

# Living with GMOs

## A Letter from America

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### **An open letter to the citizens, politicians, and regulators of the UK and the rest of the EU about the hazards of genetically modified crops**

We are writing as concerned American citizens to share with you our experience of genetically modified (GM) crops and the resulting damage to our agricultural system and adulteration of our food supply.

In our country, GM crops account for about half of harvested cropland. Around 94% of the soy, 93% of corn (maize) and 96% of cotton grown is GM.<sup>1</sup>

The UK and the rest of the EU have yet to adopt GM crops in the way that we have, but you are currently under tremendous pressure from governments, biotech lobbyists, and large corporations to adopt what we now regard as a failing agricultural technology.

Polls consistently show that 72% of Americans do not want to eat GM foods and over 90% of Americans believe GM foods should be labeled.<sup>2</sup> In spite of this massive public mandate, efforts to get our federal<sup>3</sup> and state<sup>4</sup> governments to better regulate, or simply label, GMOs are being undermined by large biotech and food corporations with unlimited budgets<sup>5</sup> and undue influence.

As you consider your options, we'd like to share with you what nearly two decades of GM crops in the United States has brought us. We believe our experience serves as a warning for what will happen in your countries should you follow us down this road.

#### **Broken promises**

GM crops were released onto the market with a promise that they would consistently increase yields and decrease pesticide use. They have done neither.<sup>6</sup> In fact, according to a recent US government report yields from GM crops can be lower than their non-GM equivalents.<sup>7</sup>

Farmers were told that GM crops would yield bigger profits too. The reality, according to the United States Department of Agriculture, is different.<sup>8</sup> Profitability is highly variable, while the cost of growing these crops has spiraled.<sup>9</sup> GM seeds cannot legally be saved for replanting, which means farmers must buy new seeds each year. Biotech companies control the price of seeds, which cost farmers 3-6 times more than conventional seeds.<sup>10</sup> This, combined with the huge chemical inputs they require, means GM crops have proved more costly to grow than conventional crops. Because of the disproportionate emphasis on GM crops, conventional seed varieties are no longer widely available leaving farmers with less choice and control over what they plant.<sup>11</sup>

Farmers who have chosen not to grow GM crops can find their fields contaminated with GM crops as a result of cross pollination between related species of plants<sup>12</sup> and GM and non-GM seeds being mixed together during storage.

Because of this our farmers are losing export markets. Many countries have restrictions or outright bans on growing or importing GM crops<sup>13</sup> and as a result, these crops have become responsible for a rise in trade disputes when shipments of grain are found to be contaminated with GM organisms (GMOs).<sup>14</sup>

The burgeoning organic market here in the US is also being affected. Many organic farmers have lost contracts for organic seed due to high levels of contamination. This problem is increasing and is expected to get much bigger in the coming years.

### **Pesticides and superweeds**

The most widely grown types of GM crops are known as “Roundup Ready” crops. These crops, mostly corn and soy, have been genetically engineered so that when they are sprayed with the herbicide Roundup® – the active ingredient of which is glyphosate – the weeds die but the crop continues to grow.

This has created a vicious circle. Weeds have become resistant to the herbicide, causing farmers to spray even more. Heavier use of herbicides creates ever more “superweeds” and even higher herbicide use. A recent review found that between 1996 and 2011, farmers who planted Roundup Ready crops used 24% more herbicide than non-GMO farmers planting the same crops.<sup>15</sup>

If we remain on this trajectory with Roundup Ready crops we can expect to see herbicide rates increase by 25% each year for the foreseeable future.

This pesticide treadmill means that in the last decade in the US at least 14 new glyphosate-resistant weed species have emerged,<sup>16</sup> and over half of US farms are plagued with herbicide-resistant weeds.<sup>17</sup>

Biotech companies, which sell both the GM seeds and the herbicides,<sup>18</sup> have proposed to address this problem with the creation of new crop varieties that will be able to withstand even stronger and more toxic herbicides such as 2,4-D and dicamba. However it is estimated that if these new varieties are approved, this could drive herbicide use up by as much as 50%.<sup>19</sup>

### **Environmental harm**

Studies have shown that the increased herbicide use on Roundup Ready crops is highly destructive to the natural environment. For example, Roundup kills milkweeds, which are the key food source for the iconic Monarch butterfly<sup>20</sup> and poses a threat to other important insects such as bees.<sup>21</sup> It is also damaging to soil, killing beneficial organisms that keep it healthy and productive<sup>22</sup> and making essential micronutrients unavailable to the plant.<sup>23</sup>

Without healthy soil, we cannot grow healthy plants.

