

A Round-up of the Pollinator Issue Around the World

The European Experience

The EU identified a need to protect pollinators from pesticides in the 1980s and specific protective measures were included in the EU's 1991 Directive concerning the placing of plant protection products on the market (which was [updated](#) in 2009). Over the past five years repeated reports of a regional decline in honey bee population have put the spotlight back on insecticides, with growing pressure on regulators to update the risk assessment procedures for honey bees.

Back in 2008 Germany became the first European nation to suspend certain uses of a neonicotinoid after a high mortality of honey bees was linked to neonicotinoid-coated seeds. Italy and Slovenia also suspended the use of neonicotinoid seed treatment uses in 2008. Encouraged by these suspensions, NGOs stepped up their long-running campaign criticizing the risk assessment process in Europe.

The issue hit the headlines again in April 2012 as a result of the Whitehorn et al. and Henry et al. publication which, on the basis of studies conducted under artificial exposure scenarios, postulated sub-lethal effects of neonicotinoids on honey bees. At the time the European Food Safety Authority (EFSA), which is the EU's independent scientific advisory service, asserted that these studies were largely based on [unrealistic scenarios](#), nevertheless their publication raised the political temperature, fuelled further activities from anti-pesticide activists and drove extensive media interest on the issue.

By this stage honey bee health had become a political issue and despite extensive outreach work by the European Crop Protection Association (ECPA) with policy makers and subsequent field trials which contradicted the Whitehorn and Henry results, the political tide towards increased regulation could not be turned. In the supposed absence of a scientific consensus many policy makers, especially those in the European Parliament, used the "precautionary principle" to justify their stance as the pressure increased on the European Commission to act.

In 2012, the European Commission asked EFSA to study the safety of three neonicotinoids – clothianidin, imidacloprid and thiamethoxam – and in January 2013 the food safety body, having used a non-approved and unpublished assessment methodology, identified a number of risks as well as [numerous data gaps](#) in those substances.

Despite the EFSA study shortcomings the European Commission proposed a two year suspension on most uses of the three neonicotinoid insecticides (soon after it also proposed to restrict the use of the insecticide fipronil). The proposal was without sound technical foundation and, for some uses, completely disregarded certain Member States' field monitoring data and risk mitigation measures, including this [UK study](#).

Ahead of the vote the European Crop Protection Association (ECPA) continued its high level lobbying and a minority of Member States did oppose the ban, but the commission was still able to push the proposal through, changing the originally proposed two year suspension into a prohibition of certain products without time limitation. The restrictions entered into force in December 2013 for the three neonicotinoids and February 2014 for fipronil. Both Bayer and Syngenta have submitted a legal challenge to the European Commission over the ban.

The US Experience

Specific rules to ensure protection of pollinators in cropped areas, such as the code of federal requirements, has been included in US regulations since the 1980s. But the push for new regulation has grown over recent years.

In 2006, there was a decline in managed honey bee colony health, which some termed as Colony Collapse Disorder, though the population levels resemble historical trends in cyclical bee population declines. Nevertheless the declines brought the issue of pollinator health firmly into the headlines and created growing pressure on the US authorities to update the risk assessment procedures for honey bees.

In response the US Environmental Protection Agency (EPA) convened a FIFRA Scientific Advisory Panel in September 2012 to review a proposed tiered process for quantitatively evaluating the potential risks that crop protection products pose to honey bees.

This was followed in 2012 by a joint EPA/U.S. Department of Agriculture (USDA) "Pollinator Summit" attended by all major stakeholders. The [summary report](#) that followed the Pollinator Summit, issued the following year in 2013, concluded that parasitic *Varroa* mites are chief among the many factors that may affect pollinator health. The report recognized that "... the *Varroa* mite is the single most detrimental pest of the honey bee". Additional adverse bee health factors outlined in the report include various viral and bacterial diseases; nutritional challenges; lack of genetic diversity; misuse of pesticides; and cultural practices.

