

**Show Transcript  
Deconstructing Dinner  
Kootenay Co-op Radio CJLY  
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**Title: A PRIMER ON PESTICIDE PROPAGANDA II – CROPLIFE EXPOSED**

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*Jon Steinman:* And welcome to Deconstructing Dinner produced at Kootenay Co-op Radio CJLY in Nelson, British Columbia. I'm Jon Steinman.

Today marks our 134<sup>th</sup> episode and part II in a series that we began in March 2008 called A Primer on Pesticide Propaganda. The series was sparked by a DVD titled A Primer on Pesticides that was given to Deconstructing Dinner in September 2007 at the CropLife Canada conference. CropLife is the trade association representing the companies who produce pesticides and/or genetically engineered seed technologies. CropLife has become a well known name here on the show following recordings and interviews *from* that conference having since made their way onto well over half a dozen episodes.

And so this long awaited part *II* of this Pesticide Propaganda series has been sparked for a pretty good reason... you see CropLife has been on an aggressive and defensive campaign ever since the Province of Ontario announced back in April 2008 that they would legislate a province-wide ban on the non-essential use of 250 pesticides. That ban came into place on April 22 of *this* year and other provinces who have *not* already banned non-essential pesticides are thinking of doing the same. One of those provinces being pressured to enact such a ban is British Columbia where the Canadian Cancer Society is putting pressure on the province to do so. The issue has become somewhat of an election one in light of the upcoming May 12<sup>th</sup> provincial election and is likely what sparked CropLife to hold a meeting with *other* pesticide industry supporters on April 23 in the City of Richmond.

And so on today's broadcast we'll explore even further than we already have just *who* CropLife is and what messages they're communicating to the public in this heated and controversial period.

**Increase Music and Fade Out**

*Lorne Hepworth audio:* "Well as you've heard a few weeks ago the government of Ontario released draft regulations to ban the use and sale of some pesticides in this province. After months and months of discussing with the government, the scientific natures of our business including the extensive pre-market safety testing we do, the benefits of our products, the rigorous job Health Canada does of assessing the safety of

our products before they will approve them and the need to have clearly articulated scientific criteria in order for there to be a workable path forward, we are, to say the least, saddened, dismayed and quite frankly, completely disgusted by what the provincial government has released for consultation. Quite simply we expect more from a sophisticated province like Ontario. Regulations to protect public health and safeguard the environment must be based on science; it is time for the government to get serious about the science, because we are all safer with science based regulations

*Jon Steinman:* That's Lorne Hepworth – the President of CropLife Canada speaking to a group of farmers in December 2008. That clip helps introduce today's broadcast and the message of "science" that Lorne and CropLife communicate to the public. Lorne Hepworth will be the focus for today's episode as it was back in September of 2007 that I interviewed Lorne shortly after his presentation at the organization's annual conference held, that year, in Saskatoon. That interview has been long awaiting its Deconstructing Dinner debut.

For those new to Deconstructing Dinner and our ongoing coverage of CropLife, the organization is based in Toronto and represents such companies as Monsanto, Bayer, Dow, DuPont and Syngenta among others. The voices of CropLife executives and those of their member companies have been heard here on the show on many occasions.

And also lending their voice to today's episode will be Richard Wiles of the Washington D.C. based Environmental Working Group (we last heard from Richard here on the show in late 2006). We'll also hear from Jahi Chappell a postdoctoral student at Cornell University in Ithaca New York and the co-author of the 2007 University of Michigan study titled Organic Agriculture and the Global Food Supply – both Richard and Jahi have been invited to respond to some of the messages communicated to me by Lorne Hepworth and CropLife Canada.

We'll also be listening to recordings from a rally that was organized on April 23 just outside the Richmond, B.C. hotel where CropLife and its supporters were meeting to strategize *how* they might be able to prevent any *future* province-wide ban on the non-essential use of pesticides.

### **soundbite**

So it's been going on for years now, municipalities from coast to coast to coast implementing bans on the use of pesticides within municipal boundaries. In order to streamline the bans that may differ among municipalities, it would appear to make sense that a province-wide regulation would be a more efficient tool to manage the increasing public concerns over their supposed safety. The Province of Quebec was the first to implement a ban and their effort as the country's first led to one of the world's largest chemical companies, Dow Agrosiences, to, on August 25, 2008, file a notice of intent to seek compensation from the Government of Canada for lost profits resulting from the ban on the 2,4-D herbicide. The claim would be brought under NAFTA's article 1105 and

article 1110. Dow is seeking \$2 million in damages and “further relief including additional damages”.

Dow is arguing that the Quebec ban was imposed without *scientific* justification and disputes the cancer risk associated with 2,4-D. Dow was required to wait at least 90 days to file its notice of arbitration, which officially initiates the claim process and results in the nomination of an arbitration panel. That period has since expired and no indication has been given as to what steps Dow may take next. The notice of intent is being watched closely by The David Suzuki Foundation, Equiterre and The University of Ottawa’s Ecojustice Environmental Law Clinic.

