toxicity
- www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC34588

Bifenthrin: in Czech sample

- PBT/POP (KEMI)

Chlorpyrifos and chlorpyrifos-methyl: in Bulgarian, Slovakian and Czech samples

- Cholinesterase Inhibitor and endocrine disruptor

(www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC33392 and www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC35494)

1. PAN Europe CEEC testing with PAN Europe co-funding:

- 49 samples: 25 tomatoes, 11 cucumbers, 12 strawberries & 1 grape from Slovakia, 15 Bulgarian, 14 Hungarian, 10 Czech and 10 Slovakian samples
- Bulgaria, Czech Republic, Hungary, Slovakia – sampling 7 th of June (Slovakia 16th)
- Testing in Dutch accredited laboratory: AgriQ

2. The MRL of the highly hazardous fungicide Procymidone was lowered from 5 mg/kg to 0,02 mg/kg in grapes.

3. Developmental Chlorpyrifos and Methyl Parathion Exposure Alters Radial-Arm Maze Performance in Juvenile and Adult Rats, March 10, 2009. <http://www.ncbi.nlm.nih.gov/pubmed/15866758>

4. Thiophanate methyl and carbendazim synergy was mentioned in the scientific literature and even EFSA mentioned in its assessment that the uses of these two active substances have to be considered carefully.

Anything goes? The turbulent story of 1,3-Dichloropropene and the EU approval process

1,3-Dichloropropene (1,3-D) has been used for decades in agriculture to sterilise soils. This is particularly useful for monocultures which tend to create a soil abundant in pests threatening the crop as a result. With 1,3-D, it is possible to “reset” the soil every 3 or 4 years in order to continue to grow a monoculture (such as potatoes, tomatoes, flower bulbs). In the EU process of approval of 1,3-D was not included, not because it is a carcinogen, but because essential data was lacking (impurities unknown). Spain, Italy, Greece, Portugal, France and Belgium were firmly lobbying for approval for this pesticide, but lost in the first round of the approval process.

A 2006 loophole in the EU pesticide approval process created new chances for rejected substances to be resubmitted. The loophole was created to enable consideration of pesticides which had insufficient data. 1,3-D was one of these pesticides due to a major lobbying effort from industry using farmers as their stormtroopers. Health Commissioner Dalli remained consistent, advocating precaution and rejecting approval. However, southern EU member states continued to fiercely push for its inclusion, given that a Council decision was due this November.

Dangers of the substance

Animal testing has shown 1,3-D is mutagenic, it can cause chromosome aberrations, cause DNA fragmentation and several tumours (liver, urinary bladder and lung). The European Food Safety Authority (EFSA) (Opinion

2006) concluded on the basis of the weight of the evidence 1,3-D to be an *in vivo* genotoxic substance. PAN Europe thinks this classification should automatically lead to a ban on 1,3-D because citizens should not be exposed to carcinogens while no-effect-doses are unlikely to exist for these substances. The EFSA, however, decided to set an acceptable dose at (0.30 mg/M3) for exposure through the air and ‘expects’ 1,3-D to degrade in the atmosphere. This ‘acceptable dose’ is at or below the level calculated and analysed downwind in the first 100 meters beside treated fields (H.Buurveld *et al.* University Groningen, IVEM SSV 39, 1988). So people living in the vicinity of treated areas are at risk, even if we accept EFSA’s acceptable risk level. Additionally, unknown ‘impurities’ in the pesticide pose a danger.

No place for 1,3-D in agriculture

Good agricultural practices make use of balanced healthy soil to keep pests under control, uses the carbon cycle and organisms for buffering water, and uses the nutrient cycle to feed plants. The use of fumigants conflicts with these good agricultural practices and with the Framework Directive on the sustainable use of pesticides which takes Integrated Pest Management (IPM) as the standard for European crop growing and crop protection (Annex III of the Framework Directive). The use of 1,3-D would severely undermine this policy and block the much needed progression to sustainable practices.

Alternatives for the use of 1,3-D are readily available. A wider crop rotation, of course, is the most logic solution and should be made mandatory. Use of nematode-resistant crop varieties are additionally a good option to prevent unbalanced situations.

