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TESTIMONY OF CONNECTICUT PUBLIC HEALTH ASSOCIATION REGARDING H.B. 5117, AN ACT CONCERNING GENETICALLY-ENGINEERED FOODS

COMMITTEE ON ENVIRONMENT
February 23, 2012

Senator Meyer, Representative Roy, and members of the Environment Committee, my name is Kelly Rago. I am a graduate student in Public Health, and as part of my studies, I serve as an intern for the Advocacy Committee of the Connecticut Public Health Association (CPHA). CPHA is pleased to endorse **House Bill 5117**, which would require the labeling of genetically-engineered foods.

Genetically modified organisms (GMOs) are any living system (plant or animal) in which DNA has been altered to express attributes not originally displayed by that organism. Genetically modified (GM) foods are created from these plants or animals that have at least one genetically engineered gene inserted for the purpose of gaining a specific trait [1]. For example, plants can be made virus resistant by introducing a gene from the specific virus causing the disease [1].

There are many health complications that could potentially arise from the use of GMOs in human food production. It is important to note that the research on the safety of GMOs is limited; and the studies demonstrating the safety and nutritional value of GM have been completed by the industry itself [2]. One problem with GM foods that could have serious health effects is the introduction of new food allergens. Food allergies are already becoming increasingly common over time, and as of 2007, four out of every hundred children had a food allergy [3]. The allergenicity of a GM food becomes a problem when it is genetically modified to include a non-naturally occurring protein; a person sensitive to a particular protein could have a potentially life threatening allergic reaction [4, 5].

Another potential complication from GM foods is antibiotic resistance. Most GMO plants, unlike conventional plants, contain antibiotic resistance genes, inserted as markers to allow scientists to identify whether the gene of interest has properly transferred. However, this antibiotic resistance gene cannot be removed and can then be transferred to other organisms, worsening the problem of resistant bacteria strains [6].

Perhaps the greatest risk of harm from GM foods are from pesticides which are frequently found in large quantities in GM crops, e.g. Bt, an insecticide commonly found in GM corn [4,7]. Studies have shown that Bt can cause damage to red blood cells in vitro; and when Bt is combined with residues of pesticides cell death can be induced [7]. A recent study found pesticides associated with GM crops in the blood of pregnant woman, nonpregnant women and fetuses, which is concerning as these specific chemicals have been linked with reproductive disorders, congenital malformations, fetal skeletal growth abnormalities as well as complications during birth [8].

GM plants are also engineered to be resistant to herbicides. This creates a resistance to multiple herbicides, which then requires more frequent applications of stronger chemicals, such as Paraquat, 2, 4-D, and Dicamba. Research has shown a link between Paraquat and the development of Parkinson's Disease, 2, 4-D is a known skin and eye irritant, often affecting agricultural workers, and has caused cancer in rat studies [9], and both 2, 4-D and Dicamba have been associated with birth defects as well as reproductive problems [10, 11].

In addition, some plants are genetically modified to remove heavy metals from sludge fertilized soil (which otherwise would not be safe for use in food agriculture) and store them in inedible tissue of the plants. If the incorrect gene is modified, or natural genetic changes occur, the edible portions of these plants have the potential to become polluted with heavy metals then ingested by humans [4]. Genetic engineering is known to be unpredictable, as genes do not have total control of an organism's biochemistry [12]. Even if these GM plants containing heavy metals are not meant for human consumption, it is possible for them to appear on the market. An example of this occurred in 2000, when StarLink, a GM corn that was never supposed to enter the food supply, was found in taco shells [13]. While the concern here was of a particular allergen, the Union of Concerned Scientists worry that this could happen with GM plants containing heavy metals as well [4].

Despite these health risks, GM foods are regulated in the same manner as non-modified foods and labeled "generally recognized as safe" (GRAS) by the FDA [14]. This means genetically modified foods do not require premarket approval, and instead, producers of GM foods are only encouraged to consult with the FDA regarding the safety and nutritional value of their products [15, 5]. A recent article published in *Food Policy* shows that the safety studies on GM foods with favorable outcomes have almost exclusively been funded by the industry itself. **More research, without professional conflicts of interest, is necessary for a better understanding of the safety and nutritional value of GM foods [2].**

Currently over forty countries, such as those in the European Union, Brazil, China, New Zealand, Japan, Russia, and many more, have mandatory labeling laws for GM foods [16]. In a recent survey of over 100,000 United States households, 93% believed that genetically modified foods should be labeled [17]. Over the past few years, a few states (Washington, Maryland, New York, Oregon, Tennessee, and Vermont) have been attempting to pass legislation to require the labeling of foods containing GM ingredients [17]. Organizations such as the American Public Health Association and the Center for Food Safety support the labeling of GM foods [19, 20]. There have been recent efforts at the federal level as well, such as H.R. 3553: *Genetically Engineered Food Right to Know Act.* This bill was introduced December 2, 2011, and would amend the Federal Food, Drug, and Cosmetic Act, the Federal Inspection Act, and the Poultry Products Inspection Act, to require the labeling of foods containing genetically modified ingredients [21].

CPHA strongly supports H.B. 5117: *An Act Concerning Genetically-Engineered Foods* as requiring the labeling of GM foods will assure transparency by the GM food industry and also create a system which allows for the traceability of GMOs, making it possible to monitor GM foods for human health effects [22]. Genetically modified foods pose real potential health risks to humans, and when such hazards to human health are at stake, unbiased, rigorous research is necessary to protect the public's health and inform decision making [2].

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