In general the crop protection companies have supported a variety of steps to maintain and improve pollinator health. The industry also supports agricultural policies to ensure adequate pollinator habitat through legislative means, such the Farm Bill.

In August 2013 EPA implemented sweeping label changes for insecticide products containing the neonicotinoid active ingredients clothianidin, thiamethoxam, imidacloprid, and dinotefuran. The changes only affect foliar uses and focus on avoiding treatment during crop bloom, but numerous questions of interpretation have arisen from both farmers and the crop protection industry.

EPA has characterized these label changes as interim, subject to further refinement based on risk assessments, and has announced plans to issue a Pesticide Regulation Notice in 2014, expanding the label amendments to other insecticide products.

There has also been a focus on research into the broader factors impacting pollinator health. EPA and USDA jointly hosted a *Varroa* mite Summit in February 2014 at the request of beekeepers, with support from growers and the crop protection industry.

Outreach remains a key element for the crop protection industry in dealing with the pollinator issue in the US, and CropLife America strives to maintain good relationships with the beekeeping industry, growers who utilize managed colonies or are impacted by colony loss, and the state and federal regulatory agencies. In addition, CropLife America initiated a social media campaign to increase awareness of the many factors that impact pollinators, and build understanding of this complex issue. CropLife America continues this campaign through its [Twitter](#) feed and encourages engagement from CLA members, regulators, legislators, beekeepers, media and other social media users.

The Canadian Experience

In spring 2012, during the corn planting season, there were a number of reports of increased honey bee deaths in Southern Ontario and Quebec.

An [evaluation](#) of the 2012 incidents by Health Canada's Pest Management Regulatory Agency (PMRA) concluded that the planting of corn seeds treated with neonicotinoids "contributed to the majority of the bee mortalities" with the "likely route of exposure being insecticide contaminated dust generated during the planting of treated corn seed". It added that the "unusual weather conditions" in the spring of 2012 were also thought to be a contributing factor.

In response to the 2012 incidents, CropLife Canada's Pollinator Working Group (PWG) intensified stewardship activities in relation to pesticides and bees and developed a comprehensive set of [Best Management Practices](#) (BMPs) for growers of insecticide-treated corn seed. The BMPs were reviewed by a range of stakeholders including growers, beekeepers and the Canadian regulatory agency, PMRA.

During the winter of 2012/13, there was an intensification of anti-neonicotinoid activities in Ontario with the Ontario Beekeepers' Association (OBA) releasing [a public position](#) in April 2013 calling for an immediate ban on all conditionally registered neonicotinoid products. It appears that the OBA have partnered with prominent activist groups, including the Sierra Club of Canada, which has essentially radicalized the organization. The messaging from these groups evolved away from a focus on acute incidents related to the planting of treated seed and towards broader impacts including environmental loading and persistence.

The 2013 corn planting season in Ontario led to more reported incidences of bee kills and [an interim report from the PMRA](#) states that detectable residues of neonicotinoids were found in approximately 70 per cent of the dead bees sampled. Investigations by the PMRA and the Ontario provincial government concluded that the mortality incidents were due to direct exposure by bees to dust released during the planting of treated seed and that control of the contaminated dust would address the issues that had been experienced in 2012 and 2013.

The Canadian Honey Council, the national body representing beekeepers in Canada, is on record supporting joint efforts of PMRA and the USEPA to re-evaluate neonicotinoids and endorsing decisions based on science and not on public opinion or perception. Informally, the position of the Alberta beekeepers (the largest bee keeping province) appears to be aligned with the Honey Council.

In the [interim report into the 2013 incidents](#), the PMRA concluded that “current agricultural practices related to the use of neonicotinoid treated corn and soybean seed are not sustainable”. It subsequently published a [Notice of Intent \(NOI\)](#) outlining additional required pollinator protection measures for the 2014 growing season. The deadline for comments on the NOI was 12 December 2013 and CropLife Canada [prepared a detailed industry response](#). The industry was generally supportive of the mitigation measures that the PMRA was proposing.

