Ghanaians at risk? Studies show a link between cancer and herbicide use in agriculture
In a 2015 monograph issued by the International Agency for Research on Cancer (IARC), a body of the World health Organization, the former concluded on basis of scientific evidence, that “Glyphosate is probably carcinogenic to humans.” This means that this popular organophosphate compound, which is found in most agro-chemicals including the popular Ghanaian brand Edwuma Wura, causes cancer.Glyphosate is the most widely used herbicide globally, with a production of 620,000 tons in 2008, according to paper published in Elsevier journal by Norwegian researchers, Bohn et al. (2014). In 2015, Sri Lanka followed El Salvador’s 2013 decision to ban Glyphosate after scientific studies showed that it (glyphosate) was the cause of increased incidence of Chronic Kidney Disease (CKD) which inflicted 15% of the working population in the northern part of the country.

The human health and environmental impact of Glyphosate has been a subject of intense controversy within the international scientific community. For instance the European Food Safety Authority (EFSA) strongly contested the conclusions of IARC on grounds that the data was inconclusive. Recent studies in 2015 by Robin Mesnage (a molecular biologist and geneticist at King’s College London) and his colleagues, concluded that “chronic exposure to a Glyphosate-based Herbicides (GBH) in an established laboratory animal toxicity model system at an ultralow, environmental dose can result in liver and kidney damage with potential significant health implications for animal and human health.”

“...They also need to be active in the requirement for safety studies. These haven’t been done. When the EPA employed the term ‘substantially equivalent,’ it gave the chemical companies essentially a waiver on doing any of the safety tests. The only thing that they’ve ever tested for is acute toxicity. Well, we know that glyphosate, for instance, isn’t an acute toxin. It’s a serious chronic toxin. That’s been well-established in peer-reviewed scientific articles. We have more of those coming along all the time. There is no question that it’s a chronic toxin.”

- Prof. D.M. Huber (Professor emeritus, Purdue University)

1 Download full paper [here](#).
populations.” Other researchers, employing different investigative methods have reached similar conclusions (e.g. see Olorunsogo, Bababunmi & Bassir, 1979; Larsen, Najle, Lifschitz & Virkel, 2012).

From an environmental perspective, some researchers (see Vital et al, 2017) have provided evidence to support the view that glyphosate use has adverse impact on non-target plants and environment. For instance, Roberto Gomes Vital and his colleagues, after designing a study to evaluate whether the drift of trinexapac-ethyl and glyphosate promotes changes in the photosynthetic metabolism of sunflower plants, concluded thus:

“The photosynthetic metabolism of sunflower plants is not affected by the growth regulator trinexapac-ethyl. However, with the application of glyphosate, plants suffered changes in the photosynthetic apparatus, with reduction in the concentration of carbohydrates and chloroplastid pigments and subsequent damage to cell membranes.”

Additionally, the researchers observed (in agreement with Valavanidis et al. 2006), that even at low concentrations, glyphosate can cause changes in plant physiology, not to mention its “potential to alter gene expression and metabolic pathways and damage proteins, plant development and, consequently, induce the decrease of antioxidant defenses or cause immediate oxidative damage to organisms.”

The Ghanaian Smallholder Farmer & Glyphosate

In a snap-check survey conducted by Rural Heights Foundation, agro-chemical dealers were selected randomly from Pinanko in Gomoa West, Kantamanto in Accra and Swedru in Agona, to screen their inventory mix for Glyphosate. All retailers reviewed sold some brand of herbicide with Glyphosate compound. There is additional observational data from Pinanko, Darumpong and Oseedze in the Gomoa West district to suggest the popular use of Sunphosate and Nwura Wura (all containing Glyphosate), during land clearance and preparation stages of the production phase. According some farmers spoken to by Rural Heights Foundation, the weedicide is a “life-saver” because labor cost for land clearance could amount to GH¢100 per pole (acre). This cost is prohibitive to many smallholder farmers compared to the shelf price of a powerful weedicide such as Glyphosate that may cost as low as GH¢ 5 per 0.5 litre bottle.

