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Monsanto's Roundup Herbicide: Killing Kidneys As Well As Weeds?

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A new observational study confirms the hypothesis that Roundup herbicide (glyphosate) is behind the mysterious global epidemic of chronic kidney disease that has taken thousands of lives.

Back in early 2014, in an article titled "Roundup Weedkiller Linked To Global Epidemic of Fatal Kidney Disease," we first reported on a paper proposing a causal link between exposure to the world's most popular herbicide (glyphosate) and a mysterious and deadly kidney disorder afflicting agriculture–intensive areas in Sri Lanka.

The paper would eventually garner such widespread attention that it compelled the Sri Lankan government to order a ban on Roundup in March of 2014, but it has since been reported that it is still being made widely available for purchase.

You can review the study abstract to get further background on their hypothesis:

> **Abstract**: The current chronic kidney disease epidemic, the major health issue in the rice paddy farming areas in Sri Lanka has been the subject of many scientific and political debates over the last decade. Although there is no agreement among scientists about the etiology of the disease, a majority of them has concluded that this is a toxic nephropathy. None of the hypotheses put forward so far could explain coherently the totality of clinical, biochemical, histopathological findings, and the unique geographical distribution of the disease and its appearance in the mid-1990s. A strong association between the consumption of hard water and the occurrence of this special kidney disease has been observed, but the relationship has not been explained consistently. Here, we have hypothesized the association of using glyphosate, the most widely used herbicide in the disease endemic area and its unique metal chelating properties. The possible role played by glyphosate-metal complexes in this epidemic has not been given any serious consideration by investigators for the last two decades. Furthermore, it may explain similar kidney disease epidemics observed in Andra Pradesh (India) and Central America. Although glyphosate alone does not cause an epidemic of chronic kidney disease, it seems to have acquired the ability to destroy the renal tissues of thousands of farmers when it forms complexes with a localized geo environmental factor (hardness) and nephrotoxic metals.

Since the publication of this paper, critics have argued the hypothesis suffers from a lack of data, and that any discussion of health concerns associated with this herbicide are simply anti-biotech propaganda.

Roundup Linked to Kidney Disease Epidemic In First Observational Study of Its Kind

In answer to critics' concerns, a newly published study titled "Drinking well water and occupational exposure to Herbicides is associated with chronic kidney disease, in Padavi-Sripura, Sri Lanka," fills the alleged data gap. Researchers sought to identify risk factors associated with chronic kidney disease of unknown etiology (CKDu) among paddy farmers; a disease which they described as "the most important health issue in the dry zone of Sri Lanka."

The study method was described as follows:

> A case control study was carried out in Padavi-Sripura hospital in Trincomalee district. CKDu patients were defined using health ministry criteria. All confirmed cases (N = 125) fulfilling the entry criteria were recruited to the study. Control selection (N = 180) was done from people visiting the hospital for CKDu screening. Socio-demographic and data related to usage of applying pesticides and fertilizers were studied. Drinking water was also analyzed using ICP-MS and ELISA to determine the levels of metals and glyphosate. [Read the entire study here]

Up to 5 Times Higher Risk of Kidney Disease In Those Exposed To Glyphosate

The study found that the highest risk for CKDu occurred in participants who:

- Drank well water (2.52 fold increased risk)
- Had a history of drinking water from an abandoned well (5.43 fold increased risk)
- Sprayed glyphosate (5.12 fold increased risk)
- Were male (4.69 fold increased risk versus women)

The researchers also analyzed water samples from the area and found:

> Water analysis showed significantly higher amount of hardness, electrical conductivity and glyphosate levels in abandoned wells. In addition Ca, Mg, Ba, Sr, Fe, Ti, V and Sr were high in abandoned wells. Surface water from reservoirs in the endemic area also showed contamination with glyphosate but at a much lower level.

The discovery of higher water hardness, and higher levels of glyphosate and the elements Ca, Mg, Ba, Sr, Fe, Ti, V and Sr, support the hypothesis that the epidemic of kidney damage is being caused by the cumulative and synergistic toxicity of glyphosate and metals in the water these Sri Lankans are being exposed to.

The researchers discussed their findings:

> The present study revealed that male farmers from Padavi-Sripura, who spray glyphosate, drink well water and had history of drinking from an abandoned well, are at a significantly higher risk of developing CKDu. This association is evident even after adjusting for all the baseline and exposure variables. This is the first study in Sri Lanka that analyses the association of CKDu among farmers with the type of pesticide and most widely used pesticide during their lifetime.

An explanation was offered for why males were found to be at an increased risk for CKDu:

> Due to the strenuous exertion needed for carrying a 16 L or 20 L metal sprayer full of liquid pesticides on their back for several hours, the spraying function has been exclusively delegated to the male farmers.

The researchers concluded:

> The current study strongly supports the hypothesis that CKDu in Sri Lanka is a drinkingwater-related disease in farmers who have a history of spraying glyphosate. Further studies should focus the abandoned drinking water sources in areas with high prevalence of the disease and investigate the link between CKDu and glyphosate in particular and heavy metals in drinking water.

Far Bigger Than Just Sri Lanka's Problem

Now that there is solid observational data to support the hypothesis that glyphosate herbicide is behind the kidney disease epidemic affecting 400,000 Sri Lanka (with an estimated death toll of 20,000 thus far), it should be pointed out that this is not the only region in the world at risk. Similar agricultural regions afflicted with chronic kidney disease of unknown origin exist in India, Egypt and Central America. You can watch the 5-minute documentaries "Mystery in the Fields" and "Cycle of Death" to learn about other afflicted areas.

The reality is that we are all at risk. Anyone exposed to glyphosate — which is anyone who drinks water, breaths the air, or eats non-organic food — could be subject to its kidney-harming effects. In fact, we reported on the alarming increase in kidney disease in the U.S. since the inception of glyphosate-dependent GM farming.

Moreover, glyphosate is a wide spectrum toxicant. We have identified over 27 mechanisms through which it harms mammalian physiology, and published studies on 50 diseases that it may cause or contribute to. Is it any wonder that increasingly people are calling not just for "truth in labeling" initiatives but an outright ban on GMOs and the dangerous chemicals like glyphosate that contaminate them all?

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