Reviewer’s report

Title: Concerns over use of glyphosate-based herbicides and hazards associated with exposures: a consensus statement.

Version: 2 Date: 21 August 2015

Reviewer: Kate Guyton

Reviewer’s report:

This manuscript provides a consensus statement concerning the widespread use and associated hazards of the herbicide glyphosate. The manuscript draws attention to deficits in the data concerning glyphosate exposures and toxicities. The authors make a compelling case for increased biomonitoring of the US general population, toxicological testing by the US government, as well as improved rigor and transparency of the scientific review supporting regulation. The topic is very timely and the recommendations are well-justified and clearly communicated. Suggestions, mostly minor, that the authors may wish to consider as they finalize their manuscript for publication are provided below.

Major Review Comments:

1. In Section VII, Implications, line 47, exposure from drinking water is emphasized. The authors may wish to highlight other important exposure sources, including in the air from spraying operations (concerning workers as well as community residents) and dermal occupational exposures. Regarding spraying operations, they may wish to include on page 3, in the paragraph beginning on line 42, aerial community exposure as a result of the US government drug eradication program using glyphosate in Colombia (http://bogota.usembassy.gov/nas-eradication.html), which has been recently canceled.

2. Page 10, point 3. Reference 50 concerns studies of NHL risk in occupationally-exposed populations, which would likely involve exposure through the dermal route. Such studies provided limited evidence of carcinogenicity in humans according to the recent IARC evaluation. Suggest rephrasing this point to clarify that a link of NHL risk with dietary exposure, while possible, hasn’t been studied in human populations (to the knowledge of this reviewer).

3. Page 10, point 4. In the 2nd sentence, what is meant by “realistic”? Would this include occupational exposures? The epidemiologic data mentioned above provides evidence of carcinogenicity at the levels of exposure actually experienced in human populations.

4. On page 12, Point 3, here or elsewhere it may also merit mention of their opinion on whether studies used for regulatory assessments have examined potentially susceptible populations; these populations are also not usually represented in the occupational studies, including those that have demonstrated cancer and other hazards.
5. The authors advocate for a “fresh and independent” examination, an important recommendation that could perhaps bear some expansion. First, in discussing recent evaluations, they may wish to comment particularly on 1) the role of interested parties such as the Glyphosate Task Force (e.g., in providing study descriptions and assessments to the BfR for their evaluation vs. as observers to an evaluation by independent scientists at the 2015 IARC cancer evaluation) 2) the public availability of all supporting documentation for independent scientific evaluation and 3) the public availability of a protocol specifying the conduct of the review. Second, they could lend their perspective on when, by whom and how such an evaluation should be conducted—e.g., by the US government/international organization or an independent scientific review body (e.g., National Research Council); once, periodically or when uses are expanding; procedures, including transparency regarding data sources and evaluation methods as well as public disclosure of real or apparent conflicts for expert panel members and any other participants, etc.

Minor comments to improve clarity (in order of appearance):
1. Page 3, line 29, was this review based on publicly available data? Line 36, the authors may wish to specify that the pathway does not exist in vertebrate cells.
2. Page 5, line 39, please clarify the US EPA value given—is it the cRfD?
3. The organization of Sections I to VII (which begin in the middle of the document- should the current “Introduction” become Section I?) may merit some reconsideration. In particular, points 4-5 under Section II as well as point 4 under Section III might be moved and/or merged with existing points under Section V, concerning the uncertainties in the current assessments. Under Section V, it isn’t clear how the points are ordered; the points concerning glyphosate alone and associated with their specific recommendations (e.g., 5, 6 and 7) might be listed first.
4. Page 8, line 47, suggest GBHs “may pose” or “potentially pose” higher risks to kidneys and liver, as all target organs may not be equally sensitive to the same dose.
5. Page 9, line 9. Is this lack of monitoring also pertinent outside the US? Line 36, has glyphosate been classified as an EDC? As a very minor point on Line 44-45, suggest inverting the sentence so that it begins “The timing...” to give better emphasis to these factors that determine adverse outcomes.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.