Data Submitted (UTC 11): 5/5/2014 12:00:00 AM
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Comments: Invasive Plants

Attached are public comments by Ann McCampbell.

May 5, 2014

To:Maria T. Garcia, Responsible Official
Santa Fe National Forest
11 Forest Lane
Santa Fe, NM 87508

Attn:Invasive Plant Control Team

Re:Public Comments on Draft Supplemental Environmental Impact Statement for the Invasive Plant Control Project for the Santa Fe and Carson National Forests (DSEIS)

I previously submitted comments on the Draft Environmental Impact Statement (DEIS) and was an appellate of the ROD and Final Environmental Impact Statement (FEIS) that was overturned in 2006.

The following are my comments on the DSEIS.

While concerns about non-native species are justified, it is rarely mentioned that by far the most destructive invasive species in the U.S. are non-native humans. This proposal is a prime example of the human compulsion to meddle in processes largely beyond our control with the likely outcome that many of the actions taken will cause more harm than good. In the case of using herbicides, the hazards are certainly not worth the risks.

HERBICIDES

Herbicides are toxic chemicals that have no place in the National Forests. They pollute air, water, and soil and pose a risk to wildlife and the public.

Once again, the Forest analysis overblows the harm from non-native vegetation and vastly underestimates the harm from herbicides. The DSEIS relies on risk assessments and studies that are woefully out-of-date (ranging from mid-90's to early to 2000's) to dismiss health concerns from exposure to herbicides.

I also note a disturbing change in nomenclature since the FEIS, now referring to "mitigation measures" as "design features". This appears to be an attempt at linguistic detoxification, to make it sound like there are no hazards that need to be "mitigated". But this name change will not affect the toxicity of herbicides.

ROUNDUP

Take the case of Roundup (active ingredient glyphosate). Hardly a month goes by
when there is not another "Roundup is worse than we thought" study published. Since the previous assessments in the FEIS, glyphosate has been further linked to cancer, and shown to have reproductive and endocrine disrupting effects. There is also evidence that exposure to Roundup may be responsible for rising worldwide rates of Crohn's disease.

Entropy 2013, 15, 1416-1463; doi:10.3390/e15041416
entropy
ISSN 1099-4300
www.mdpi.com/journal/entropy
Review

Glyphosate's Suppression of Cytochrome P450 Enzymes and Amino Acid Biosynthesis by the Gut Microbiome: Pathways to Modern Diseases

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Received: 15 January 2013; in revised form: 10 April 2013 / Accepted: 10 April 2013 /
Published: 18 April 2013

Abstract:

Glyphosate, the active ingredient in Roundup®, is the most popular herbicide used worldwide. The industry asserts it is minimally toxic to humans, but here we argue otherwise. Residues are found in the main foods of the Western diet, comprised primarily of sugar, corn, soy and wheat. Glyphosate's inhibition of cytochrome P450 (CYP) enzymes is an overlooked component of its toxicity to mammals. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics. Thus, glyphosate enhances the damaging effects of other food borne chemical residues and environmental toxins. Negative impact on the body is insidious and manifests slowly over time as inflammation damages cellular systems throughout the body. Here, we show how interference with CYP enzymes acts synergistically with disruption of the biosynthesis of aromatic amino acids by gut bacteria, as well as impairment in serum sulfate transport. Consequences are most of the diseases and conditions associated with a Western diet, which include gastrointestinal disorders, obesity, diabetes, heart disease, depression, autism, infertility, cancer and Alzheimer's disease. We explain the documented effects of glyphosate and its ability to induce disease, and we show that glyphosate is the "textbook example" of exogenous semiotic entropy: the disruption of homeostasis by environmental toxins.
[Full article attached to email]
Most recently Roundup has been implicated in causing fatal kidney disease in Sri Lanka, among other places. As a result, the President of Sri Lanka has banned it there. The study found that the kidney disease did not occur without the co-presence of heavy metals, including arsenic, but of note is that New Mexico soil contains high levels of arsenic. This possible cumulative effect of simultaneous exposure to Roundup and arsenic was not analyzed in the DSEIS.

Sri Lankan President Bans Sale of Roundup Over Chronic Kidney Disease Study
Posted on Mar 15 2014 - 2:57am by Sustainable Pulselated

Sri Lanka has become the first country to ban the sale of Monsanto's "Roundup" glyphosate weedicide after a study found that the weedicide is responsible for the increasing number of chronic kidney disease patients.

