

UNIVERSITY OF HAWAI'I AT MĀNOA

John A. Burns School of Medicine

Department of Tropical Medicine, Medical Microbiology and Pharmacology

Dear JFF Group,

March 31, 2016

I have downloaded and read:

PESTICIDE USE BY LARGE AGRIBUSINESSES ON KAUA'I Findings and Recommendations of The Joint Fact Finding Study Group

Thank you for this invitation to provide comments on the JFF group GM Crops and Pesticides report. As professor (tenured, full) at the John A. Burns School of Medicine, University of Hawaii, an academic public health professional, a Fellow of the American College of Epidemiology, and a member of our Hawaiian community I have been engaged in environmental health issues here in the Islands and elsewhere (please see attached CV), I was pleased to see the Draft report of the Joint Fact Finding Study Group.

In brief, this is outstanding accomplishment of the JFF which has made a comprehensive assessment of all available information and made their conclusions based on the scientific evidence and that is there are no public or individual health effects to the Kauai community due to the commercial use and applications of pesticides by large agribusinesses. I concur.

The study group was composed of a set of 8 component individuals that provided a clear and unbiased assessment of pesticide use on Kaua'i and valid assessment of any possible health effects to the public and agricultural employees.

Comments on Recommendations

Aside from addressing a single incident of occupational exposures to pesticides, which was a failure in following established procedures, some of the recommendations made are not entirely consistent or follow logically with the findings; given the lack of any documented negative health impacts. Moreover, the recommendations given are not without impact in terms of cost, resources, expertise, and interpretation. On the face of it, it would seem that the recommendations made were for yet unforeseen or yet to be established events.

I have limited my comments specifically to the following:

7. Require mandatory medical checks p. 99

The Rationale for this recommendation is confusing. "*Pesticides migrating off of their target site has been documented*". This is not a rationale for medical monitoring of agricultural workers. In addition, applicators and field workers are not necessarily the most at risk of exposure. This would depend on many factors.

The rationale seems to be directed at controlling pesticide exposure among agricultural workers with is merited. To that end, the recommended testing of blood or urine specimens on those licensed operators / field workers will be almost always negative and a waste of resources especially, if workers are diligent. And the resources to test for very low concentrations of significant number of very different chemical pesticides in the urine or blood is huge in terms of the instrumentation needed and level of operator training and certification needed.

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It would be more cost effective to monitor and test all those who handle and apply pesticides for knowledge, skill, practice and mandated documentation. When a worker tests positive for exposure it is too late.

I would suggest that the Pesticide Applicator Certification/Recertification Program is confirmed to be strong and that the program be monitored.

E. The Honorable Virginia Pressler, M.D., – Director, Department of Health

1. Initiate a Systematic Surface Water Monitoring Program.

2. Initiate Air, Soil, and Dust Sampling Programs

Recommended in the report as “continuous and routine programs for environmental monitoring”, the objectives are not sufficiently clear nor the finding of the report such to justify the costs of testing potentially thousands of environmental specimens from water, soil, and air. Such programs are a costly waste of resources.

What is important is compliance with application methods, rules, and regulations.

3. Update Critical Health Surveillance Data.

These recommendations were clearly made without professional epidemiological consultation and are typical of many other communities in the US and elsewhere in the world who have tried to link various health outcomes to some geographic marker as a proxy for some kind of potential environmental hazard. There is an abundance of literature on this subject. An example of a local study is by Kirkham (1987)[1]. First the Hawaii Tumor Registry is without equal in the US and is updated continually. Linking health outcomes (cancer/BD) to zip codes is not recommended for two reasons. One is statistical. There will not be enough events per zip code to reach “statistical significance”, especially in Kauai. In spite of this, there seems to be an irrational obsession with using zip codes for various useless data mining endeavors.

Even if statistical significance could be achieved, zip codes are not exposures. They are zip codes. Exposure to environmental hazards – in this case pesticides - has to be demonstrated and linked directly and quantitatively to an individual or individuals.

Linking cancer, birth defects or other health outcomes geographically is called by epidemiologists “ecologic study designs”. Inferring the results from ecologic studies, i.e. from groups (zip codes for example) to individuals is termed an “ecological fallacy” and is by definition, flawed. Investigation of birth defects is in the arena of research that should be separately funded though peer reviewed funding sources such as NIH.

The Hawaii State Department of Health should not be bound by this recommendation.

The Department of Health has an excellent Hazard Evaluation Program and Director of Health. They routinely update their knowledge on published research for any new health risk factors for exposures to a wide variety of environmental agents including pesticides. Due to budget cuts there is not an environmental health epidemiologist in the Department of Health. A crucial state function is to have in

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house expertise to assess and evaluate health impacts from environmental sources, including pesticides. Adding this capacity to Hazard Evaluation and Emergency Response office will strengthen the ability of the state to address public health concerns from potential pesticide exposures. I hope that JFF will consider these suggestions and recommendations.

Sincerely,

F. DeWolfe Miller

Professor of Epidemiology

JABSOM, University of Hawaii

1. Kirkham J (1987) A retrospective examination of DOH data to determine health effects of possible exposure to smoke from cane burning. Hawaii State Department of Health: R & S Report Issue No. 57. ISSN:0093-3481.