Prince Edward Island is yet another province who has announced an intent to ban lawn and garden pesticides starting in 2010. CropLife was of course active in trying to challenge that decision.

In New Brunswick, public consultations on the subject have been initiated.

In Alberta, weed and feed pesticide fertilizer mixtures will be banned starting in 2010 but according to the David Suzuki Foundation, Alberta is resisting a more comprehensive ban...

And then there’s British Columbia, where mayors municipal councillors from across the province passed a collective resolution asking the provincial government to implement this province-wide ban. The B.C. and Yukon branch of the Canadian Cancer Society and the David Suzuki Foundation are both joining in the effort and during an election campaign to boot, to encourage this ban to take place. The government has not responded, however the NDP and Green Party have both included a province-wide ban as part of their party platforms.

Now what’s become quite clear as the pesticide industry goes on the defence is that the message they’re choosing to communicate is, as heard in that earlier clip, one that denounces these already enacted and proposed legislations as not being based on sound science. This message is being taken so seriously that CropLife maintains a new section on their web site titled “Get Serious About the Science”.

Well, let’s do that.... let’s take CropLife Canada up on this offer, and let’s get serious about the science here on Deconstructing Dinner.

And the first topic to get... serious... about... is the one that is at the top of the public concerns... pesticide residues on food... as it applies to regulations, pesticide residues are regulated and monitored by Health Canada and their Pest Management Regulatory Agency (the PMRA). The PMRA sets what are known as maximum residue limits (MRLs) – a level measured at parts per million that are deemed to be of no recognizable danger to the food consuming public.

I brought up this issue of pesticide residues and MRLs as part of my September 2007 interview with CropLife Canada President Lorne Hepworth. According to Lorne, residues, MRLs and parts per million should be of no concern to the public.

To respond to Hepworth's comments, I also invited Richard Wiles onto the show. Richard is the Executive Director and co-founder of the Environmental Working Group – a Washington D.C. based organization whose mission is to “use the power of public information to protect public health and the environment”. Richard is a former senior staff officer at the National Academy of Sciences' Board on Agriculture and he has lent his voice to the show before.

Here first is CropLife Canada's Lorne Hepworth.

*Lorne Hepworth:* To put this one part per million in perspective, it's like you'd have to eat 20,000 apples every day for the rest of your life to get a toxic dose. So the issue that I raise there is that people associate any detection, and as we can now detect down to 1/16<sup>th</sup> billion per 1 billion of a litre, which we have heard about this morning, these nano-test tubes, people associate, and I can understand that, detecting a substance with harm. And nobody wants the harm, that's why we have the rigorous regulatory system. But as you can do a better and better job at detecting than you are, it's going to be easier. We also want to make sure we have a quality of life, whether it's controlling West Nile virus mosquitoes or safe food supplies etc, etc, etc,... So the maximum residue limit is a bit of a red-herring debate

*Richard Wiles:* Well there isn't any credible scientist in any health organization anywhere in the world who would agree that MRLs are a not important or that would agree with his characterization of the science. MRLs are set to provide a margin of safety, some comfort, between levels that cause harm in animal studies and exposure that people get when people eat food. So the characterization of the 20,000 apples to get a toxic dose is intentionally misleading, designed to belittle regulatory science that has been in existence for 50 or 60 years. No one agrees with that type of characterization of MRLs except industry scientists and industry PR hacks. It is true that the dose of a pesticide you receive in an apple won't in itself cause any acute toxic reaction and I don't think there is any environmentalist or consumer advocate that ever said that it would. What people are concerned about, is the cumulative exposure over a lifetime, or the multiple pesticides that you get in your daily diet, and more particularly they are concerned about population – sub sectors of the population that would be uniquely vulnerable, like children or infants or others who might have a susceptibility to pesticides and or other chemicals.

*Jon Steinman:* Richard Wiles of the Environmental Working Group responding to comments made by CropLife Canada's Lorne Hepworth.

Richard went on to suggest that Lorne's comments were not just inaccurate but were belittling to the public.

*Richard Wiles* : The comment on the public, I think is all too typical of the Industry's characterization of the public's ability to handle this information. The implication that the public is out there panicking about these low levels residues, is, I think, not true, and it's condescending and insulting to the average person on the street. I think the public is rational, they mostly don't come anywhere near panicking about any of this information, the misinformation that this gentleman offered, I think, is more damaging to an intelligent discussion of the matter than concerns about applications of pesticide.

*Jon Steinman*: Now Lorne Hepworth's dismissal of residues and maximum residue limits stands as an ideal example of the differing attitudes towards how industry, regulators and the public perceive danger. While industry and regulators seem only ever able to identify *immediate* threats and dangers, any *cumulative* danger is nothing that any *science* can predict.