4 For a balanced assessment of how EFSA and IARC could possibly arrive at two different conclusions, a journalistic report by The Guardian offer some insight. See https://www.theguardian.com/science/political-science/2015/may/13/chemical-reactions-glyphosate-and-the-politics-of-chemical-safety

5 Gomoa West is one of the 216 districts in Ghana. It falls within two of the three ecological zones; coastal and forest. The predominant occupation and economic activity is agriculture (crop farming). According to Ghana Poverty Map 2015, 22.6 per cent of the population live below the poverty line (GH 1,314 p.a). Research has shown the traditional usage of Glyphosate-based herbicide (GBH) by farmers during pre-planting.
Unfortunately, decision-making by smallholder farmers which accounts for only their own microeconomics without a clear understanding about the macro-wide health implications for food consumers poses tremendous risk to public health safety. The absence of a strong local advocacy front against chemically-heavy agricultural practices leaves the smallholder farmer, and indeed the average food consumer at risk of exposure to long term health and environmental hazard.

High Incidence of Chronic Kidney Disease in Ghana: Coincidence?

In March 2014, Ghana News Agency reported statements by Dr. Yaw Asante Awuku, the physician specialist at Cape Coast Teaching Hospital Dialysis Centre\(^6\), indicating that one (1) out of every ten (10) patients are diagnosed with kidney disease. Few studies (Osafo et al., 2011; Ephraim et al., 2015)\(^7\) have drawn correlation between diabetes and hypotension and Chronic Kidney Disease (CKD) among high risk populations in Ghana, so there is little scientific grounds to suggest that incidence of kidney disease may be attributed to contaminations in the food chain as a result of herbicide use. Nonetheless lab studies from other jurisdictions provides clues in terms of the linkage between glyphosate use and liver/kidney diseases. Indeed, it is a known fact that liver disease is a risk factor for Chronic Kidney Disease.

Why is this Issue Important?

On January 10, 2017 the European Commission registered a European Citizen’s Initiative (ECI) which after one year and subject to collection of one million signatures from EU members, will enjoin the Commission to take a decision on the ban of glyphosate. This will have implications for Ghana’s trade with EU. Notwithstanding intense battle for policy influence by the pro-glyphosate advocates, the groundswell of popular civic opposition in EU to the use of glyphosate, till date, is the loudest call for caution to sub-Saharan African states, including Ghana, to take a policy view that protects the health of its citizens and ensure a sustainable ecological climate that is consistent with the Sustainable Development Goals #3, #11 and #13.

Policy Implications and Key Recommendations

The Environmental Protection Agency (EPA) has a regulatory mandate over pesticide use. According to Section 31 of Act 490, “The Agency may approve a pesticide subject to the prescribed conditions and may only register a pesticide if it is satisfied (a) that the pesticide is safe and effective for the use for which it is intended, and (b) that the pesticide has been tested for efficacy and safety under local conditions.

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Considering the evolution of knowledge spurred by recent scientific research, we [Rural Heights Foundation] argue that most of the Glyphosate-Based Herbicide (GBH) products on the market were approved, and rightly so, without the benefit of emerging information regarding the toxicity of such herbicides and its carcinogenic impact on human health. As a result we call on the Environmental Protection Agency, through its Hazardous Chemical and Pesticide Technical Committees, to conduct a comprehensive review of all Glyphosate-Based Herbicides within the context of new scientific data as provided in this brief.

The consequences of not acting in alignment with global sentiments will be felt through bilateral trade restrictions with development partners. For instance if the European Citizen’s Initiative (ECI) calling for a ban of Glyphosate, achieves success by gathering 1 million signatures by 2018, some EU states, if not all may follow the example of Sri Lanka, Malta and El Salvador in banning the agrochemical. This would have drastic implications for trade partners that use glyphosate in their agricultural practices.

Sources Cited


**About Rural Heights Foundation**

Rural Heights Foundation is a nonprofit organisation that engages in social advocacy and direct intervention in the area of well-being, education and micro enterprise within rural Ghana. Our broader mandate is to help reduce incidence of poverty in rural Africa through direct interventions and sound policy advocacy within 5 thematic areas; participatory governance, institutional reforms and youth entrepreneurship development.

In response to the call for youth participation in agriculture, the Foundation has designed a farm-based internship program in Gomoa West, where volunteers understudy local farmers to appreciate the rudiments of managing the agriculture value chain. Rural Heights Foundation is looking to partner with the National Youth Authority, Ministry for Food and Agriculture, corporate sponsors and other youth development organizations to support this worthwhile government policy of 1 factory in every district in order to reduce youth unemployment.

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