PMRA is now moving ahead with implementation of the requirements outlined in the Notice of Intent, but this does not include a ban.

Meanwhile an environmental activist group has used social media to unlock their network of supporters to generate over 10,000 “click and submit” letters to the PMRA, asking for a total ban on neonicotinoids across Canada. Grower groups in Canada also became engaged and provided submissions imploring a science-based approach to this issue. Hundreds of individual growers also weighed in on the consultation to express their views.

Update – 18 July 2014

A Canada-wide honeybee health surveillance study was [launched on July 15](#) to document the health of honeybees throughout the country. The Alberta Beekeepers Commission, representing 60 per cent of the honey crop in Canada, submitted the grant proposal which was approved by Agriculture and Agri-Food Canada. Samples will be collected from all 10 provinces. The study will be led by Dr. Carlos Castillo and his team at the National Bee Diagnostic Centre in Beaverlodge, Alberta and will be completed over four years. Funding for the study will come from the government, CropLife Canada, the Alberta Beekeepers Commission and the Manitoba Beekeepers Association.

The Australian Experience

In Australia, where neonicotinoids have been used for around 20 years, there have been no significant reports of honey bee losses or of Colony Collapse Disorder. Australia is also free of the Varroa mite. Much of the country’s efforts are therefore spent preventing the introduction of the Varroa mite to their bee population

The [National Sentinel Hive Program](#) was established in 2000 to enhance surveillance for honey bee parasites (most notably Varroa) and exotic bees in the vicinity of seaports. The purpose of the program is to assist the early detection of these parasites and bees. The program operates at 27 ports which are checked regularly for infection to monitor the potential arrival of a disease threat. Another measure is the placement of empty “bait” hives to attract bees that come off

ships. Australia maintains strict quarantine barriers, along with thorough research and funding before the introduction of new pollinator species.

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has also reacted to the honey bee health debate growing in the EU and US. In August 2012 it initiated a [review](#) to identify whether neonicotinoid insecticides presented more of a risk to honey bee health than other pesticides. As part of the review the APVMA asked the Australian Environment Agency (AEA) to provide advice on whether current data requirements for testing of insecticides were adequate. The AEA subsequently made recommendations in a [report](#) published in November 2012 which included reviewing labeling requirements and updating data guidelines. These recommendations are still under review.

Most recently, in February 2014, the APVMA published an “Overview [report](#) on bee health and the use of neonicotinoids in Australia”. The report found that the introduction of neonicotinoids had “led to an overall reduction in the risks to the agricultural environment from the application of insecticides”. It added that “Australian honeybee populations are not in decline, despite the increased use of this group of insecticides in agriculture and horticulture since the mid-1990s”.

The report went on to say pollinator decline in other parts of the world was likely to be caused by “multiple interacting pressures including habitat loss and disappearance of floral resources, honeybee nutrition, climate change, bee pests and pathogens, agricultural/horticultural pesticides, miticides and other chemicals intentionally used in hives, and bee husbandry practices”.

CropLife Australia has continued to focus on promoting best practice where members are committed to stewardship throughout the entire lifecycle of crop protection products to ensure that at each stage of the process, appropriate measures are in place to minimize off-target movement of chemicals. To minimize the risk of unintended pesticide exposure to bees and other beneficial insects, CropLife Australia is developing a seed treatment stewardship guide to ensure farmers use seed treatment products safely, sustainably and reasonably.

The New Zealand Experience

The New Zealand media has increased its focus on honey bees in recent years. Much of the media has been generated by private research projects and official government reports. The local beekeepers – mostly through their two industry associations – have also hit the headlines, not least through their annual “Bee Awareness Week”.

In general the bee industry in NZ is doing well. The number of managed beehives in New Zealand has grown from 300,000 in 2005 to about 450,000 in 2012. The number of beekeepers is also rising, and honey production is increasing. However, the feral bee population has been decimated since the arrival of Varroa mite in 2000.

Varroa is the single biggest culprit behind bee health issues and resistance to Varroa-control miticides has already been observed in New Zealand.

