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**Sent:** Wednesday, December 30, 2009 8:25 PM  
**To:** ATR-Agricultural Workshops <agriculturalworkshops@usdoj.gov>  
**Subject:** Thank you for choosing to read and pass along my comments!!!!

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My name is Teresa Laughlin. I have a Masters in Science in Nutrition and an undergraduate degree in Anthropology. My concern is for the health and wellbeing of all humans, animals, insects, plants, trees, water, soil, and air. Years ago I took a class ? Human Nature and the Impact of Science? taught by both the head of the genetics program at the University of Iowa and visiting Doctor of Philosophy. At the time, I believed serious ethical discussion would be in the works for decades before genetic manipulation would actually be on the market and **I never considered it would manifest, cloaked, in the foods we eat.** In witnessing what has happened to our food supply and the corporate manipulation of policy within the FDA, EPA and USDA *the ethical, health and environmental implications of genetic modification have not been addressed adequately or humanely.* Science must be blended with humanity in order to serve its purpose of benefiting the inhabitants of earth.

Little known truths:

**Food is information.** DNA is co-writer of the story food feeds our bodies, blood, bone, nerves and flesh. The body of earth is the other writer. It is the nutrients calcium, magnesium, zinc etc. that are provided through the soil and water that communicate to the genetic matrix of a plant how to develop. That information and that nutrition are passed down the food chain. *When a human being eats, we are eating the whole story:* whether pumped with hormones, grown with chemical fertilizer, genetically modified with snake venom gene to produce insecticide, genetically modified with antibiotic resistant bacteria, whether grown with biodynamic principles, grown organically, or grown in a flower pot in the backyard. Those ?stories? are transmitted to our cellular bodies. Food is nature?s way of communicating to our bodies how to *develop and flourish in the environment we are in.* This can be witnessed through the anthropological viewpoint: One example is the Inuit. Their physical structure, fat ratios, blood viscosity, etc. that allow them to survive their climate is derived from the nutrients of their traditional food sources. Their genetic predispositions alone will not let them fair so well in that landscape if they changed their diet to lean meats, fruits and vegetables. Looking at the ?average American? through the same anthropological lens reveals a great deal of what the nutrients (stripped, supplemented, artificial) in our standard food bespeak to our physical health. This perspective is vital in the discussion of GMOs.

**Biodiversity is vital. Genetic monotony is deadly.** Even Monsanto has their hand in the creation of a seed bank for the ?preservation of genetic variety?. That is scary considering the role they are also playing in monotonizing and patenting seed varieties. VERY SCARY! Genetic diversity allows for quick adaptations to the environment and successful survival of plants and animals (and humans too!).

**Soy is not a savior.** In fact, soy is toxic. Cultures who have traditionally subsisted on soy *ferment* the bean in order to render it digestible. Modern applications of soy such as TVP and the variety of "meat substitutes" are malnutritive, meaning it takes more nutrients to digest these products than they impart. This contributes to malnourishment that is brightly reflected in America as our obesity epidemic. Utilization of soy derivatives to supplement school lunches is not a solution, in fact, it would further compound psycho-social-behavioral issues as they relate to nutrition. Some numbers suggest 65-75% of soy in the US is GM. Kids in schools need access to more nourishing information, even through their food.

**Nature is cooperative.** We need to tweak our "survival of the fittest" approach of our man made systems of industry, politics and commerce to "flourishment of the most cooperative" if we really want to keep all fed and well. This cooperation manifests in agricultural practices as crop rotation, companion planting, healthy applications of composting, gardening, and community planting. Changing the genetic instructions of a plant to produce macronutrient levels that are suited for industrial applications or adding genetic information for the production of toxic insecticides feeds into a paradigm that nature is to be dominated and controlled *microscopically* (just because we *can*) if we are to survive. This is the paradigm that states, surviving is more important than thriving. This is the paradigm that brought us industrial agriculture. This is the paradigm that feeds our health crisis and leaves the average person disempowered as how to create health for themselves. This is the paradigm that says the science and technologies that created the toxic burden of land, air and water can be "fixed" by creating new technologies from the same science. This is the paradigm that says we are separate from our environment and our environment exists only to serve us. I say that paradigm is old and has run its course. That paradigm must shift to inclusiveness, interconnectivity and cooperation with what we learn microscopically. Genetically shifting life to serve the methods of the old paradigm of poison and control will not lead us to a prosperous, healthy future. Science that discourages genetic modification of food crops has been brought forth but is quickly squashed by fierce \$\$\$ power. Even still, one does not need to weigh scientific evidence to recognize that the current predicaments of this country are better resolved by fresh clean drinking water, more time outdoors, fresh colorful bio-diverse and organic produce. Will you please be the voice of the people and the elements that nourish and sustain them?

**It's all connected.** Humans have the same ratios of water and mass as the earth. We also share the same ratios of toxins in our waters and fluids. The health crisis faced by Americans is impending infertility, cancer, diabetes, heart disease, multiple sclerosis, Alzheimer's and those are just the big guns. The current generations of children with autism and behavior disorders are growing up and they will have children. These issues we call "disease" are the physical response to our environment. We have *created* many genetic predispositions by considering ourselves separate from our environment for generations and we foster those genetic expressions with our heritage of recipes (margarine anyone?), our lifestyles of busi-ness, stress without reprieve, and a throw-away culture loaded with toxins that off-gas from new carpet and fire-retardant furniture. We cannot create food products with "terminator genes" that reduce the plant to one life cycle and not create an effect in both the external environment and our biological ones. Each action taken and each influence ignored is connected to what happens next. It's all connected.