It's for this reason that Richard Wiles and the Environmental Working Group launched what they call a Shopper's Guide To Pesticides, which outlines which foods contain the most and least amount of pesticide residues.

Here's Richard Wiles.

*Richard Wiles*: I think understanding the cumulative effect of pesticides in the diet is really beyond scientific capacity at this point. It's just really beyond the understanding we have of the interaction of these chemicals to really know what the combined impact is. That doesn't mean that it's horrifically awful, it's just means it's an uncertainty and that given a choice, people like to minimize uncertainties, particularly when you're dealing with chemicals that are, after all, designed to be toxic, are designed to kill bugs and diseases, so even if they are present in food at relatively small amounts, a lot of people would like to know which foods have the least and which foods have the most, whether they should buy organic pretty much all the time and where if they can't afford organic or if it's not available, which fruits and vegetables consistently have fewer or lower levels of pesticides on them. So it's really a choice issue that recognises that there is a lot of uncertainty in the science. We just don't know what these combinations of chemicals will do. That's doesn't mean that they are all going to kill us tomorrow but it means that scientists can't really say that it wouldn't be dangerous for some percentage of the population, some vulnerable 1 or 2 year olds, so why not reduce your exposure if you can do it, and so that's really what the motivation behind our lists are, just to give people choice. It's based on the recognition that the scientists are uncertain that these chemicals are inherently dangerous and that it's probably a good idea to minimize your exposure when you can.

*Jon Steinman*: Now it's this very uncertainty that the public has towards pesticides that of course drives so much of the latest opposition to their presence and use today. And so it remains unclear as to *why* the pesticide industry would continue to insist that the public trust the science, as heard here...

*Lorne Hepworth audio*: Stand up for science

*Jon Steinman:* ...says Lorne Hepworth, even though recent history has repeatedly demonstrated that products *once* deemed safe, were later deemed too dangerous and pulled off of the shelves and off of the market.

I posed this very question to CropLife's Lorne Hepworth.

*Jon Steinman audio:* When we look at some of the environmental concerns around pesticides we've brought a few people onto the show who have looked back on the history of regulatory frameworks in Canada when it comes to pesticides and we've seen here over the past 30, 40, 50 years many pesticides that were used within the agricultural system that have been now pulled off the shelves and are no longer allowed to be used, now this differs among countries. You spoke very strongly about using science as sort of the tool to further the agenda of agriculture. How can Canadians be assured that these sorts of issues are not going to keep popping up, that science will then prove that certain agricultural chemicals being used today are not as harmful as the ones that have been pulled off of the shelf?

*Lorne Hpeworth:* First of all, you've got to remember why the majority of those were pulled off of the shelf. Not because they somehow caused a problem, but because newer and better molecules came along. It's like a car company; they don't keep selling the Studebaker when you got a new Lexus. Ok, the new products come along, and the farmers don't even want the old ones. After a while, the company says it doesn't make sense to produce the old technology, they want the newer, better technology. Now are there instances, occasionally, where once it's been registered, just like pharmaceuticals, where you get unintended side effects, or something didn't show up in the testing? We, like any other citizens, and like the regulators, if that's proven to be a problem from a scientific standpoint, we'd be the first to want to pull the product off the market, and certainly the regulators would. There have been very rare instances of that -I mean the one that everyone would point to is DDT, and that wasn't necessarily... I mean there's a fair bit of debate around that one and it's still widely used in the world to control Malaria – I'd be a little careful about drawing conclusions about what products went off the marketplace and why

*Jon Steinman:* And here's the Environmental Working Group's Richard Wiles responding to Lorne Hepworth's comments.

*Richard Wiles:* Well it's not exactly true that the only reason all their chemicals have been replaced is because newer models came onto the market. Certainly that does happen, but I think that regulatory actions, bans, prohibitions, restrictions on chemicals have been at least as important in driving innovation in the chemical industry, pesticide industry as has the desire to just have a better product. Because in reality companies make a lot more money of old commodity based pesticides that have been on the market for 20 years and the costs are already amortised and they're just making money every year on the chemical, that's the ideal situation for a company. The problem is a lot of these chemicals came onto the market before comprehensive testing was required and

