EXECUTIVE SUMMARY

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WEED MANAGEMENT: ALTERNATIVES TO THE USE OF GLYPHOSATE



CONTEXT

- The EU authorisation renewal of the herbicide active substance glyphosate is coming up. In the previous renewal decision in 2018, it was renewed for only 5 years rather than 10, due to massive citizen concern and doubts about its safety. This means the authorisation should have ended at the end of 2022, but an extension was granted for gathering evidence of ecotoxicological impacts.
- The Green Deal and Farm to Fork strategy announced aspirational targets of 50% reduction in the "use and risk" of chemical pesticides in the EU. Glyphosate based herbicides are the most widely used herbicide globally and in the EU. The use of glyphosate-based herbicides globally is increasing strongly (increased almost 15 times in the last 10 years) while in Europe sales and use remains high especially in larger agricultural member states of the EU, and FADN data shows farmers' spending on pesticides generally is increasing. To achieve the targets, these EU trends must be reversed. The proposal for the Sustainable Use of pesticides Regulation (SUR) published last year would legislate for the 50% reduction target but also strengthen Integrated Pest Management (IPM: the use of non-chemical alternative practices that reduce the likelihood of pest occurrence, so chemical pesticides are used only as a last resort, reducing both the need to use pesticides and also pest resistance to those agrochemicals.

KEY MESSAGES

This third edition of the report first introduces what glyphosate is, how it works, and what are the consequences of its use; it then details how much it is used in Europe and globally and for what purposes. We observe an increasing trend for sales and use of glyphosate based herbicides.

The report analyses why glyphosate is not a benign substance, but rather has hugely significant ecological impacts. Firstly, it has direct impacts because it targets the metabolic pathway that is not only present in plants but also in bacteria and fungi. Secondly, it has indirect impacts through its over-application in a "zero tolerance" approach that kills plants which feed other forms of life. We witness the resulting collateral damage in the form of a biodiversity crash both in the soil and above ground, with impacts on beneficial organisms that are otherwise needed to ensure fertility and productivity. These are for example pollinators, predators of insect pests, also organisms that create and maintain topsoil, and fungal mycorrhizal symbionts that directly protect and nourish crops.

The report questions the need for herbicides in food production by exploring what exactly a weed is. Not all weeds are damaging to the crop or the yield: only 20% of species are. And even then, they must be present in high enough quantities to cause economic damage. This vast majority of non-crop plants which are damaging neither crops nor yields are called Aliae Plantae - other plants. These simply do not need to be killed and can actually be beneficial to the farmer and food production systems. So farmers are wasting their money on increasing amounts of increasingly costly pesticides, whilst weakening their resilience to climate change shocks and extreme weather events. The droughts Europe experienced in 2022, likely the new normal, showed us that multispecies systems are the most resilient; the only remaining green in pasturelands was weed cover. With a new definition of what is a weed, and by relaxing the zero tolerance, everything-must-die approach, this negative spiral can be turned around, representing a win-win-win: for farmer autonomy and against input dependency; for turning around the biodiversity crash; for climate-proofing our agro-ecosystems; and for ensuring food security. The scientific consensus clearly tells us, and is supported by the UN - the FAO, IPBES, the IPCC - that the biggest threat to food security by far is climate change and ecosystem collapse. Sticking with the status quo, as opponents of the Green Deal and pesticide reduction goals would have it, is a recipe for disaster and hunger, and is clearly not in the best interest of farmers.

The study illustrates that this turnaround is technically feasible and is actually already underway. Agriculture free of synthetic herbicides is already possible. Just look to organic farming - many of the techniques detailed in the study are grassroot innovations of organic farmers. Moreover, significant massive pesticide use reductions are possible using IPM approaches, which spare the use of pesticides for when they are really needed. Let us not forget that IPM was invented almost a century ago and is still promoted by the chemical industry, to save both their resources and those of farmers, and to fight resistance so their products can remain effective. The major part of this study outlines in detail the different methods of Integrated Weed Management (IWM), an offshoot of IPM.

What about the economic costs for the farmers of cutting down or transitioning away from large-scale herbicide use? The section on economic aspects of herbicide reduction looks into what financial support is available under the EU's Common Agricultural Policy (CAP). It is clear that farmers responding to decades of societal demands cannot be left alone to bear the cost of that transition towards less damaging practices: it is the role of public funding to support them as they take that risk. Key here is the role of risk management (insurance schemes and mutual funds) and investment grants, co-funded between the EU and the member states, to provide

that cover. Yet support is not only financial, and adapting production systems can be knowledge-intensive: whether it is finding optimal rotations or advice on adapting machinery, we need investment in advisory services and outreach, also using peer-to-peer exchange and partnerships connecting farmers with researchers and agronomists. The study concludes that the framework already exists in the CAP, but much depends on whether the member states have been willing to include in their national CAP Strategic Plans all the necessary elements to achieve a reduction in pesticide use, and then whether they promote these options to farmers (inter alia through advisory services), and finally on how strong the uptake by the farmers is. National Strategic Plans outlining how CAP money is spent at member state level can always be adapted and improved at least once a year, which means the Commission has a role to play in guiding and persuading member states to adapt farming to what society wants and to the future needs of farming itself.

Lastly, the study illustrates what citizens want and what some EU member states have already done or tried to do in terms of discontinuing the use of glyphosate-based herbicides.

TAKE HOME MESSAGES

- Large scale herbicide reduction, as a part of the EU effort toward pesticide use reduction targets, can be achieved. It is technically feasible and already in play; mainstreaming is needed.
- The vast majority of weeds do not harm the yield and these Aliae Plantae are beneficial to agroecosystems and food security; not systematically destroying them would prevent waste of money and resources and help reverse the biodiversity crash.
- EU and member state funding is available to support farmers in transitioning, but much depends on member states offering that support, as well as on the advice given, including concerning grants available, and finally on uptake by farmers.