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No Safe Limits for Toxic Pesticides in Our Foods

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July 2017

On 7 April 7 2017 the South African government issued draft amendments to its regulations governing the legal limits for pesticide residues on food crops. The proposed amendments expose the gaps in regulations to date, despite the cultivation of herbicide-tolerant GM crops for almost two decades.

As the African Centre for Biodiversity (ACB) team researched the proposed changes to Maximum Residues Levels (MRLs) (see Box below) for various vegetables and staple crops, it became clear that there is no established system or single database where information on MRLs can be found. Even more concerning, it appears that these draft amendments are the first to set levels for glyphosate herbicides on soybeans, while no levels appear to have been set for glufosinate on maize,

even though glyphosate-tolerant soybeans and glufosinate-tolerant maize have been cultivated here for many years.

The incomplete information exposes the South African government's inadequate oversight of our food system. Indeed, the oversight role is fragmented across 14 separate acts of parliament, with policy execution hampered by a lack of clear demarcation regarding mandates, responsibilities and accountability. In contrast, the regulations on MRLs for international export are tightly regulated by the Department of Agriculture, Forestry and Fisheries, the South African Bureau of Standards, the Perishable Products Export Control Board, industry working groups and agrochemical companies. This begs the question, why does our government regard testing to ensure safety of local foods of less importance than that of foods destined for international trade?

Such monitoring is crucial for protecting people's health, especially with the latest evidence of the toxicity of widely used pesticides, such as glyphosate, at levels well within legal limits set in South Africa. Now we are facing the commercialisation of yet more GM herbicide-tolerant crops to replace the failing glyphosate-tolerant varieties that are succumbing to weed resistance, such as 2,4-D tolerant maize. This will only increase the chemical burden on our foods, water, land and health at a time when evidence backs the urgent need to move towards sustainable food systems to protect our food supplies and the health of our people and planet in an era of unpredictable climate change.

Since government monitoring of chemical contamination is clearly inadequate, the ACB commissioned laboratories to test for glyphosate residues in soy and maize products. Residues were found to be present in multiple foods, including Top Class soya mince and Imana soya mince, at levels within legal limits but also within the range now reported to lead to serious disease.

Current legislation and monitoring of chemicals in our foods are not sufficient to ensure the safety of South African consumers. The public remain in the dark about the extent of chemical

contamination of their food. Moving away from GM crops and placing a ban on glyphosate will help to convince the public that our health and that of our children is government's top priority.

What is the 'Maximum Residue Level' (MRL)?

The MRL is the legal limit for pesticide residues in foods for human consumption and animal feeds. Each foodstuff has its own limit for each pesticide; an MRL for glyphosate on soybean may be a different limit to that for chicken liver or maize.

MRLs are determined by various factors that consider both agronomic use and the safe legal limits, or 'acceptable daily intake' (ADI) set by regulators. ADI is based on long-term toxicity testing, and, in theory, represents safe levels to consume over a life time. However, there is widespread scepticism over such regulations, since all data is provided by industry. Further, this data is not published in the scientific literature, thus denying the public the opportunity to do independent analysis. As revealed by glyphosate approval in the European Union, even industry data has [long shown evidence of the toxicity](#) of glyphosate. But this has been consistently dismissed by regulators, who suffer major conflicts of interest, since the approval process is [conducted](#) by representatives of a consortium of chemical companies. Regulators have yet to consider independent data being made available to the public in the scientific literature, despite data indicating the causative role of glyphosate in serious diseases. For example, the recent publication by [Mesnage et al. \(2016\)](#) shows that the legal limit of glyphosate induces liver disease in rats.

MRLs are insufficient in protecting public health, as long as regulatory bodies maintain such blatant conflicts of interest and operational inadequacies.