



ENGLISH SUMMARY

Extensive presence of endocrine disrupting pesticides in Spanish rivers

Pesticides are designed to act as poisons against their target organisms, but likewise they are able to harm other living organisms. Many pesticides have been banned for causing cancer, malformations and for affecting the reproduction of wild animals and human beings. Many more pesticides should be banned for causing deformities or diseases of the immune, neurological and hormone systems. Additionally, some of these pesticides possess a highly stable nature that allows them to linger in the environment and in living tissues, building up through the food chain. These properties of toxicity and stability make pesticides hazardous polluting agents, with a high cost to health and to the environment. Spain is the European country with the highest level of consumption of pesticides, with 78.818 tonnes registered in 2014. This massive use results in a growing presence of pesticide residues in food and in the environment.

In following report, Ecologistas en Acción and PAN Europe have analysed the official data from the Monitoring Programmes of Water Quality, carried out by the 10 River Basin Organisations that responded to our petition for information regarding the presence of pesticides in surface waters. It shows an incomplete picture, due to data insufficiency of the presence of toxic pesticides in Spanish river waters, putting emphasis on those pesticides capable of affecting the hormone system of animals and human beings (so-called endocrine disruptors), which turn Spanish rivers into veritable *hormonated rivers*.

The data collected by the monitoring programmes show:

- The presence of toxic pesticides in all of the river basins analysed. Altogether, 46 of the 95 pesticides analysed in 2012, and 47 of the 104 substances analysed in 2016, were detected.
- Most of the substances detected are insecticides (21) and herbicides (19). Fungicides were detected to a lesser degree (5).
- The use of the vast majority of the pesticides detected (70%) is not authorised by the EU or by Spain. Pesticides that have been banned many years ago due to their high toxicity, such as DDT, Lindane, Atrazine, Endosulfan, among others, are still present in the aquatic environment.
- 26 of the 47 pesticides detected in 2016 are known or suspected endocrine disruptors .
- The most contaminated river basins are those subject to a more intensive agricultural system:

Jucar: by and large the most contaminated basin. 34 of the 57 pesticides monitored in 2016 were detected, 22 of which are banned and 21 are possible endocrine disruptors. Several substances were detected very frequently (DDT, HCH, Chlorpyrifos, Imazalil, Tiabendazole and Endosulfan, in over 100 samples) and several of which in high concentrations, well above the limit permitted.

Ebro: 21 of the 37 substances monitored in 2016 were detected, 16 of which are either endocrine disruptors or are suspected of such. 18 of the pesticides detected are not authorised for use.

Basque Country: 17 of the 55 substances monitored in 2016 were detected, 14 of which are suspected endocrine disruptors and 15 are unauthorised, such as Lindane and its isomers, which were the substances detected most frequently.

Tagus: 15 of the 17 substances monitored were detected; 12 of which unauthorised substances and 13 are possible endocrine disruptors.

Miño-Sil: 13 of the 58 substances monitored were detected, 5 of which are not allowed for use and 11 are possible endocrine disruptors.

Douro: 13 of the 34 pesticides monitored in 2016 were detected, 10 of which are suspected endocrine disruptors and 8 are unauthorised. The banned herbicide Isoprothyrone is the substance detected in highest concentration and amount.

Segura: 9 of the 57 substances monitored in 2016 were detected, where 6 are possible endocrine disruptors and a further 6 are unauthorised.

Guadiana: 7 of the 27 substances monitored were detected, 6 of which are confirmed or suspected endocrine disruptors. The use of 6 out of the 7 substances detected is not authorized. The endocrine disrupting herbicide Terbutylazine is detected frequently and in high concentration.

Galician Coast: only 3 of the 55 substances monitored were detected, among them the insecticide Chlorpyrifos, which is an endocrine disruptor, as well as 2 banned herbicides.

Cantabria: only 2 of the 21 substances monitored in 2015 were detected, each present only in one of the samples collected. Both substances are banned, of which Lindane is classified as an endocrine disruptor.

Chlorpyrifos, a neurotoxic insecticide, has been detected in 8 of the 10 river basins analysed in 2016, which reveals an extensive and prolonged use. It is also the pesticide detected in the largest number of food items in Spain.

Lindane and its isomers are detected in 7 of the 10 river basins analysed in 2016, due largely to poor management of the waste generated by the manufacturing process until the early 1990s.

Glyphosate has been detected in 3 of the 5 river basins analysed in 2016. It was detected in all samples taken from the Jucar River (48). It is the substance most frequently detected in the Tagus River (263 of the 421 samples analysed) and in the Basque Country it is the most frequently detected pesticide, after Chlorpyrifos, which demonstrates the extensive use of this toxic herbicide.

The presence of various combinations of pesticides in one single river basin is of particular concern: there were 34 pesticides detected in the Jucar River and 21 in the Ebro. Several studies have demonstrated how the exposure to combinations of endocrine disrupting pesticides can multiply their toxicity.

These results call for urgent steps towards reducing the use of pesticides. To that end, Ecologistas en Acción and PAN Europe propose:

- To ban the use of pesticides with endocrine disrupting properties;
- To reduce the use of pesticides in Spain by at least 50% in the next 10 years, following the examples of France or Denmark;
- To transform the unsustainable industrialised farming system into an agro-ecological one that is respectful of life;
- To update the environmental regulation according to scientific knowledge;
- To update, expand and unify the programmes monitoring pesticide levels in the water;
- To uphold the law.