Dumping chemical waste

1,3-D is not a synthesized pesticide, but is a waste product in the synthesis of epoxy resins (side-product of epichlorhydrin). So one could say the use of 1,3-D is dumping chemical waste in the environment. This is surprisingly true given that half of the 1,3-D is not effective. 1,3-D consists of the ‘cis’ isomer and the ‘trans’ isomer, the latter being inactive against nematodes. A few years ago Dutch Shell offered the ‘cis’ isomer (purified) on the market but again an application (by DOW/Kanesho) for the complete mixture has been submitted. The dumping of all these chlorinated chemicals (up to 280 kg/ha) is a heavy burden for the environment.

The outcome

On 29th of November, the Agriculture Council voted on the Commission proposal for non-inclusion of 1,3-D. With strong views for and against the proposal, there was no qualified majority. This means the Commission will have to take a decision and publish the decision for a non-inclusion in January 2011. This time anything doesn’t go fortunately. Thanks to commissioner Dalli. And shame on you Spain and Italy.

Hans Mulierman, PAN Europe
Chemicals Policy Officer

PAN EUROPE BIODIVERSITY CAMPAIGN UPDATE!

We have received encouraging feedback on the biodiversity and pesticides briefing produced earlier this year. Since the summer, we sent it out to the 27 Ministers responsible for biodiversity and have so far received replies from Irish, Belgian, Slovenian, Austrian and French ministries. Also, we have now produced mini-leaflets that are on the PAN Europe Biodiversity campaign webpage, available in French, English, Italian and Macedonian. Go to www.pan-europe.info/Campaigns/biodiversity.html



"Toxic menu" launches cancer and environment campaign in France

Générations Futures (formerly MDRGF) and the Health and Environment Alliance revealed results of tests on typical children's meals in France to launch the "Environnement et Cancer" campaign on 1 December 2010.

Between July and September 2010, non-organic food items making up the typical daily intake of a 10 year-old were bought in various supermarkets and tested for chemical residues. Analysis of the "Menus Toxiques" showed the make up of chemical substances in our children's daily diet, and the chemical cocktail to which they are exposed from food alone.

The findings showed 128 trace elements representing 81 different chemical substances. These substances included 36 different pesticides and 47 suspected carcinogens.

Given that one in every two men and one in every three women in France will develop cancer during their lifetime, the first step in this new campaign was an effort to establish exposure, via food intake, to substances suspected to be cancer-causing.

The campaign's aim is to raise citizen and public authority awareness of the important role played by environmental risk factors among the causes of cancer. It is also intended to encourage action leading to necessary policy changes.

The release of the findings at a press conference prompted huge media coverage, including a one-page article in France's leading newspaper Le Monde. Articles also appeared in medical publications with large readership among doctors and health professionals.

Générations Futures say that since starting to work on food and chemical contamination, notably pesticides, they have received a stream of questions

about "real" levels of exposure via food: "How many different substances are we exposed to each day?", "Which types of chemicals?", "Are the minimum levels set by the authorities respected?", and "How many suspected carcinogens and EDCs are we exposed to on a daily basis?"

Surveys show that:

- o 80% of people in France are worried about pesticide residues in fruits, vegetables and cereals
- o 80% are anxious about pollutants in fish and meat
- o Almost half of all French people believe that public authorities of the European Union do not take sufficient action to protect consumers from this risk

Even though for each substance taken on its own the acceptable levels were respected, the food products contained a large number of different molecules which are suspected to have cancer-causing properties and/or could disturb the endocrine (hormone) system. In view of the results, the message is that we should ask those responsible to find a way to substantially reduce our exposure, notably through food intake, to suspected carcinogens and to endocrine disrupting chemicals.

This objective is attainable. For a number of the substances, substitutes already exist. Pesticides and additives can be eliminated through organic agriculture and food production.

A joint Générations Futures and HEAL Cyberaction was also launched. Within two weeks, more than 5,000 supporters had sent letters to the French government asking for:

1. A real environmental risk factor section to be included in the 2nd Cancer Plan in France



2. The precautionary principles to be put into practice, especially in relation to possible carcinogens (CMR3) and endocrine disrupting chemicals (EDCs)
3. Firm action to establish the immediate substitution of substances known to be carcinogenic and not simply a reduction in their presence

Take part in the Cyberaction at www.cyberacteurs.org/actions/presentation.php?id=206

For the full report of the 10 year old child's dietary analysis of toxic chemical exposure, see www.mdrgf.org/menustoxiques/pdf/Rapport_assiette_toxique_281110.pdf

For more information about Generation Futures and HEAL's campaign work on the environment and cancer, see www.menustoxiques.fr and www.environnement-et-cancer.com

New PAN Germany publication on pesticides impact on biodiversity

PAN Germany has published a new brochure on the negative impacts of synthetic pesticides on biodiversity. The title is *Auswirkungen chemisch-synthetischer Pestizide auf die biologische Vielfalt* (The effects of synthetic pesticides on biodiversity)

The brochure gives a general overview of how agriculture affects biodiversity

and focuses on pesticide impact on plant diversity, soil organisms, pollinators, amphibians and birds in Europe.

