

## EU'S PROPOSED PESTICIDE LEGISLATION PROMISES BETTER ENVIRONMENTAL HEALTH

Monica Guarinoni, Diana G Smith and S Katrina Pehudoff from the Health and Environment Alliance, 28 Boulevard Charlemagne, B-1000 Brussels, Belgium describe the health hazards of some pesticides and the potential gains from stricter environmental legislation on pesticides in Europe.

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### Abstract

Pesticides are increasingly being associated with a variety of chronic, preventable diseases including cancers, neurodevelopmental disorders and Parkinson's Disease. Meanwhile, the EU is reviewing criteria for pesticide approval and use that would lead to the removal from the market of chemicals that are known to cause cancer, genetic mutations or to be toxic to reproduction. If the final policy package, which will be approved in the next month, includes stricter criteria for the exclusion of the most hazardous pesticides, Europeans could enjoy a safer food supply, improved environmental health and better human health outcomes. The European Parliament and some Member States have already demonstrated their support for, and the feasibility of, tighter legislation on pesticides. The value of human well-being underscores the need to take a precautionary approach to pesticide regulation and to urge the EU to adopt pesticide policies that eliminate those chemical ingredients that jeopardize our health.

### Introduction

An estimated 26 million Europeans are diagnosed with cancer each year (Blainey *et al.* 2008). A recent Impact Assessment commissioned by the European Parliament estimates that 1% of cancers – 26,000 cases annually – could be attributed to pesticides in our environment (Blainey *et al.* 2008). Pesticides are a leading culprit in other diseases including Parkinson's Disease. The association is so common that Parkinson's disease is now recognised as an occupational disease by the French health insurance agency Mutualité Sociale Agricole (Dupupet 2007). Fortunately, many pesticides are non-essential components of our current food production scheme and alternatives to the implicated chemicals do exist. Europe could, therefore, reduce the rate of some leading chronic conditions, such as cancer and Parkinson's Disease, by ensuring that new EU pesticides legislation includes stricter criteria for pesticides approval and use, and by implementing the new policy package effectively.

### Health concerns – What do we stand to lose?

Pesticides were introduced in order to prevent, harm or destroy pests that impeded plant growth and development. Pesticides, mixtures of noxious and inert substances,

rigorously achieve their goals by interfering in biological and chemical processes inside bodies of pests. As humans share similar internal processes with agricultural pests, it is of no surprise that some ingredients in pesticides can also harm human health. A group of Canadian physicians recently published two systematic reviews of the studies on cancerous and non-cancerous health effects of pesticides (Bassil *et al.* 2007; Sanborn *et al.* 2007). More than ten diseases, summarised in Figure 1, were found to be associated with pesticides.

Much of Europe's landscape is dominated by agriculture. As a result, many Europeans live and work in close proximity to farms or agro-industrial developments placing these people in routine contact with pesticides. Numerous epidemiological studies show that farmers, agricultural workers and their children are at higher risk of incurring health problems due to long-term exposures to pesticides. These conditions include leukaemia, multiple myeloma, brain tumours, prostate cancer, and impaired immune system function (Blainey *et al.* 2008). A number of studies have found the risk of childhood cancers to be higher amongst the children of workers in agriculture and children living on

