

## MARTIN CATON M.P. speech for Westminster Hall debate on the Impact of neo-nicotinoid pesticides on bees and other invertebrates

“Over recent years there has been an alarming world-wide reduction in bee numbers and in the UK there are similar declines in wild pollinators such as bumblebees, moths, hoverflies and butterflies. There has been much debate about what is causing these losses.

When I wrote to DEFRA about this last November, **Lord Henley** replied to say in Britain, at least, it was *“a combination of factors including poor spring/summer weather, the varroa mite and other husbandry issues.”*

My letter to the Department had been about the possibility that a group of systemic pesticides called **neo-nicotinoids** and similar products were contributing to the demise of bees and other pollinating insects. In response, Lord Henley said,

*“In the UK, neo-nicotinoid insecticides are used primarily in commercial agriculture and horticulture production. Only a very small proportion is used in home garden products so the potential risk to bees, if any, from this type of product is negligible”.*

He also assured me that the UK pesticide approval regime was robust and adequate.

The reason I sought this debate today is to urge the Government to be prepared to take a step back from that position and look again at what is happening to the small creatures that contribute so much to our environment and our production of food. And, in particular, to examine, first, the growing weight of science that does show how neo-nicotinoid use and invertebrate losses are likely to be linked, and, second, the evidence that the pesticide assessment regimes in Europe and the United States, as applied to Systemics, and their potential for environmental damage, are inadequate in identifying what is really going on.

In 2009, the British charity, **BUGLIFE – The invertebrate Conservation Trust** - conducted a review of all the available scientific literature about the effects of neo-nicotinoids, and the Bayer product IMIDA-CLOPRID, in particular, on non-target insect species. Referring to 100 scientific studies and papers, the Buglife report highlighted a number of real concerns that neo-nicotinoids are harmful to bees and other pollinating insects. It, also, identified a particular problem where insects ingest tiny doses on repeated visits to treated plants, which the testing methodology of the IMIDA-CLOPRID Draft Assessment Report under the EU regulations, was not sufficiently sensitive to detect.

On the basis of their findings, Buglife called on the Government to reconsider the position of neo-nicotinoids and suspend existing outdoor approvals for these products pending the findings of the review. They also called for the development of international methodologies for assessing the effects of systemic pesticides and sub-lethal impacts on invertebrates.

The Government asked the **Chemicals Regulation Directorate** of the Health and Safety Executive, as pesticides regulator to review the **Buglife Report**. In a letter to Buglife and The Soil Association, Lord Henley said the Advisory Committee on Pesticides had conducted a further review. Earlier this month someone contacted the ACP to ask for a copy of the report. They were told that ACP had not conducted a review of the Buglife

report. Only the CRD had conducted the review. So, she then asked for a copy of their review. She was told it was not quite finished, as they still needed to look at some data.

Even though the review was, clearly, not completed Lord Henley felt able to tell Buglife that its report had highlighted a need in the risk assessment process for data on the impact of these pesticides on over-wintering bees and this was being addressed. Clearly, a welcome step forward. He did not, however, respond to the main thrust of that report on environmental damage, nor did he answer the main recommendations that I just outlined. Buglife and the Soil Association have asked the Minister to supply a copy of the full report from the Advisory Committee on Pesticides.

But we know that DEFRA, without a completed review of the Report decided not to accept Buglife and the Soil Association's interpretation of the current science and continue to maintain that "We have a robust system for assessing risks from pesticides in the UK that is based on evidence, and current evidence shows that there is not – and unacceptable risk to bee health from these products." That was a statement made as recently as last month.

What that statement does not appear to recognise is that things have moved on, considerably, since the production of the Buglife report and further scientific evidence has been produced over the last fifteen months that ties the use of neo-nicotinoids in to environmental damage to honeybees and wild pollinators. Four significant pieces of published research have emerged during that time:

- The first is a paper in Ecotoxicology by **Nils Dittbrenner** that demonstrates damaging impact on earthworm growth and activity at field level use of the neo-nicotinoid, IMIDA-CLOPRID.
- Second, is the work by the toxicologist Dr. Henk Tennekes that shows low level exposure to neo-nicotinoids by arthropods over a long time is likely to be as damaging as high exposure over a short time and hence more harmful than had been expected.
- Third, work done by **James Cresswell** of Exeter University published in the Journal of Ecotoxicology makes the case that from various pieces of Lab work done by others on neo-nicotinoids a 6 to 20% reduction in honeybee performance would be expected. But none of the field studies used to assess the impact of systemic pesticides would be able to detect a change in performance at this level.
- Fourth, a paper by Cedric Alaux of the French National Institute for Agricultural Research, and published in Environmental Microbiology demonstrates a clear link between neo-nicotinoid exposure and increased susceptibility to fatal Nosema infections (a bee disease) that could threaten pollinators.