they turned out to be fairly dangerous. Anyhow, it's also not true that DDT is the chemical only ever banned; I mean that's sort of silly. There have been plenty of chemicals, particularly, at least in the USA that were taken off the market as the result of a major reformed pesticide law in the mid-90s that required explicitly that infants and children be protected from chemical residues in food and from all routes of exposure. If you're going to be allowed to use the chemical on food, all sources of exposure have to be considered so entire classes of insecticides suffered major restrictions, the organophosphate insecticides – huge restrictions all across the board there and several chemicals came off the market completely. A number of different fungicides, and there was a major herbicide here in the USA, called Cyanazine and it was used on maybe 40 million acres of corn that was withdrawn by the manufacturer when it faced the prospect of having to prove it was safe for children when it ended up in drinking water. So regulation has forced a lot of innovation in the pesticide industry, and that's a good thing, chemicals tend to be more specific, and less broadly toxic, than they used to be. The pesticide industry's position basically is that every single pesticide out there is perfectly safe, and you know they are routinely proven wrong on that position. And they're not particularly responsive to data that show these hazards. I mean for all the chemicals that I named, save a few where they knew that to try and demonstrate safety was just going to be impossible, they waged significant and very expensive battles to keep these highly hazardous pesticides on the market as long as they possibly can because they make a lot of money on these chemicals, where they have made back the R&D costs and every year that they can keep those chemicals on the market, they're going to make another multiple 10s of millions of \$ off of them and we've seen this down here, where Atrazine was the number one weed killer in the country in agriculture, now it's number 2 behind Roundup, which is used in all the GM corn, but it's still applied to 50 million acres a year. There are major toxicity concerns with this chemical. It ends up in the drinking water for about 25 million people every year. Communities spend 40/50 million dollars a year on carbon to reduce the levels of this chemical to levels that are safer, and the industry has spent 10s of millions of dollars on scientists and lobbyists to keep these chemicals on the market. Not because it's safe, but because they can win those fights, they can manipulate the regulatory process with science and media, and campaign contributions and back-door meetings, and you name it!

*Dr. Samuel Epstein (extract from the Corporation movie):* If you wanted to go to a chemist and said look, I want to have a chemical, say a pesticide, which will persist throughout the food chain, and I don't want to have it to renew very very often, I'd like it to be fairly non-destructible, and then he'd put 2 benzene molecules on a blackboard, and add a chlorine here and a chlorine there. That was DDT.

*(Voice over for short movie clip) "When the army needed Jap civilians to help them out in our occupation, they called on the native doctors to administer DDT, under the supervision of our men to stem a potential typhus epidemic. Dusting like this goes a long way in checking disease and the laugh's on them. Pardon our dust..."*

*Dr. Samuel Epstein:* As the petrochemical era grew and grew, warning signs emerged that some of these chemicals could pose hazards. The data initially were trivial,

anecdotal, but gradually a body of data started accumulating, to the extent that we now know that the synthetic chemicals which have permeated our workplace, our consumer products, our air, our water, produce cancer, and also birth defects and some other toxic effects. Furthermore, industry has known about this, at least most industries have known about this, and have attempted to trivialise these risks. If I take a gun and shoot you, that's criminal. If I expose you to some chemicals which knowingly are going to kill you, what difference is there? The difference is that it takes longer to kill you. We are now in the midst of a major cancer epidemic and I have no doubt, and I have documented the basis for this, that industry is largely responsible for this overwhelming epidemic of cancer, in which 1 in every 2 men get cancer in their lifetimes, and 1 in 3 women get cancer in their lifetimes.

*Jon Steinman:* This is Deconstructing Dinner and part II of our series titled A Primer on Pesticide Propaganda. Part I of the series is archived on our web site at [deconstructingdinner.ca](http://deconstructingdinner.ca).

That last clip was from the well known Canadian documentary "The Corporation". You heard Dr. Samuel Epstein speaking. Epstein is a Professor emeritus in Occupational & Environmental Medicine at the University of Illinois. Before him was a clip from my conversation with the Environmental Working Group's Richard Wiles as he responded to the comments made by CropLife Canada's President Lorne Hepworth. I interviewed Lorne in September 2007.

Today's broadcast is focusing on a number of remarks made throughout my brief interview with Lorne Hepworth when I attended CropLife's annual conference in Saskatoon. That interview has been quietly sitting in our archives awaiting an opportune time when Lorne's comments could be examined. What sparked Deconstructing Dinner to finally air this interview has been the wave of support across the country for province-wide bans on the non-essential or cosmetic use of pesticides (lawn care, home gardens, and most municipal uses are the targets of the bans.) Quebec was the first to implement a ban followed by Ontario whose ban came into effect on April 22, 2009. British Columbia is now being pressured by The Canadian Cancer Society, the David Suzuki Foundation, and municipalities throughout the province to do the same. On April 23<sup>rd</sup>, CropLife Canada (the trade association representing the pesticide industry) hosted a meeting in the City of Richmond to strategize with their supporters as to *how* to prevent any ban from being implemented. Later on the show, we'll listen in on clips from a rally of concerned groups and citizens that took place just outside the Richmond hotel where CropLife's Lorne Hepworth was meeting with industry colleagues. So stay tuned for that.

Now of course another message communicated by the industry as we've heard throughout the show, is how newer pesticides are better and safer to use and while in some cases that may indeed be true, the Environmental Working Group's Richard Wiles cautions that increased attention might instead be necessary.

