

Tests made for the first time reveal situation out of control **GLYPHOSATE: THE HERBICIDE CONTAMINATING PORTUGAL**

Tests carried out by the Portuguese No GMO Coalition in cooperation with the Detox Project (detoxproject.org) revealed **staggering levels of glyphosate** (more commonly known as Roundup), the most used synthetic chemical pesticide in Portuguese agriculture*¹ – and, up to now, the most neglected. It has been over ten years since any official testing for the presence of glyphosate in food, soil, water, air or people was conducted in the country. This unprecedented void is partially filled today with the publication of urine analysis results from 26 Portuguese volunteers as well as some food samples. Portugal must now face the problem and find solutions both at the national and European levels in order to clarify the reasons for such high human contamination and reduce it by several orders of magnitude.

Although the Ministry of Agriculture monitors food annually for the presence of over 300 pesticide residues, **glyphosate has been excluded from these analyses** throughout a number of governments and irrespective of the party in power.*² The same goes for tap water, since the Ministry does not include glyphosate in the list of substances to be tested by utility companies.*³ When formally asked at the beginning of this year, the Ministry produced no test results, not even those required by European Union regulations, claiming theoretical modeling showed routine analysis was unnecessary.*⁴

However, the **more than 1600 tons of glyphosate** annually sold in Portugal which, beyond agricultural use, is also abundantly sprayed in urban areas nationwide (with few exceptions) to control weeds on pavements, do not disappear without a trace. They represent a potential for widespread contamination that has remained wholly untested. Today we can finally begin to piece together a picture where the severity of this silent, invisible and probably mortal pollution stands out (according to the World Health Organization glyphosate is probably carcinogenic to humans and its carcinogenicity to experimental animals has been demonstrated).*⁵

In 26 volunteers, **glyphosate was detected in 100% of the urine samples**. In Switzerland, in 2015, a similar program detected glyphosate in just 38% of cases and, in 2013, sampling carried out by Friends of the Earth in 18 European countries showed 44% of the people to be contaminated.*⁶

The average value of glyphosate in the urine of the Portuguese samples was 26.2 ng/ml (nanograms per milliliter). Taking the Water Framework Directive as a reference, which defines allows no more than 0,1ng/ml of glyphosate in tap water, it becomes clear that the average amount of glyphosate detected in these samples **would contaminate drinking water 260 times above the maximum legal limit!**

The scenario in other countries is not perfect, but is much less severe than the Portuguese case. The study "Urinale 2015"*⁷, which included more than 2000 Germans, found an average of just 1.1 ng/ml: approximately 20 times lower than the Portuguese results. Besides, the highest value found in Germany was 4.2 ng/ml, while the Portuguese values varied between 12.5 and 32.5 ng/ml. That is, the least contaminated Portuguese volunteer has three times more glyphosate than the worst German case. Other published studies typically present average values close to the German ones.

Some other relevant data from the national results:

- the three youngest volunteers (ages between 7 and 19 years old) presented an average value higher (26.7 ng/ml) than the whole group, a disproportion that was also identified in the German study;
- there was no clear difference in the average values of the 4 volunteers that, being professional gardeners, could be understandably more contaminated (the other 22 were all urban dwellers with no professional exposure);
- although the case with the highest level of glyphosate is a gardener, that with the second highest value is not;
- the values above 20 ng/ml are, according to the available literature, the highest concentrations ever found in people with no professional exposure to glyphosate.

It is worth noticing that the levels of glyphosate in urine are just a fraction of the real exposure (which is inevitably several times higher).^{*8}

Some food samples were also analyzed. The Portuguese No GMO Coalition chose wheat (wholegrain and flour), wholegrain oats and cow's milk. The latter showed no detectable glyphosate, but that wasn't true for the other samples. While glyphosate attained 10 ng/g (nanograms per gram) in oats, non-processed wheat grains reached 43 ng/g. Results in white flour (type 55) show glyphosate is not limited to the outer layers. In fact, the highest value of all three was detected: 46 ng/g. Although these values are below legal limits, they **show glyphosate may be regularly present in the food chain**, which would point to a chronic exposure scenario.

The testing performed on behalf of the Portuguese No GMO Coalition is limited to a small number of samples and does not allow for definitive conclusions. However, it does raise a major red flag. The Ministry of Agriculture must come out of denial mode and face **glyphosate as the omnipresent toxic chemical that it is**. The main exposure routes have not been established but food and water are obvious candidates and should undergo ample testing. The sources of contamination must be eliminated as a matter of national urgency.

In addition, until the mess is sorted out and glyphosate levels in Portugal are drastically reduced, the government has no moral standing to abstain or vote in favor of glyphosate re-authorization. This European vote will take place in a few short weeks at a technical committee where Portugal is represented by the Ministry of Agriculture. Furthermore, a ban on glyphosate is largely supported by Europeans,^{*9} and the Portuguese, faced with the results presented today, will hardly express a different opinion.

Glyphosate toxicity is not yet a consensual and established scientific fact. Besides cancer, several scientific publications report an association of glyphosate with teratogenic defects (birth defects)^{*10}, endocrine disruption^{*11}, hepatic and kidney toxicity^{*12} and even autism,^{*13} but many scientists, namely those connected to the industry, disagree with these results. In the European Food Safety Authority, an agency of the European Commission, 62% of the experts in the pesticide panel have conflicts of interest regarding the companies whose products they are evaluating.^{*14} It seems fair to say that current scientific ignorance and uncertainty justify a deep distrust of the official safety rhetoric.

This outlook is exacerbated by two additional factors. In the case of hormonal deregulation, for example, there are no safe contamination levels. That is, any concentration is dangerous and may have harmful effects. Moreover, glyphosate is never used alone: commercial herbicides include other substances, not identified in labels, that increase glyphosate's aggressiveness and may themselves be very toxic.^{*15} Hence glyphosate detection indicates the probable presence of other chemicals that are not considered at all when legal limits are set for each pesticide.

While additional research is not done and unanswered questions remain, the only way to protect public health is through precautionary measures. In the case of glyphosate this means

voting against its re-authorization (which the European Commission wants for 15 years and the European Parliament for 7 years).

In the name of transparency we wish to note that the testing was done by exclusive initiative of the Portuguese No GMO Coalition, who then partnered with the Detox Project. Funding was raised in online forums and from companies and non governmental organizations. The total cost – over four thousand Euros – was covered as follows:

- several individual donations 250€
- two organic food companies 2225€
- non governmental organizations 1580€

The Portuguese No GMO Coalition was the solely responsible for the initiative, including the writing of this press release. Additional information on analytic methods and laboratories involved is available.*¹⁶

References

Download at www.tinyurl.com/refsglifosato2016

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- *8 – A critical review of glyphosate findings in human urine samples and comparison with the exposure of operators and consumers
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- *13 – The possible link between autism and glyphosate acting as glycine mimetic - A review of evidence from the literature with analysis
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- *15 – Potential toxic effects of glyphosate and its commercial formulations below regulatory limits
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Press contacts: +351-917301025 or info@stopogm.net or www.stopogm.net