The bee lobby has two main advocacy groups – [the National Beekeepers Association](#) (NBA), which is run by a PR company and is effective at getting headlines, and the Federated Farmers Bees, which is part of the national farmers' union and has a more pragmatic and scientifically sound approach.

The bee lobby is supported by the organic movement and the green lobby, which uses bee health as an opportunity to attack pesticides and neonicotinoids. The Green Party is a powerful block in the government's opposition, with 14 MPs out of a total of 120 MPs in the New Zealand Parliament.

The bee groups identify three core issues with agrichemicals – off-target application, surfactants, and neonicotinoids.

On the first two Agcarm and its members are working with farmers and the authorities to promote good spray practice and to tweak regulation on labeling. But on the third issue, there remains no evidence that neonicotinoids have caused a problem in New Zealand. Agcarm has met with the Environmental Protection Authority to present its views on this. For its part the EPA is watching the action of other regulators where reviews are taking place – particularly in the EU, US, Canada and Australia – and will likely wait for these to be completed before taking action in New Zealand.

Meanwhile the NBA is now focusing its activity on registrations and registration renewal. It is putting in submissions on new products which are slowing down the registration process. This has further frustrated the industry and so another key element of Agcarm's work is engagement with bee spokespeople and regulators to discuss all [issues](#) surrounding honey bees and to try to work collaboratively.

The Japanese Experience

Chronic Colony Collapse has not been observed in Japan. Despite some sporadic reported incidences of bee decline, the overall number of bee hives in Japan has remained at the same level over the past decade even though the amount of neonicotinoid used in Japan has increased rapidly. When looking at the number of managed bees, it must be noted that honey production in Japan is low compared to China, Europe and America.

Nevertheless, with the issue gaining political traction in the EU and US, the Japanese agriculture ministry has requested regional offices to investigate the use and effectiveness of neonicotinoids, in particular their use to control stink bugs in paddy fields. The crop protection industry has made it clear that neonicotinoids are essential for protecting rice from bugs and that there are no substitutions.

In a separate move, the ministry has required eight neonicotinoid manufacturers to develop a list of honey bee safety tests. Based on the list the ministry may revise its risk mitigation or evaluation methods.

Meanwhile, the Japanese environment ministry has announced plans to collect information through a literature survey on the concentration of neonicotinoid insecticides in ponds and lakes.

Overall the pressure against neonicotinoids is increasing in Japan, not least due to the developments in the EU and US, however the government currently has no plan to restrict their use.

The South African Experience

Most discussions that have taken place on the pollinator issue in Africa have been limited to South Africa, but even in South Africa reports of unusual colony losses have been rare and the debate has instead focused on events elsewhere.

Given South Africa's strong trade links with the EU, there were some initial fears that the EU ban on neonicotinoids could impact on trade, with a potential revision of Maximum Residue Limits (MRLs). CropLife South Africa met with the Department of Trade and Industry to discuss the issue where it was clarified that MRLs would remain unaffected. The only circumstance under which trade would be affected would be if neonicotinoids had been banned due to human health fears, the government said.

As the issue has become more high profile in the EU and US, South Africa has convened several high level conferences.

In February 2012 the Association of Veterinary and Crop Associations of South Africa (AVCASA) which represents CropLife South Africa and the South African Animal Health Association hosted a workshop to discuss mitigation measures to protect honey bee colonies. The delegates came up with several "actions" including compiling an instruction manual to manage problem colonies, to create awareness among farmers about the correct usage of neonicotinoids and to carry out education campaigns on honey bees and their issues.

A further workshop took place in May 2013 where the bee industry, regulators, grower associations, the pesticide industry and the seed industry shared their thoughts. The South African bee industry has so far been pragmatic and not totally anti-pesticides.

CropLife South Africa has been active in presenting its position statement on neonicotinoids to policy makers, stakeholders and members of the South African Congress to prevent the NGO community from leading the debate and so far the government has not proposed any new restrictions on the use of pesticides.