Here again is Richard Wiles

*Richard Wiles:* They do make some new chemicals, but there are some serious issues with some of the newer chemistry as well, probably the most recent major screw-up by the pesticide industry is going to end up being the insecticides that are increasingly implicated in the decline in the bee population. The science is getting clearer and clearer that a significant portion of that reduction in the pollinator population is due to pesticides that are *extremely* toxic to bees at levels in the parts per trillion levels. So this is a direct rebuttal of the earlier argument that you have to drink Lake Erie to get a toxic dose. I mean this is parts per trillion levels in the environment that are so small you can hardly even find it, and can wipe out bee populations and these are chemicals of the newer and safer variety so these chemicals are designed to kill, that's the whole point, they're supposed to kill pests, I mean that's not necessarily a bad thing but you have to bear that in mind that they need to be very carefully studied, they need to be very carefully managed, they need to always assume that you don't know everything, that you have to be open to new evidence that chemicals might be dangerous and always try to use as little of those pesticides as you possible can

*Jon Steinman:* That was Richard Wiles, the Executive Director and co-founder of the Environmental Working Group – a Washington D.C. based organization whose mission is to “use the power of public information to protect public health and the environment”. Richard is a former senior staff officer at the National Academy of Sciences' Board on Agriculture. A link to the organization's Shoppers Guide to Pesticides, as referenced earlier, will be available on the Deconstructing Dinner web site at [deconstructingdinner.ca](http://deconstructingdinner.ca) and posted under the April 30, 2009 episode.

### **soundbite**

*Jon Steinman:* Now before we continue examining remarks made by CropLife Canada's President Lorne Hepworth... let's first revisit one of the organization's member companies – Syngenta. It was after all Syngenta's DVD that was handed to me at the CropLife Canada conference that was titled A Primer on Pesticides – that sparked this ongoing series, here on Deconstructing Dinner, titled A Primer on Pesticide Propaganda.

Syngenta is one of the world's largest producers of seeds, agricultural chemicals and biotechnology. They're based in Switzerland and their Canadian operations are headquartered at the University of Guelph (which should come as no surprise if you caught our recent episode about the University). Now I do want to just take a moment here to update you on the company's actions... and more specifically, their marketing campaigns being waged here in Canada that are targeting Canadian farmers. As a weekly subscriber of Canada's largest agricultural periodical The Western Producer, I've been the recipient of some of their aggressive and no doubt expensive marketing campaign, their recent one. The product being advertised is called Broadband – a herbicide designed to control grass and broadleaf weeds that threaten monocultures of spring wheat and barley. And the campaign began in late 2008 upon which 68,000 Canadians, subscribers to the Western Producer, and mostly farmers, would have opened their copy of the Western Producer to find a roughly 8.5" by 8.5" thick square piece of paper with the title Broadband Instruction Guide – the advertisement came across as a manual for using

broadband internet access – a technology only now being *slowly* made available in rural Canada. But here's the shocking part... this 8.5"x8.5" ad needed to be unfolded and once unfolded the size of the paper comes out to 3x that size – that's 25.5" x 25.5"... and the contents???? blank.... the entire poster-sized ad was blank except for what read "Step 1... Apply"... assumingly a signal to the reader of just how easy the product is to use. Now it would be one thing to recognize this as being one of the most brazen examples of paper wastage every seen as part of a marketing campaign... but to ad insult to injury... located at the bottom of the blank poster is the FSC logo... that's the logo signalling that the paper used came from Forest Stewardship Council certified trees. Clearly, Syngenta's environmental ethics are a little schizophrenic to say the least... but of course, Syngenta's trade association CropLife Canada continues to insist that the industry is "environmentally friendly"...

*Lorne Hepworth audio:* I want to continue on with the environmental theme, our industry takes its responsibility to the environment. We put stewardship of the environment in minimizing any risk to the environment from our technologies as a first order of priority, but more than that, our industry's technologies are, and in the future will increasingly bring solutions to some of the world's greatest environmental challenges.

*Jon Steinman:* One might ask that if an industry can't even make an *attempt*... to be environmentally responsible with their *marketing* campaigns, why *would* the public give their complicated chemicals and biotechnologies... any less scrutiny...?

Well, that somewhat forms the basis for another line of questioning that I introduced to CropLife's Lorne Hepworth... the environmental impacts of conventional vs. organic methods...

*Lorne Hepworth response to Jon Steinman question:* Is it more environmentally sustainable to try and feed the world organically or through modern technology? And the data I see it, is you would have to bulldoze down acres & acres, the size of countries to grow enough produce to feed the people of the world, if you're going to do it simply by organic production

*Jon Steinman:* Perhaps the best people to contact to *respond* to such a suggestion are the authors of a study out of the University of Michigan published in June 2007 entitled Organic Agriculture and the Global Food Supply. After being published in the journal Renewable Agriculture and Food Systems, it received quite a lot of attention as it was one of *the* most comprehensive paper's to date comparing the *yields* of conventional and organic methods of agriculture.

One of those authors was Jahi Chappell who responds to Lorne Hepworth's comments.