You can download the full brochure from www.pan-germany.org/download/biodiversitaet/Auswirkungen_chemisch-synthetischer_Pestizide.pdf

Susan Haffmans, PAN Germany



"MADE" Week for Alternatives to Pesticides activities

The Macedonian Association of Doctors for the Environment "MADE" – Kumanovo, took part in this year's Week for Alternatives to Pesticides with the following activities:

- o Interview with a local TV station and articles in local newspapers.
- o Members of MADE visited some of the farmers in their village and to see what their pesticide storage facilities were like.
- o On the first day of Spring, we took part in a country-wide campaign activity "Plant a tree- Plant your future"
- o Members of MADE visited agricultural store and spoke with workers there, about pesticides and pesticides alternatives.

- o Members of MADE held a meeting with mayor and member of local municipality in Kumanovo for their ideas and perspectives for pesticides alternatives and organic food production in our town.

- o We collected unused pesticide bottles which had passed their expiry date in the houses of members of MADE, and safely disposed of them

- o Every member of Association of Doctors for the Environment MADE Kumanovo worked in their garden, to inspect trees are they has diseases or they are contaminated with insects and write report.

- o Gave a presentation in a primary school "Koco Racin" Kumanovo.



Pupils at Koco Racin primary school

- o Gave educational classes to the Doctors in our General Hospital Kumanovo, about the consequences of home accidental intoxication with pesticides.

Tomica Ancevski, President, MADE

GET SET FOR THE 'SEMAINE SANS PESTICIDES/WEEK FOR ALTERNATIVES TO PESTICIDES' MARCH 20-30 2011

Join in with thousands of activities taking place across Europe in the 2011 Week for Alternatives to Pesticides! Across Europe and elsewhere, hundreds of associations, communities, businesses and other groups will be putting on lectures, debates, exhibitions, film screenings, performances and tours of gardens and farms to raise awareness of harm posed by pesticides and to present viable alternative options. Be one of the organisations that takes part. For further information see: www.semaine-sans-pesticides.com/index.php

The 2010 exhibition posters for the Semaine Sans Pesticides, have been made into a booklet in French and English. You can now download this colourful booklet of facts from the PAN Europe website: www.pan-europe.info/Resources/briefings.html

Neonicotinoides blamed for bee deaths

A new book entitled "The Systemic Insecticide: A Disaster in the Making" by Dutch toxicologist Dr. Henk Tennekes sheds light on a family of highly toxic chemicals — neonicotinoids — which are implicated in the deaths of billions of honeybees around the globe.

Modern monoculture farming has begun to distance itself from spraying insecticides. Instead, it has opted to add so-called "systemic" substances to seeds. Neonicotinoids are inserted into the seed enabling the insecticide, which is water-soluble, to move throughout its system where ultimately the toxicity is transferred to the nectar and pollen. In 15 years time these new class of insecticides will be dominating insecticide use.

Bees use nectar by turning it into honey, their only source of energy. In the process of harvesting nectar from

flowers, bees inadvertently cross-pollinate flowering plants. There are at least 235,000 known flowering plants for which 20,000 species of bees are the predominant pollinators. Moreover, bees require pollen as the only source of protein to make their young, build brains and strengthen their autoimmune systems.

Each year, our global biosphere endures an onslaught of some 5 billion pounds of insecticides. Many of these insecticides are neonicotinoids, which synthetically mimic a plant compound found in tomatoes, potatoes, peppers and tobacco. A neuroactive insecticide fashioned after nicotine, neonicotinoids poison nerves and prevent acetylcholine from enabling neurons to communicate with each other and with muscle tissue. In humans, for instance, these substances would trigger Parkinson's and Alzheimer's diseases.