**The implications on the environment** are also of grave concern. There are many beneficial insects that are harmed by the plants that self-produce insecticides. While the genetic transmutations are purported to be insect specific, that claim is not based upon thorough testing of the insect species surrounding each site that grows GM crops; insect variation is exceedingly great. Also, the lives of small farmers whose fields become contaminated with GM seed are destroyed by bio-chem-agro-industries legal attacks. Persons who *do what is natural and collect and plant seeds* may unwittingly propagate for food what was meant for industrial purposes (hello corn in Mexico!).

**Famine is a trigger point issue** regarding GMOs and debating that technology as necessary for food security serves the goals of the bio-agro-chemical-industrial complex because of its emotional charge. No individual wants to be responsible for holding back the means of impoverished nations feeding themselves. Those who don't know much about GMOs and those who are on the fence can be swayed to support GMOs by that tone of debate. But GMOs are a *false promise*. The work of Vandana Shiva reveals the complex socio-economic, environmental and health issues created by GMOs in India. Her work also is focused on *resolving* the problems created by Monsanto's market (<http://www.navdanya.org/>).

The movie 'A Thousand Suns' shows a densely populated present day culture that subsists with a highly organized traditional agriculture and animal husbandry system.

Heifer International is a humanitarian organization dedicated to empowering individuals and providing them with the means to sustaining the livelihood of their families and communities.

There are a great many wisdom voices that offer solution to the issues surrounding food security in our country and in our world. I encourage you to invite those wisdom voices into the conversation of 'food security' and diminish the voices that claim GMOs could be the 'hero'. It's simply not true.

**The technology used to create GM crops may contribute to cross-kingdom gene transfer.** There is considerable evidence that horizontal gene transfer occurs through GM seeds and bacteria and other microbes in human, livestock, soil and insect. In real simple terms, the technology used to create GM seeds facilitates the trading of not-so-beneficent-genes between species; anti-bacterial resistant DNA can infiltrate bacteria in the soil, or in our gut. BT producing DNA... insecticide-producing DNA? There is an intelligence to life that is greater than its parts. *Our tinkering with the foundation of Life is creating unknown effects*. We must take time and apply caution to our learnings of genetic life, but for some reason, the bio-chem-agro industry is urging us not to wait. What are their reasons?

Jeffery Smith's work is dedicated to acquiring and disseminating the scientific information that refutes the immature and manipulative claims of bio-chem-agro-industry. Also, the beneficence of human microflora has gotten significant attention in recent years. The role of beneficial bacteria has warranted enough attention that the NIH launched the Human Microbiome Project. This project is now seeking greater understanding of bacteria

in and on the human body and its relationship to health and disease. It is a tragedy that with so little understanding of our world at the genetic level, the economic pursuits of an industry have been granted permission to infiltrate all at such an intimate level of life. A tragedy that must be halted now!

**Suspicious activity.** I am *highly* suspicious of bio-chem-agro industry's methods of dispersing their agenda. Silencing scientific opponents. Revolving door between policy maker and industrial advocates. Sneaking GM crop lifestyle into nations where it is illegal (Brazil and soy) or unwanted (Africa and humanitarian group AGRA). And finally, they belittle the rightly concerned voice of the consumer. Bio-chem-agro says "average people don't know enough and if we tell them or label it, they'll be afraid!" That statement made by industry is true yet mis-utilized. If the average person understood the modus operandi of the industry, understood the life-distorting techniques and the toxic genetic information blended into plants we are meant to eat, if they average person understood the socio-political and environmental implications of the wide spread use of genetic modification *and* the current level of operation, they *would be* afraid and likely damn angry it continues unchecked.

While I haven't directly addressed cloned animals, they too fit into my concerns and commentary. That level of manipulation is also a dastardly mistake for the same reasons. These practices follow the same principles of industrial agriculture that have poisoned our waters, created monocultures that kill genetic diversity and natural habitats, and serve only the goals of a power hungry industry that sees a means to gain great power through control of the world's food supply. It's a great deal for those companies if the entire world no longer collects and saves seeds, but has to purchase seeds, every year, for infinity (they hope)!

Genes themselves reveal a greater mystery of our existence and interconnectedness to all life and we are barely scratching the surface of conceptualizing our world in that way. Many claim that 90% of genetic coding is chatter, unceremoniously labeled "junk DNA". **It is a mistake humans have made over and over again; claiming that what we do not understand with current methods of analysis is useless or meaningless.** We've wired ourselves with a need to know coupled with an uncomfot of the unknown. Popular science fears the *mystery* of life and in doing so, hinders the evolutionary process of our species. I am neither anti-technology nor anti-corporation. I believe all our discoveries hold great potential for our future. I am pro-change, pro-discovery, pro-humanity, pro-environment, pro-living, breathing, healthy, vital, acknowledged, appreciated, balanced and flourishing

life. As Gandhi stated, science must be tempered with humanity and too, politics *must* be tempered with principle.

I urge those who have read this statement to look wholly and truthfully at what is working in relation to food/health/environment/economy and what is not working. They are not separate issues. We can and must re-direct our focus, money, energy and resources to what brings true abundance, health and vitality to all life and elements on this planet. It is not only possible, but necessary. Thank you for your time.