*Jahi Chappell:* Really I feel like that's very far out of step with scientific knowledge, if you actually look at the research from a number of different directions. So I mean, for one thing, the conclusion of our study was basically the opposite, that for one thing in terms of just raw yield, organic agriculture, from the evidence we have today, there

seems to be little question that it could provide enough food. As I said before from the bulk of the research you can find from the literature, and to some degree in practice, there is a slight decrease in average yields in the developed world (in the Global North) but there seems to be an average of maybe a 5% to 10% reduction max, and in the developing world, in the Global South, you end up seeing, as much as a doubling, sometimes even more than that, of yields, which strikes some people as fantastically implausible, but that the reason for it is a lot of the agriculture of the Global South is not intensified conventionally or organically. They're still using low input methods, subsistence methods, which basically our conclusion is, you certainly could increase yields, and in many of these cases, with perhaps a conventional package, but that would be pretty resource and financially intensive whereas with certain organic methods, you would use a lot less resources and you also could see a dramatic increase in yield. And to us the basic question isn't which one produces actually more at the end of the day? The question is can we feed people, and make enough food? And so really we're talking about a sufficiency argument. And it looks like there's almost no question as far as the present research and understanding goes that we could provide sufficient food for today's population, and the growing population of the future

*Jon Steinman:* When the paper was being researched, Jahi Chappell was a PhD student in ecology, specializing in the intersection of conservation and food issues. His interest lay in analyzing how conservation policy could effectively be advanced to prevent the rapid loss of biodiversity, which Jahi indicates is, today, similar to the extinction rate that wiped out the dinosaurs. Jahi is now engaged in post doctoral studies at Cornell University in Ithaca, New York.

Jahi spoke to us over the phone and he outlines the team of people that he worked with on the University of Michigan organic agriculture and the global food supply study.

*Jahi Chappell:* This paper came about with a group of us at the University of Michigan, involving a group called NEWAG, which stands for the New World Agriculture and Ecology Group, which is actually right now sort of a loose international affiliation of people, who work on ecology, human development, socio-economic development and equity issues. So one of my mentors Ivette Perfecto at the University of Michigan has worked on sustainable agriculture for years, especially in coffee ecosystems, she was one of the people who spearheaded the effort along with Catherine Badgeley, who is the first author. She has dual interests in paleoecology, which is her primary academic work, but she's also done a lot of teaching research in sustainable agriculture, and she herself actually owns a farm with her husband. And so, she had been teaching a class with Ivette on this issue for years, actually looking at different farms in Michigan, looking at different scales, sizes and types, from Amish farms, organic farms, to larger conventional farms, and headed up this class by going to Cuba in 2004, I believe, looking at sustainable systems there and some of the students from Ivette and Catherine's class were very interested in this topic as well. So as a group, including myself, Ivette & Catherine, two undergraduate students from their classes Emily Zakem and Eileen Quintero who had gone to Cuba, same time as I did with the class, and then some other graduate students of Ivette, Andrew Salumon and Katia Aviles-Vasquez, who were

getting their Masters degree in Natural Resources and all of us have these similar interests in combining equity and food security

*Jon Steinman:* A copy of this paper has been posted on the Deconstructing Dinner web site including a more digestible synopsis for those not agriculturally inclined... but Jahi does provide some startling numbers that came out of their research.... for one, what did the research predict would happen if the entire world was to switch to organic methods.

*Jahi Chappell:* If you switch to all organic under the most conservative assumptions possible meaning that you actually had a slight decrease in production of agriculture on the world, which we don't think is realistic, you still end up with 2600 calories per person per day available and that's still more than is recommended basically for a full and healthy diet, and if you look at what we think is more realistic by developing in the Global South modern organic methods, you could increase the production globally to probably over 4000 calories per person per day, which means essentially, rather than eating that much that we could provide enough food, even with the larger population expected about 100 years from now.

*Jon Steinman:* As has been discussed previously on Deconstructing Dinner, comparing just raw yields of agricultural systems ignores some of the fundamental reasons why so many people in the world are malnourished and hungry. The University of Michigan study also explored the calories between systems and their findings were also quite telling.

*Jahi Chappell:* I guess one of the things I haven't even mentioned yet, in response to that clip you played, is that if you look at it right now, we're already producing enough food on a caloric global basis. Right now there are approximately 2800 calories per person per day available in the world. And despite this, we have 1 billion people suffering from hunger, from acute malnutrition. If you look at the people who are suffering from micronutrient deficiency that's probably around 2 billion people, so even though we have enough food on a caloric basis right now, we have between 15% and 30% of the world which still aren't getting adequate access to food. So that's one of the first points that it doesn't even seem to be a matter of raw yield right now, and if you look at the research by Economist Mark Eusen (sp?), even famines seem to be rarely from a lack of food but rather from the ability to get access to food

*Jon Steinman:* ...Jahi Chappell...