Bees exposed to neonicotinoids exhibit symptoms mimicking Parkinson's. The German agriculture institute concluded that the poisoning of the bees was a result of a "rub-off" of the neonicotinoid clothianidin from corn seeds.

Dr. Tennekes goes on to explain that neonicotinoids are water soluble, mobile in soils and persistent in both soil and water. Neonicotinoids bind irreversibly to the target in the body and create in this way a bioaccumulation effect. He reports that imidacloprid, another neonicotinoid, which has contaminated

western Dutch surface waters and significantly reduced non-target, beneficial insect populations, in turn caused a dramatic decline amongst many common grassland bird species.

He details soil studies showing imidacloprid killing springtails, beetles and earthworms, robbing the soils of its necessary beneficial fauna, which in turn breakdown leaf litter, decompose organic matter and recycle nutrients.

The book provides a detailed account of the decline of western Europe's grassland feeding birds. In addition, populations of their avian predators like Eurasian Goshawks and northern

Goshawks have likewise fallen dramatically. The use of these potent neonicotinoids has exhibited a deleterious effect on the biodiversity throughout western Europe.

Although, it is very valid to note that many bird populations in western Europe began to decline 35 years ago due to the pervasive use of insecticides, neonicotinoids are not only exacerbating declines in bird species but also its killing the soil and contaminating freshwater.

Freshwater and healthy agricultural soils, worldwide, are of paramount importance as our species population

is dramatically rising and global warming is beginning to significantly impinge upon our fresh water sources.

The book also points positively to examples of environmentally safe alternatives, with examples such as neem-based products, made from an east Indian tree (*Azadirachta indica*), will offer protection against most insect infestations. Neem-based products are widely available in the U.S., Canada and Western Europe.

The book can be ordered on www.disasterinthemaking.com

Pesticide News

UK: Government announces residents do not need to be notified when pesticides will be sprayed

16 December 2010

The UK's Department for the Environment, Food and Rural Affairs (DEFRA) has announced that farmers and greenkeepers will not have to notify local residents prior to spraying crops, fields or parks with pesticides. The announcement was made despite the British Medical Association (BMA) advising the Government that mandatory notification of spraying should be introduced.

HONG KONG: Pesticide laden produce gives cause for concern

9 December 2010

Samples taken from produce in a number of supermarkets across Hong Kong have been found to be unacceptably high in pesticide residues an other chemicals according to a recent study by Greenpeace. The group found one sample of lettuce to contain 17 different pesticides with 15 samples containing 38 types of pesticide between them.

Sperm Whales absorb pesticides and other man made chemicals

7 December 2010

Research by Ocean Alliance in Partnership with the University of Southern Main in the US found traces of DDT as well as hexachlorobenzene and PCBs in samples of skin and blubber taken from over 200 sperm whales. The study, recently published in *Environmental Health Perspectives*, tested whales between 1999 and 2001 and found the highest levels of chemicals in whales near to the Galapagos Islands.

Long-term exposure to pesticides may increase risk of developing dementia

1 December 2010

A study over six years of 600 vineyard workers in south west France has shown long-term exposure to pesticides

may be linked with an increased risk of developing dementia. The research published in the *Occupational and Environmental Medicine* journal shows individuals directly exposed to pesticides were more likely to perform worse in cognitive tests at the end of the study than they were at the beginning.

INDIA: 8 plantation pickers suffer pesticide poisoning following harvest

29 November 2010

Eight plantation workers in Kerala were admitted to hospital after complaining of headaches, nausea and itching. The symptoms appeared after the workers had harvested a cardamom crop on a private estate. The crop was sprayed with pesticides just an hour before the harvest started.

ISREAL: Pregnant women in Jerusalem have higher levels of pesticide residue in their bodies than their New York counterparts

4 November 2010

Pregnant women in Jerusalem were shown to have four to six times higher levels of pesticide residues in their bodies than compared to similar women from America a study by the Hebrew University of Jerusalem has shown. Plasma and urine samples were collected from 20 women and tested for levels of organophosphates and insecticide metabolites.

INDIA: Banned pesticides found in city vegetables

4 November 2010

The residues of four banned pesticides were found in many vegetables for sale across India's cities. A survey by Consumer Voice of 35 different vegetable varieties from Bangalore, Delhi and Kolkata found many of the 193 samples taken to contain pesticide residue. For example, banned substances like chlordane, heptachlor, endrin and ethyl parathion were found in almost all samples of bitter gourd. The pesticides used in India are 750 times higher than the European standards.