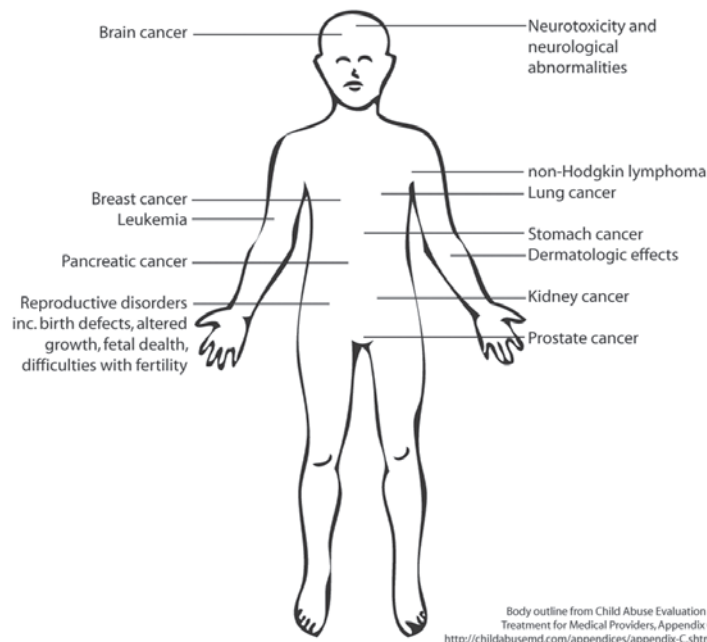


Figure 1: Diagram of the types of cancerous and non-cancerous diseases with an association to pesticides (Bassil *et al.* 2007; Sanborn *et al.* 2007).

farms, with a strong association for childhood brain tumours (Blainey *et al.* 2008). Despite current occupational safety measures, farmers and their families continue to be insufficiently protected from the harms of chemical exposure.

The inability of protective equipment to be fully effective is, in part, due to the ubiquity of pesticides; they are found in the air we breathe, the foods we eat and the water we use. Pesticide Action Network (PAN) Europe's analysis of food monitoring data for individual countries over a nine year period (1996-2005) shows that those pesticides with dangerous ingredients are the dominant food contaminants in all Member States year after year (PAN Europe 2008). By being exposed on multiple fronts, we have a difficult time mobilising sufficient defence especially during critical periods of human development. During foetal development and early childhood the developing brain is particularly susceptible to pesticide exposure (PAN Europe 2008).

The effect of pesticides, known to be neurotoxic to the adult brain, has yet to be fully investigated in the child brain (PAN Europe and HEAL 2007). It is feared that pesticides contribute to the current incidence of one in six children diagnosed with a development disability, commonly affecting the nervous system (PAN Europe and HEAL 2007). Studies of children diagnosed with autism found a significant association between both their mother's residential distance from sites of agricultural pesticide application and the stage of gestation at the time of pesticide use (Blainey *et al.* 2008).

Pesticides can accumulate in our bodies over time and act in concert with other chemicals or conditions to play a role in many diseases. The ingredients of some pesticides can mimic the hormones in our bodies that naturally signal human development, such as the onset of puberty. These 'endocrine disruptors' hijack our internal regulatory systems, disrupt normal development and reproductive process, and may produce related cancers. Children's and pregnant women's exposure to pesticides has been positively associated with cancers both in childhood and later in adult life (Blainey *et al.* 2008).

Evidently, we have reasons to be concerned about the current levels of contamination that are linked to a growing list of diseases. It is most alarming that the health consequences manifest in our children and subsequent generations. This future prospect of disease should not dilute our resolve to take action now.

### Potential impacts of tighter legislation – What do we stand to gain?

When and how diseases strike is a process determined by our own genetic predisposition and influenced by our interactions with an array of environmental factors. Eliminating dangerous pesticides can remove one prominent risk factor from this game of chance, thereby lowering our probability of developing certain diseases. Ultimately, fewer harmful pesticides in our environment would translate to better health.

Pesticides' health effects prove to be a financial burden on European citizens. The Impact Assessment commissioned by the EU Parliament indicates that an estimated 26 billion are spent each year in Europe on the direct and in-direct costs of pesticide-related cancer cases. If the cut off criteria are

adopted, much of this cost could be saved (Blainey *et al.* 2008). Other economic analyses of the costs of autism and diminished intelligence that stem from exposure to neurotoxic or immunotoxic chemicals forecast parallel savings (Blainey *et al.* 2008).