In addition there is unpublished work that adds to the picture. One from the Netherlands showing widespread contamination of water bodies in that country. And raising concerns about the potential for impacts on the health of freshwater invertebrate populations. And the other – from the USA – was the subject of the lead story in the Independent, last Thursday, under the headline "Poisoned Spring" – a respectful reference to the seminal work of Rachel Carsons some 50 years ago – "**SILENT SPRING**" – in which she warned of the environmental damage being caused by a previous generation of pesticides.

**Michael McCarthy**, the Independent's Environment Editor, in an "exclusive" revealed work from the US Department of Agriculture's Bee Research Laboratory showing that neo-nicotinoid pesticides make honeybees far more susceptible to disease, even at tiny doses and, therefore, have to be in the frame when we are looking for the causes of the "Colony Collapse Disorder" that is having devastating effects on bees around the world.

This American study was led by **Dr. Jeffrey Pettis**, the research leader at the US Government bee lab in Maryland and completed two years ago, but for some reason, remains unpublished (though they have, now, taken it to an alternative journal, to move things on).

**Dr, Pettis and his team found that increased disease infection happened even when the levels of the insecticide were so tiny that they could not, subsequently, be detected in the bees although the researchers knew that they had been dosed with it.**

Although unpublished, so far, we know of these findings because Dr. Pettis and a colleague have spoken about them at length in Mark Daniels' film: "**The Strange Disappearance of the Bees**".

And these findings are, of course, completely in line with some of the other research that I have already mentioned.

That research evidence, from the other side of the Atlantic, follows hard on the heels of information from the **US Environmental Protection Agency** that has been described as "the leaked memo", though, as I understand it, it came into the public domain because an American bee-keeper became aware of it, asked for a copy and was sent one. (I'm not sure that's a leak!)

That memo is about a newer neo-nicotinoid "CLOTH-IAN-IDIN". It is highly critical of the risk assessment process used in the US. It states

***"information from standard tests and field studies, as well as incident reports involving other neo-nicotinoid insecticides suggest the potential for long term toxic risk to honey bees and other beneficial insects".***

Alarm bells really should be ringing by now.

So, what are these neo-nicotinoids and how prevalent is their use in this country?

I understand that they are a group of relatively new compounds which mimic the insect-killing properties of nicotine. They are neurotoxins, attacking the central nervous system of the invertebrates.

They are systemic, which means that they get taken into every part of the plant, which is treated with them, and that, of course, includes the pollen and nectar.

This, in turn, means that bees and other pollinating insects can absorb them and carry them back to their nests or hives – even if they are not the insecticides target species.

In 2008, total neo-nicotinoids use in Britain involved more than **2.5 million acres** – some quarter of the arable cropland in this country.

And they are big earners for the chemical companies that produce them. According to the article in the Independent, the German company “Bayer” earned more than **£500,000,000** from the sale of its top-selling insecticide IMIDA-CLOPRID, in 2009.

And the involvement of that sort of money raises the first question mark about the adequacy of pesticide licensing regimes. In EU countries the initial licensing is done at EU level by way of a Draft Assessment Report, and although the basic research is usually done by independent scientists, the putting together of the report is done by the licence applicant – the manufacturer. There is no independent monitoring of the process of gathering and assessing results by the manufacturer. When that is the foundation of the approval system, is it really any surprise when we find disparities in the findings of subsequent independent research on IMIDA-CLOPRID and the research in its 2005 Draft Assessment Report?

The weakness of the current test methods used for the approval process for this product was especially evident in assessment of sub-lethal effects and chronic exposure risk to bees and other invertebrates.

**We need to look again at the approval mechanism for crop-protection products, currently under the Plant Protection Products Directive 91/414.**

I believe that, in doing so, we should be employing the “**precautionary principle**” both in responding to the new evidence about neo-nicotinoids that I have outlined briefly., today. But that principle should also be central to the approval regime.