Update: The Sri Lankan government will not impose a total ban on Roundup herbicide. It seems that the government of Sri Lanka has caved in to the plantation lobby and decided to "restrict" the herbicide only in areas

where the disease is prevalent.
Minister of Special Projects S.M. Chandrasena said the decision to ban Glyphosate sales in the country has been taken on a directive of the President Mahinda Rajapaksa.
Source: www.colombopage.com
Addressing a media briefing, the Minister said several programs have been implemented to prevent the high occurrence of kidney disease among the farming community.
Fact Box: The Sri Lankan Agriculture Ministry banned the import of Roundup and the pesticides Carbaryl, Chlorophyriphos, Carbofuran and Propanil last year due to fears that the chronic kidney disease amongst farmers could be linked to them. However, this latest President's order now bans all local sales from the stocks that are still available of Roundup, in reaction to the study.
A new study published in the International Journal of Environmental Research and Public Health found a link between the weedicide known as Roundup and the fatal Chronic Kidney Disease of Unknown origin (CKDu) affecting mostly, the rice farmers in Sri Lanka and several other countries.
The study found that while the weedicide itself is not nephrotoxic, when it combines with hard ground water containing metals such as cadmium and arsenic, either naturally present in the soil or added through fertilizer, glyphosate becomes extremely toxic to the kidney. In recent years a significant increase in the number of CKD patients has been observed in some parts of the country, especially in North Central, North Western, Uva and Eastern Provinces.
According to the Minister a national program to prevent the kidney disease will be launched next Friday. The program will encourage the Sri Lankan farmers to produce and use organic fertilizer.
Dr. Channa Jayasumana of Rajarata University, the lead author of the study on glyphosate, told the national radio that paddy has been planted without the use of chemical fertilizer in an extent of 100 acres in the left bank of Rajanganaya and plans are underway to plant traditional paddy varieties in 5,000 acres of land in the right bank also.
The Ministry of Agriculture aims to cultivate paddy in 100,000 acres of land throughout the country in the Maha season using organic fertilizer.
http://sustainablepulse.com/2014/03/15/sri-lankan-president-bans-sale-roundup-chronic-kidney-disease-study/#.U2fLECjeNFI
HERBICIDE RISK TO HUMANS

The claim in the DSEIS that "since the public will not be applying herbicides, their risk of exposure by any application method proposed in this project is zero" is unsubstantiated and wrong. After an herbicide is applied to the environment it does not "go away" even after it is dry or after it is "absorbed by the plant". Residues remain on the plant, the soil, and target and non-target vegetation.

Pets and humans can absorb herbicides through the skin after touching contaminated areas, despite claims in the DSEIS that states, "The likelihood of a member of the public absorbing an herbicide through their skin is virtually zero." To the contrary, 2,4-D especially is known for its high rate of absorption through the skin.

And the expanded plan to use herbicides in "areas of human habitation" and "in highly used developed recreation areas" increases the risk of human exposure to herbicides significantly.

As in the FEIS, the DSEIS makes no mention of range of human vulnerability to herbicides, and no mention of chemically sensitive individuals, many of whom frequent the forests to escape urban and agricultural pollution. The DSEIS makes broad sweeping statements about how the herbicides to be used by the Forests will not hurt anyone. This is just wishful thinking.

Although areas may be restricted or warnings signs placed before herbicide applications, no specific information is given in DSEIS indicating how long these would be in place. In another Santa Fe Forest project, signs would only be left in place a few days, which is not nearly long enough to protect those that are more vulnerable to low levels of herbicides.

The DSEIS also dismisses the possibility of cumulative or synergistic effects of herbicide use, claiming that since herbicides will have no adverse effects, then there cannot be any cumulative or synergistic effects. But since the assumption there cannot be any adverse human effects is incorrect, this dismissal of cumulative or synergistic effects is inaccurate and unacceptable.

DICAMBA

Drift is not the only way the public could be exposed to airborne herbicides. Herbicides can also volatilize after application. The FEIS admits that dicamba can volatize, but says the amount is negligible and therefore of no concern. But dicamba is well known for being able to volatilize – that is, re-enter the air after it has dried – in such large amounts that it can cause serious damage to neighbor's crops. Therefore, the public could inhale significant amounts of dicamba long after its application in the Forests.

According to National Pesticide Information Center Technical Fact Sheet on Dicamba (http://npic.orst.edu/factsheets/dicamba_tech.pdf),

"Dicamba has volatilized under field conditions and injured non-target crops. In growth chamber experiments, the acid form was most volatile, and the inorganic salts were least volatile. In field experiments with the less volatile forms of dicamba, potted soybeans showed symptoms of injury when exposed to the vapors of treated corn up to 60 meters away. 38"

Another statement in the DSEIS is false at worst and misleading at best. "Studies show that the risk of dermal exposure is higher than the risk of inhalation. Since the risk of dermal exposure is below the LD50, the risk of inhalation would be as well." But inhaling levels "below the LD50" is hardly a safeguard. This just means that half of the test animals that received a particular dose did not die! It does not address other adverse affects that can occur from inhaling lower doses.