New EU legislation takes aim at chemicals in pesticides that are known to cause cancer, to damage our DNA and/or to be toxic to reproduction. Endocrine disruptors may also be included in those proposed to be taken off the market. Under new legislation, the Impact Assessment identified eight chemical substances currently used in pesticides that would need to be removed from the market (Blainey *et al.* 2008). A separate assessment by the UK Pesticides Safety Directorate estimates that under the new proposals only 5% of pesticides currently available would be banned from use in the EU (UK PSD 2008).

The European pesticide and agricultural industry can be sustained in the absence of these eight chemical ingredients. In 2008, PAN Europe analysed the current use of 23 pesticides that would be banned under new EU regulations in eight Member States. The findings, summarized in Figure 2, indicate that Member States have already invoked national bans on a range of 13%-61% of culprit pesticides. Only four substances are registered for use in all eight Member States (PAN Europe 2008). Evidently these countries have already demonstrated the political will, the economic feasibility and a continuing robust agriculture that would allow successful implementation of the new EU policy package.

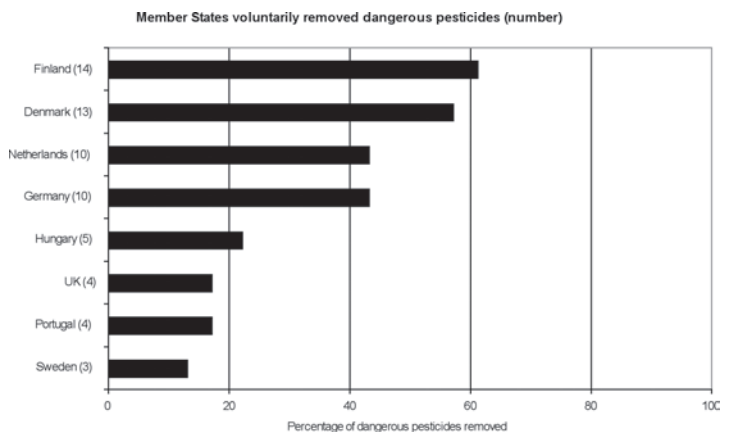


Figure 2: **Graph of the percentage (number) of dangerous pesticides, as defined by potential EU policy package, currently removed from the market in each of the eight Member States surveyed (PAN Europe 2008).**

### Conclusion

Pesticides are increasingly being associated with a variety of chronic, preventable diseases. Stricter pesticide regulation can give Europeans a safer food supply, improved environmental health and better human health outcomes with minimal financial burden on governments and industry. The European Parliament and some Member States have already demonstrated their support for, and the feasibility of, tighter legislation on pesticides. The value of human health and well-being underscores the need to take a precautionary approach to pesticide regulation and the importance of urging the EU to adopt pesticide policies that eliminate those chemical ingredients that jeopardize our health.

The Health and Environment Alliance (HEAL) and the Mouvement Pour le Droit et le Respect des Generations Futures (MDRGF) have partnered in France to launch a campaign to increase information and debate about how pesticides could be affecting people's health.

Specifically, the campaign aims to achieve:

- A **ban on pesticides** that are known, or suspected, to be hazardous
- A **reduction in the use of pesticides** to eliminate or minimise exposure
- Strong regulation to stop pesticide use in areas where **children are most exposed**
- Health care strategies and national cancer plans that integrate reducing exposure to pesticides within measures for the **primary prevention of cancer**.
- An **informal network of people** and groups who are concerned and **ready to act** to reduce the impact pesticides may be having on cancer incidence.

Interactive tools include:

- **Pesticides & Cancer website** (French & English) for current updates on the programme, more information on how to join the campaign, and resources on pesticide-related diseases – [www.pesticidescancer.eu](http://www.pesticidescancer.eu)
- Facebook group **"Sick of Pesticides"** – check here for the latest news and comments including videos from involved citizens to expert scientists as they give their perspectives on health and pesticides – <http://www.facebook.com/pages/Sick-of-Pesticides/38411248553>

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