Other types of GM plants, which have been engineered to produce their own insecticide (e.g. “Bt” cotton plants), have also been shown to harm beneficial insects including green lacewings<sup>24</sup>, the *Daphnia magna* waterflea<sup>25</sup> and other aquatic insects,<sup>26</sup> and ladybugs (ladybirds).<sup>27</sup>

Resistance to the insecticides in these plants is also growing,<sup>28</sup> creating new varieties of resistant “superbugs” and requiring more applications of insecticides at different points in the growth cycle, for instance on the seed before it is planted.<sup>29</sup> In spite of this, new Bt varieties of corn and soy have been approved here and will soon be planted.

## **A threat to human health**

GM ingredients are everywhere in our food chain. It is estimated that 70% of processed foods consumed in the US have been produced using GM ingredients. If products from animals fed GM feed are included, the percentage is significantly higher.

Research shows that Roundup Ready crops contain many times more glyphosate, and its toxic breakdown product AMPA, than normal crops.<sup>30</sup>

Traces of glyphosate have been found in the breastmilk and urine of American mothers, as well as in their drinking water.<sup>31</sup> The levels in breastmilk were worryingly high – around 1,600 times higher than what is allowable in European drinking water. Passed on to babies through breastmilk, or the water used to make formula, this could represent an unacceptable risk to infant health since glyphosate is a suspected hormone disrupter.<sup>32</sup> Recent studies suggest that this herbicide is also toxic to sperm.<sup>33</sup>

Likewise, traces of the Bt toxin have been found in the blood of mothers and their babies.<sup>34</sup>

GM foods were not subjected to human trials before being released into the food chain and the health impacts of having these substances circulating and accumulating in our bodies are not being studied by any government agency, nor by the companies that produce them.

Studies of animals fed GM foods and/or glyphosate, however, show worrying trends including damage to vital organs like the liver and kidneys, damage to gut tissues and gut flora, immune system disruption, reproductive abnormalities, and even tumors.<sup>35</sup>

These scientific studies point to potentially serious human health problems that could not have been anticipated when our country first embraced GMOs, and yet they continue to be ignored by those who should be protecting us. Instead our regulators rely on outdated studies and other information funded and supplied by biotech companies that, not surprisingly, dismiss all health concerns.

## **A denial of science**

This spin of corporate science stands in stark contrast to the findings of independent scientists. In fact, in 2013, nearly 300 independent scientists from around the world issued a public warning that there was no scientific consensus about the safety of eating genetically modified food, and that the risks, as demonstrated in independent research, gave “serious cause for concern.”<sup>36</sup>

It’s not easy for independent scientists like these to speak out. Those who do have faced obstacles in publishing their results, been systematically vilified by pro-GMO scientists, been denied research funding, and in some cases have had their jobs and careers threatened.<sup>37</sup>

## **Control of the food supply**

Through our experience we have come to understand that the genetic engineering of food has never really been about public good, or feeding the hungry, or supporting our farmers. Nor is it about consumer choice. Instead it is about private, corporate control of the food system.

This control extends into areas of life that deeply affect our day-to-day well-being, including food security, science, and democracy. It undermines the development of genuinely sustainable, environmentally friendly agriculture and prevents the creation of a transparent, healthy food supply for all.

Today in the US, from seed to plate, the production, distribution, marketing, safety testing, and consumption of food is controlled by a handful of companies, many of which have commercial interests in genetic engineering technology. They create the problems, and then sell us the so-called solutions. This is a closed cycle of profit generation that is unequalled in any other type of commerce.

We all need to eat, which is why every citizen should strive to understand these issues.

### **Time to speak out**

Americans are reaping the detrimental impacts of this risky and unproven agricultural technology. EU countries should take note: there are no benefits from GM crops great enough to offset these impacts. Officials who continue to ignore this fact are guilty of a gross dereliction of duty.

We, the undersigned, are sharing our experience and what we have learned with you so that you don't make our mistakes.

We strongly urge you to resist the approval of genetically modified crops, to refuse to plant those crops that have been approved, to reject the import and/or sale of GM-containing animal feeds and foods intended for human consumption, and to speak out against the corporate influence over politics, regulation and science.

If the UK and the rest of Europe becomes the new market for genetically modified crops and food our own efforts to label and regulate GMOs will be all the more difficult, if not impossible. If our efforts fail, your attempts to keep GMOs out of Europe will also fail.

If we work together, however, we can revitalize our global food system, ensuring healthy soil, healthy fields, healthy food and healthy people.

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