ENDOCRINE DISRUPTION

Probably nowhere is the DSEIS more out-of-date than in its views and data on endocrine disrupting chemicals. The DSEIS states:

"In virtually all published cases where a series of doses are tested, endocrine effects did not occur below some threshold dose (U.S. EPA 1997).

It is now well known and accepted that the effect of endocrine-disrupting chemicals can be higher at lower levels than higher ones and does not follow the typical "dose makes the poison" paradigm. See below.

www.ncbi.nlm.nih.gov/pmc/articles/PMC3365860/ (full article available here)

Endocr Rev. Jun 2012; 33(3): 378–455.
Published online Mar 14, 2012. doi: 10.1210/er.2011-1050
PMCID: PMC3365860
Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Responses
Laura N. Vandenberg, Theo Colborn, Tyrone B. Hayes, Jerrold J. Heindel, David R. Jacobs, Jr., Duk-Hee Lee, Toshi Shioda, Ana M. Soto, Frederick S. vom Saal, Wade V. Welshons, R. Thomas Zoeller, and John Peterson Myers
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Abstract
For decades, studies of endocrine-disrupting chemicals (EDCs) have challenged traditional concepts in toxicology, in particular the dogma of “the dose makes the poison,” because EDCs can have effects at low doses that are not predicted by effects at higher doses. Here, we review two major concepts in EDC studies: low dose and nonmonotonicity. Low-dose effects were defined by the National Toxicology Program as those that occur in the range of human exposures or effects observed at doses below those used for traditional toxicological studies. We review the mechanistic data for low-dose effects and use a weight-of-evidence approach to analyze five examples from the EDC literature. Additionally, we explore nonmonotonic dose-response curves, defined as a nonlinear relationship between dose and effect where the slope of the curve changes sign somewhere within the range of doses examined. We provide a detailed discussion of the mechanisms responsible for generating these phenomena, plus hundreds of examples from the cell culture, animal, and epidemiology literature. We illustrate that nonmonotonic responses and low-dose effects are remarkably common in studies of natural hormones and EDCs. Whether low doses of EDCs influence certain human disorders is no longer conjecture, because epidemiological studies show that environmental exposures to EDCs are associated with human diseases and disabilities. We conclude that when nonmonotonic dose-response curves occur, the effects of low doses cannot be predicted by the effects observed at high doses. Thus, fundamental changes in chemical testing and safety determination are needed to protect human health.

IMPURITIES AND INERT INGREDIENTS

As in the FEIS, the contribution of impurities and inert ingredients to herbicide toxicity is again swept under the rug in the DSEIS. FYI - “Inert” ingredients are now called “other” ingredients because they are biologically active and not truly inert.

The FEIS admits that some of the impurities could cause cancer at a rate of one in a million, as if that was acceptable. There are, in fact, no safe levels for chemicals that are carcinogenic, mutagenic, or cause reproductive or developmental harm. Some of the proposed herbicides contain such chemicals.

The DSEIS admits there is uncertainty as to what “inert” ingredients are in herbicide products and yet still claims that the impacts of using herbicides are known, and furthermore, are negligible. How is this possible? No one can assess the impact of unknown chemicals, which means the impacts of herbicides are extremely uncertain.

In addition, no specific herbicide products (with EPA registration numbers) are listed in the DSEIS, nor does it analyze any specific products. Thus, the environmental and health impacts cannot be determined. This lack of data is a serious omission from a document whose prime objective is to do just that.

FAILURE TO ADEQUATELY ADDRESS SHORTCOMINGS IN DEIS

The DSEIS fails to adequately address the three reasons the Appeal Officer reversed the decision on the FEIS.

1)There is still inadequate analysis of the population trend for ptarmigan.

2)There is still inadequate evaluation and documentation of environmental cumulative effects. For example, there is no mention of piscicides being regularly used by the NM Game & Fish Department in the Carson Forest, and no analysis of the cumulative impact on fish exposed to piscicides along with herbicides applied in or near water.

3)The concerns of the NM Environment Department about applying picloram in the municipal watersheds are

summarily dismissed in the DSEIS, even though picloram is well known to leach in soil and contaminate water. It strains credulity to understand how anyone could propose putting any herbicides in a watershed (which serves as a drinking water source), but picloram is one of the poorest choices.

CONCLUSION

The Forests need to go back to the drawing board and do an updated and more accurate assessment of herbicide impacts, especially to humans. This should include a thorough review of herbicide research by independent sources. Relying on outdated Risk Assessment documents is insufficient. A new analysis also must take into account the broad range of human vulnerability to herbicides, rather than make generalized statements about their harmlessness to the public.

Additional work also needs to be done to address shortcomings in the DEIS, which are not adequately addressed in the DSEIS.

Please keep me informed about this project.

Sincerely,

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