Bees & Pesticides

Fact Sheet

Pesticide Action Network Europe

Toxic to Bees: 20% of Pesticides

According to the European Crop Protection Agency (ECPA) between 15% and 20% of the 210 most important pesticide substances on the EU market are toxic to bees (HQ>50%).[1] A follow up study by the UK Pesticides Safety Directorate analysed 286 EU pesticides and identified 14% (40 substances) as being toxic to bees (HQ>50%).[2]

Honeybees pollinate 40% of leading food crops

Honeybee pollination increases the edible yield of 46 (40%) of the world's leading 115 food crop species – including apples, citrus, tomatoes, sunflowers, rapeseed and soy – while a further 10 crops gain following pollination by other species of bee and insect.[3] Another 31 leading food crops show increased seed production due to animal pollination. Less than 25% of the world's leading food crop species are wind pollinated and do not benefit from honeybees.

80 million tonnes of EU food produce

Honeybees play a key role in the successful production of over 80 million tonnes of EU food produce each year – which equates to 160 kilos of food per EU citizen.

Food Crop	EU Production (MT/ year)[4]	Most important to which Member States?
Apple	9,800,000	IT, FR, PL, DE, ES, HU, AT, RO, NL, BE
Citrus Fruit	10,900,000	ES, IT, EL, PT, CY, MT
Tomato	15,800,000	IT, ES, EL, PT, FR, NL, PL, MT
Rapeseed	18,300,000	DE, FR, PL, UK, CZ, HU, AT, DK, SK, RO
Sunflower seed	4,800,000	FR, HU, ES, BG, RO, IT, SK
Cucumber & Gherkin	2,600,000	ES, PL, NL, EI, DE, RO, FR
Chilli & Pepper	2,500,000	ES, NL, RO, IT, HU, EL, BG
Pears	2,700,000	IT, ES, NL, FR, BE, AT, PT,
Peach & Nectarine	4,200,000	IT, ES, EL, FR
Melons	5,000,000	ES, IT, EL, RO, FR, HU
Plum & Sloe	1,200,000	FR, RO, ES, IT, AT, HU, DE, PL
Pumpkin & squash	1,200,000	IT, ES, FR, EL, DE, RO
Other	3,700,000	
Total	**82,700,000**	

Pesticides on Pollen

More than 140,000 tonnes of synthetic pesticides (active substances) are sprayed onto EU food crops each year.[5] Many of these pesticides contaminate pollen grains and therefore present a hazard to bees. A 2008 analysis of pollen taken from agricultural crops found on average six different pesticide contaminants per pollen sample, with the worst affected pollen containing 31 different pesticides.[6]

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Bees are in global crisis

In recent years beekeepers throughout Western Europe have reported experiencing 'Colony Collapse Disorder' (CCD) – a devastating phenomenon in which full strength honeybee colonies suddenly fail. Recent reports from France document mortality rates of up to 60%, while the UK farming minister has warned that British bee colonies could vanish in under a decade.

Pesticides and Colony Collapse Disorder

While the causes of Colony Collapse Disorder are still under investigation, the consensus scientific opinion is that CCD occurs due to a combination of factors – including exposure to pesticides toxic to bees. [7] Pesticides most likely act as stressors making bees more susceptible to parasitic, microbial and viral attack.

Cost to the Consumer

Recent declines in the number of honeybees due to CCD have led to increases in pollination rental fees paid by farmers – particularly in France.[8] In parts of California pollination expenses now account for 20 percent of a farmer's annual budget – more than fertilizer, water or even labour. Farmers testifying to US Congress recently reported deliberately reducing the area they farm due to the shortage of bees.[9]

Banned in France, Germany

In 1999 the French government withdrew authorisation for the insecticide imidacloprid as a seed dressing on sunflowers. Subsequent investigations into the impact of pesticides on bees led to further curbs on imidacloprid as well as fipronil, while in 2008, Germany suspended seed treatments containing three insecticides toxic to bees: imidacloprid, thiamethoxam, and clothianidin, as well as methiocarb.

Beekeepers demand pesticide restrictions

Given the substantial threats posed to bees, in 2006 European beekeepers demanded an EU-wide withdrawal of the insecticides imidacloprid, fipronil, thiamethoxam, and clothianidin.

European Parliament votes to protect bees from pesticides

On 23 October 2007, Members of the European Parliament voted in favour of an EU-wide withdrawal of pesticides toxic to bees (HQ>50%). Sadly the proposal was not taken up at a meeting of the Council of Ministers on 23 June 2008, and is therefore set for reconsideration by the European Parliament in autumn 2008.

EU: Honey and Hives

Beekeepers in the European Union oversee more than 11 million honeybee hives, which together provide 160,000 tonnes of honey per annum. Leading EU honey producers include Spain, France, Greece, Romania, Hungary, Poland, Italy, Bulgaria, UK and Austria.[10]

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[1] EU proposal for Pesticide Authorisation: Impact of new 'cut-off' criteria, European Crop Protection Agency (ECPA), November 2007

[2] Assessment of the impact on crop production in the UK of the 'cut off' criteria and substitution in the proposed Regulation of the European Parliament and of the Council concerning the placing of plant protection products in the market, Pesticide Safety Directorate, May 2008
www.pesticides.gov.uk/uploadedfiles/Web_Assets/PSD/Impact_report_final_(May%202008)(1).pdf

[3] Klein A, *et al*. 'Importance of pollinators in changing landscapes for world crops, Proceedings. Biological sciences / The Royal Society, 274(1608): 303-13(2007)
[4] FAOSTAT, UN FAO, http://faostat.fao.org
[5] The use of plant protection products in the European Union, European Commission (2007) http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-76-06-669/EN/KS-76-06-669-EN.PDF
[6] Pesticide build up could lead to poor honeybee health, Pennsylvania State University, 18 August 2008 http://live.psu.edu/story/33989/rss30
[7] A Benjamin and B McCallum, A World Without Bees, Guardian Books, London, 1 July 2008
[8] Statement made by Bernard Vaissière, pollination specialist with the French National Institute for Agricultural Research, in a media interview with Newsweek: R. Jacobsen, Stung by Bees, Newsweek pp 60-62, 23 June 2008 www.newsweek.com/id/141461
[9] Tom Leonard, 'Food Prices Threatened by Silence of the Bees', Daily Telegraph, 27 June 2008 www.telegraph.co.uk/news/worldnews/northamerica/usa/2206897/Food-prices-threatened-by-silence-of-the-bees.html
[10] FAOSTAT, UN FAO, http://faostat.fao.org