As mentioned earlier, the University of Michigan study was published in June of 2007 only months before I joined the pesticide and biotechnology industry at the annual CropLife Canada conference. The conference seemed like an ideal place to introduce the results of the study and indeed I did, during my conversation with CropLife's Lorne Hepworth. Lorne's comments are followed by a response from the study's co-author Jahi Chappell

*Jon Steinman audio:* One study that just came out of the University of Michigan and the school of Natural Resources and the Environment. They actually did some studies on whether organic agriculture can produce equal or greater yields and their study concluded that indeed it can. Now it looked more at North America saying that it is about equal...

*Lorne Hepworth (interrupting):* Can I give you a quick answer on that one?

*Jon Steinman:* Yeah, sure

*Lorne Hepworth:* One of our speakers today Paul Sumner said that it needed a lot to review, and they went to their expert scientific panel, and they said what you needed to do was a critical review of the literature, that's what you need to, is a critical review of that literature, because what I have seen is that their methodology was highly suspect from a scientific standpoint...

*Jon Steinman:* Are you familiar with the study, because I haven't done that research

*Lorne Hepworth:* Well, I haven't read the study but I saw some of the commentary afterwards

*JS:* right

*Lorne Hepworth:* So I can't comment, but what I have seen on the commentaries, I can tell you, by far and away, the conventional wisdom, the weight of scientific evidence suggest that in the far vast majority of instances, it's rare to find an organic system that will match yield and quality with conventional

*Jahi Chappell:* He's confusing two different things, he says the conventional wisdom and the weight of the evidence. Conventional wisdom certainly is that you can't provide sufficient food with organic agriculture but what we did, as I said, was review the literature to try and find what the actual evidence said. So when you do that and look at the weight of the evidence out there it does seem to say the conventional wisdom is wrong, which is what happens sometimes, conventional wisdom becomes a thing sort of in and of itself, living by itself, outside of the actual evidence. And the evidence moves on the ground, and so I would say that that was just not a correct assessment of the current evidence. So he said what needs to be done is a critical review of the literature, what I think he's implying there is that instead of just looking at literature in general one needs to assess individual studies and go through and figure out perhaps this one isn't as good as that one and this one's evidence is better than that one, which, as a scientist, you can never argue against taking a closer look at something, but all of our evidence was from what's called peer reviewed literature, with a small exception, which means that scientists already have reviewed it prior to it being published in the first place. So it's already passed muster from a variety of experts, which is to say that this is a publishable article, this is something that we think the evidence is secure enough. There was a small minority of our evidence taken from what's called grey literature, which is published by the Rodale Institute and a couple of other non-profits. There are 2 points with that, for

one thing, these are highly competent, highly respected organisations where the data came from. They just didn't publish it in, what's called a peer reviewed journal where scientists who were not involved in that project, also examined the evidence independently. The type of data that falls into that classification is also data by the FAO, by the US government. So grey literature is not considered the scientific gold standard but it doesn't mean it's not reliable automatically. The other thing is that we did our study, we reanalyzed the study omitting that information from the grey literature, and our results were the same statistically

*Jon Steinman:* ...Jahi Chappell...

This is Deconstructing Dinner, a weekly one-hour radio show and Podcast produced at Kootenay Co-op Radio CJLY in Nelson, British Columbia, I'm Jon Steinman. You're listening to part II of A Primer on Pesticide Propaganda – a series first launched in March 2008 and sparked by an informational DVD that was provided to Deconstructing Dinner by seed and chemical giant Syngenta titled A Primer on Pesticides.

It was on the same day when we received the DVD that I interviewed the President of Syngenta's trade association – Lorne Hepworth of CropLife Canada.

Now Lorne very quickly cut off my question as you heard in order to provide his response that outright dismissed The University of Michigan study. In that response he indicated he had *not* seen the study but had read commentaries on it. So we, of course sought out these commentaries published after their paper came out and we came across only one. Sure enough, Jahi confirmed that the one we came across was almost certainly the one Lorne Hepworth was referring to.

The commentary was published by Alex Avery – the Director of Research and Education with the Center for Global Food Issues based in Churchville Virginia.

Both Alex and his father Dennis Avery are well known critics of organic agriculture and food with Dennis having authored a book titled “How to Save the World with Pesticides and Plastics”... but cutting right to the chase... the Center for Global Food Issues is an industry front group and part of the Hudson Institute who receives financial backing by agricultural giants like Archer Daniels Midland, Cargill, ConAgra Foods, DowElanco, DuPont, McDonald's, Monsanto, Syngenta and.... CropLife...

While it would seem responsible for the media to not give Alex's comments the light of day, the same journal that published the University of Michigan study chose to publish his comments alongside other responses from both the study's authors and another researcher implicated in Alex Avery's comments.