Banning 3 pesticides could cut suicides by a third

26 October 2010

A study in Sri Lanka ranking pesticides for toxicity using human data, the first of its kind, shows banning the sale of the pesticides paraquat, dimethoate, and fenthion could save hundreds of thousands of deaths by suicide globally. The toxicities of these pesticides to humans are particularly high when compared to some other pesticides e.g. the risk of dying after ingesting paraquat is 18 times higher than that for ingesting a related herbicide, glyphosate.

US: one fifth of children's food contaminated with pesticides

21 October 2010

Pesticide contamination of typical children's food in America was found to be common according to a recent study

published in *Environmental Health Perspectives*. During the study more than a quarter of the food eaten was found to contain pesticides 14 varieties of pesticides were measured in the fruits, vegetables and juices tested. Researchers found more than 25 percent of the samples contained measurable pesticide residues.

DDT exposure in womb may promote obesity later in life

5 October 2010

A study of babies born to a sample of Spanish mothers with high levels of a DDT breakdown product in their blood has shown they are more likely to grow up to be obese. A quarter of the babies studied grew unusually fast for at least the first year of life. All were normal weight at birth. The study by the Center for Research in Environmental Epidemiology in Spain will continue to follow the babies for their first 4 years of life.

Academic Review

Access to insecticides increases risk of suicide among young people in China

Suicide is a leading cause of death in individuals 15-34 years of age in China and in rural areas consumption of highly toxic pesticides is the most common method. This study compared 370 people who had committed suicide to 370 living controls of similar age, gender and rural/urban location. Access to pesticides, and in particular insecticides, was found to be a significant risk factor after controlling for other known risk factors such as education level, marital status, family income, and mental disorder. The authors recommend that access to highly toxic pesticides should be reduced to prevent vulnerable young people from committing suicide in times of crisis.

Incidence of acute pesticide poisonings in Nicaragua: a public health concern, M Corriols, J Marin, J Berroteran, Kong Y and Zhang J, Access to farming pesticides and risk for suicide in Chinese rural young people, Psychiatry Research, 2010, 179: 217-221.

Metabolite of glyphosate is more toxic and persistent than glyphosate itself

The broad-spectrum herbicide glyphosate is one of the most widely used herbicides in the world today. Its use expanded significantly with widespread plantings of crops tolerant to its effects (glyphosate-tolerant, or GT, crops). Glyphosate's manufacturers and proponents claim its environmental impact is lower than that of the herbicides it replaces, in that it is less persistent and less toxic. A new paper examines some of these claims more closely.

The new study compares herbicide applications on both GT and non-GT crops (oil seed rape, sugarbeet and maize) in three French field trials. The authors studied the dynamics of the herbicides and their metabolites in soil, groundwater and air both by modeling and comparisons with field data. They also calculated aggregated toxicity potentials of the herbicides and metabolites in the GT and non-GT systems.

Most previous studies have supported the proposition that the use of glyphosate on glyphosate-tolerant crops has lower environmental impact than the use of other herbicides on non-GT crops. However, these studies have not considered the impacts of any metabolites of the herbicides. The main glyphosate metabolite is aminomethylphosphonic acid (AMPA), a chemical which is more persistent and more toxic than glyphosate, and which is now being detected in water in France.

In this study, although the impacts of GT crops were still lower than that of non-GT crops, the persistence and toxicity of the glyphosate metabolite aminomethylphosphonic acid (AMPA) was significant. The difference in the environmental impact of the GT and non-GT crops was significantly less when the metabolites were taken into account. The study calls into question the long-term sustainability of GT systems.

Mamy L, Gabrielle B and Barriuso E, Comparative environmental impacts of glyphosate and conventional herbicides when used with glyphosate-tolerant and non-tolerant crops, Environmental Pollution, 2010, 158:3172-3178.

Endometriosis linked with organochlorine pesticides

Endometriosis is a condition in which cells of the womb lining grow and multiply outside of the womb, commonly on the ovaries. Growth of these endometrial cells is dependent on oestrogen both in their normal environment inside the womb, and when they grow abnormally outside the womb. The condition is thought to affect 5-10% of all women and can be very painful. The etiology of endometriosis remains speculative but there is increasing evidence for a role for environmental chemicals such as dioxins and PCBs.