In its briefing for Members, on this debate and my Early Day Motion on the same subject, the **National Farmers Union** has been particularly exercised by the idea of adopting the Precautionary Principle in the registration process for pesticides.

Indeed, in a briefing of just 14 bullet points, five of them concentrated on rubbishing the Precautionary Principle.

But, in doing so, as far as I am concerned, they are not talking about the same thing as I am. They say “***the registration process for pesticides needs to be based on sound science and not the precautionary principle.***” And go on “***For some organisations, suspicion is enough to call for precautionary bans on the use of pesticides***”.

That is not what I mean by employment of the “**Precautionary Principle**”. Nor is it, I believe, what responsible environmental and wildlife organisations mean. There is not a dichotomy between science and the Precautionary Principle. The principle should be science based.

The way it should work is, when there are reasonable scientific grounds for believing a product might not be safe, it should not be used until there is convincing evidence that the risks are small and outweighed by the benefits.

And that, in fact, is what **Directive 91/414** seems to be saying, to me, even if there are doubts about its implementation here and in other member states. For instance, it says “***Member States shall ensure that a plant protection product is not authorised unless it has no unacceptable influence on the environment.*** It also makes clear that “***Authorisation may be reviewed at any time if there are indications that any of the requirements are no longer satisfied.***”

The NFU and Chemical companies approach is :

***“leave us alone until you have absolutely incontrovertible proof that those systemic pesticides are directly responsible for the loss of invertebrate populations.”***

Sadly, I think that is irresponsible. We can argue about whether Buglife’s 2009 report included enough strong scientific evidence to justify halting the use of neo-nicotinoids and related systemics at the time of its publication. Personally, I think it did.

But even if you believe that, on balance, it did not, you really need, now, to take into account all the new evidence that I have referred to, briefly, today. If you do so, and that’s exactly what I’m asking the Government to do, then I think you’ll decide that the scales have shifted. There is, now, too much science pointing to a direct link between neo-nicotinoids and invertebrate losses, to simply brush it aside.

I want to emphasise, at this stage that we need to remember that this is not just about honey bees. I’m sure all our hearts go out to the beekeepers across the world who have experienced so many difficult years – and honey bees are a wonderful resource. But they are only part of the picture. In fact, less than 8% of insect pollination is undertaken by honey bees. We must take into account the risk to wild pollinators – bumble bees, solitary bees, hoverflies, moths and the rest.

The issue here is biodiversity and ecosystem protection.

Also, I believe we have to acknowledge that, currently, monitoring of pollinators and pollinator services is very poor. It is absolutely vital that that changes from now on. Only by monitoring can we identify whether, when and where actions result in changes to pollinator levels. Basically, they are so important that even in current tightened financial circumstances, we cannot afford not to commit to this.

**What I would like the Minister to say**, in responding, is that he shares my belief that neo-nicotinoids present such a threat that their use will be suspended until and unless the best scientific evidence gives them the all-clear. And that priority will be given to the development of international methodologies for assessing the effects of systemic pesticides and, crucially, sub-lethal impacts on invertebrates.

**If he can’t manage that, can I request that he commits to:**

- **Reviewing** the new research that I have referred to, on record today, and reconsider the licences that have been granted for all neo-nicotinoids
- **Withdrawing** the licences that allow neo-nicotinoids to be used on plants that produce nectar and pollen, until the evidence is clear that they have no impact on the environment.
- **Establishing** a national monitoring system for pollinators and pollination rates.
- **Producing a formal response** to the scientific papers that I have just drawn attention to. Lord Henley has made it clear that the government will consider new research and respond accordingly.
- **Stating what concentrations of neonicotinoids are found in UK waterbodies and if these levels being routinely monitored.**

- **Asking the Environment Agency to work with SEPA and NIEA to undertake a review of levels of neonicotinoids in UK waters and their impacts, as well as ensuring that there is adequate monitoring in place.**
- **Commissioning the research that would be scientifically robust enough to clarify any link between neonicotinoids and UK populations of wild pollinators, including bumblebees, moths and hoverflies as well as honeybees to the Government's satisfaction.**

Finally, can I say that a Government that aims to be the "greenest ever" cannot just ignore a hugely significant threat to this, arguably, the most important tier of animal life on this planet. It needs to act. Now's the time to wake up and smell the coffee!