Eighty-four women aged 18-40 undergoing laparoscopy participated in the study. The women agreed to have a sample of blood taken and the surgeons carrying out the laparoscopy checked for signs of endometriosis. Blood samples were analysed for residues of six organochlorines: aldrin, beta-BHC, HCB, DDE, mirex and trans-nonachlor.

32 (38%) out of the women were reported to have endometriosis while the remaining 52 (62%) did not. The most significant correlations were found with the aromatic fungicides HCB and trans-nonachlor. Women with the most HCB or transnonachlor in their blood (the top third) were around four times as likely to have endometriosis as those with the least (the lowest third). Associations were also found with aldrin, beta-BHC and mirex. This may be the first suggestion of a link between endometriosis and exposure to organochlorines, particularly the aromatic fungicides HCN and trans-nonachlor.

Cooney MA, Buck Louis GM, Hediger ML, Vexler A and Kostyniak PJ, Organochlorine pesticides and endometriosis, Reproductive Toxicology, 2010, 30:365-369.

Prenatal organophosphate exposure associated with attention difficulties in children

Organophosphates (OPs) are well known neurotoxicants associated by previous research with behavioural alterations in children. A new study now adds to our knowledge of these associations. The US study, the CHAMACOS study (Center for the Health Assessment of Mothers and Children of Salinas), recruited Mexican-American farmworker women during the first half of their pregnancy from the Salinas Valley area of California, an area of intensive fruit and vegetable production. The study examined the relationship between pre- and post-natal organophosphate exposure and attention difficulties in the children of these women.

There were a total of 348 women who delivered a child and participated in the follow-up studies when their children were 3.5 and 5 years of age. The children's pre-natal exposure to organophosphates was assessed by measuring concentrations of the metabolite dialkyl phosphate (DAP) in their mother's urine at two specific stages during pregnancy. The children's postnatal exposure was assessed by measuring DAP concentrations in urine samples taken at the 3.5 and 5 year follow-ups. Attention problems and attention/hyperactivity disorder (ADHD) were assessed from the mothers' reports, and by direct assessment of the children at 3.5 and 5 years of age. The study found that prenatal exposure to OPs was significantly associated with attention problems and ADHD at 5 years of age. There was also a limited association between post-natal exposure and attention problems. Some of the associations were stronger among boys.

A second study from the same authors was carried out on the CHAMACOS cohort. The enzyme paraoxonase 1 (PON1) is important in detoxifying OPs. Certain common variations in the PON1 gene (PON1-108 and PON1192) lead to lower levels or activity of the resulting PON1 enzyme. In an earlier study the authors reported a link between OP exposure and poorer mental development and possibly also pervasive developmental disorder (PDD) in 2 year olds. The authors were interested to see if these common PON1 variants which may reduce the ability of an individual to detoxify OPs would modify the association between pre-natal OP exposure and neurobehavioural problems. Pre-natal exposure to OPs was determined. The PON1 genotypes of the mothers and children were assessed and the activity of their PON1 enzymes assessed in maternal blood, umbilical cord blood and in blood samples from the children at two years of age. The children's mental development was assessed using the Mental Development Index (MDI) and the Psychomotor Development Index (PDI) of the Bayley Scales of Infant Development. The authors also questioned the mothers on the Child Behaviour Checklist to obtain a score for PDD (pervasive developmental disorder).

The research found links between the children's mental development and either a genotype showing the presence of one of the common PON1 variants or reduced PON1 enzyme activity. The research strengthens the link between the enzyme which detoxifies OPs and mental development.

Marks AR, Harley K, Bradman A, Koguy K, Barr DB, Johnson C, Calderon N and Eskenazi B, Organophosphate Pesticide Exposure and Attention in Young Mexican-American Children: The CHAMACOS Study, Environmental Health Perspectives, 2010, 118:1768-1774.

Eskenazi B, Huen K, Marks A, Harley KG, Bradman A, Barr DB and Holland N, PON1 and Neurodevelopment in Children from the CHAMACOS Study Exposed to Organophosphate Pesticides in utero, Environmental Health Perspectives, 2010, 118:1775- 1781

To request a quarterly listing of peer reviewed scientific articles relating to pesticides and their impact on health and the environment, please contact Pesticide Action Network UK (admin@pan-uk.org)