Here's Jahi Chappell

*Jahi Chappell:* The short response to his commentary is that in several spots, he simply was misunderstanding what we wrote, in some other areas, he said for example with

double count data, which is simply incorrect, because although some data sets had the same author, from different papers published on the same data sets, we made sure that we went and eliminated from our database any overlap so we went back and re-examined all the data afterwards to pull out things that would have been double-counted, and that was another one of the primary critiques. Really it seems like, to give the short summary, that he seemed to be misreading the original studies and sometimes misreading our study as well, and if you look at the actual examples the problems he raises are not actually present

*Jon Steinman:* that was Jahi Chappell, co-author of “Organic Agriculture and the global food supply”; A University of Michigan study published in June 2007 in the journal “Renewable agriculture and food systems”. Jahi is now engaged in post doctoral studies at Cornell University, in Ithaca NY.

And a link to Alex Avery’s commentary is linked to from the April 30, 2009 episode posted on our web site at [deconstructingdinner.ca](http://deconstructingdinner.ca) including copies of the responses to Avery’s remarks.

One of those responses came from the now-retired Bill Liebhardt – the former director of the Sustainable Agriculture Research and Education Program at the University of California at Davis. Liebhardt’s research was used as part of the University of Michigan study and his work was criticized in Alex Avery’s commentary. His response to Avery begins like this... “My research was initiated because I attended a 2000 meeting in PA where Dennis Avery (father of Alex) was debating GMOs. Dennis Avery made claims in that talk about the yield differential of conventional and organic crops and then went on to say how that yield differential would affect land use. Dennis Avery stated that organic yields were only 55–60% of conventional yields and that 18–20 million acres of wildlife habitat would have to be farmed if high input agriculture were farmed organically.”

Sound familiar?

*Lorne Hepworth audio:* And the data I see, is that you would have to bulldoze down acres and acres, the size of countries to grow enough produce to feed the people of the world, if you’re going to do it simply by organic production

*Jon Steinman:* Bill Liebhardt’s remarks about the Averies and their Center for Global Food Issues continues, “As I listened to Dennis Avery’s talk, I wondered where he got his data or information. I knew of farming systems comparisons around the country and the yield differences were not like that. As soon as his talk was over, I was the first to ask a question and it was this. What is the source of your information showing that organic yields were only 55–60% of conventional? He did not want to answer the question. However, the moderator was a journalist from a Philadelphia paper and he said it was a legitimate question and it should be answered. So Avery said he was told that organic wheat in England yielded only 55–60% of conventional. So that was his source. I thought this person is going around the country using one data point to suggest how the world should feed itself. I thought that the question of how we feed ourselves is an important

one but one that it should be based on more information than that.” Again Bill Liebhardt’s full response is linked to from the Deconstructing Dinner web site.

And again, Dennis and Alex Avery are seemingly a pretty significant source of information for CropLife Canada... perhaps the most vocal group advocating for the agricultural chemicals and seeds in this country. It would likely come as a shock to know that even today, municipalities, provinces and Canada’s federal government provides ample space to CropLife to express their opinions on matters of human and environmental health. Perhaps even more shocking is the amount of space CropLife and groups like the Center for Global Food Studies receive in North American media. When Alex Avery was interviewed saying that “buying organic food could kill you” on the well known television show 20/20, reporter John Stossel made *no* mention that Avery was funded by the pesticide industry.

Well, regardless of the continued attention these companies and organizations receive, there was a small group of British Columbians who seem to be well aware of the tactics used by CropLife Canada and gave them a less than welcome welcome... when they arrived in the City of Richmond on April 23. Lorne Hepworth was among those in attendance to host a meeting among other industry supporters to discuss *how* the industry should respond to a looming province-wide ban on non-essential uses of pesticides.

At the rally was David Maidman of Pumpkinhead Productions who filmed the vocal and peaceful group of protestors outside of the Richmond hotel. The first voice heard is that of Arzeena Hamir – the coordinator for the Richmond Food Security Society.

*Protestor 1:* We’re first of all celebrating the fact that Richmond City Council agreed to start looking at a by-law to ban cosmetic pesticides and we’re also here to greet a group called CropLife Canada, that wants to try and block a provincial pesticide ban so we’re here to show them that exactly what we’re looking for in B.C., we need stop the sale of chemicals and pesticides and give them a greet.

*(singing in the background and street noises)*

*Protestor 2:* Hi, my name’s Ben West from the Western Canada Wilderness Committee, and we’re here today because a group called CropLife, that’s a lobbyist for the chemical industry has tried to look at ways to stop a cosmetic pesticide ban from happening here in B.C., like it just happened in Ontario. They’re saying that groups like the Canadian Cancer Association are spreading mistruths, and I guess that leaves us with a question: Who do you want to believe? Do you want to believe the lobbyist for the chemical industry or do you want to believe the Canadian Cancer Society?

*Protestor 3:* Hi, Harold Steeves – a farmer in Richmond, and we don’t deliberately grow dandelions, but we don’t go around nuking them either, let’s put it that way. The dandelion is a flower, a buttercup, it’s beautiful, and dandelions make good eating. We have them growing in our alfalfa field and we did a study on them some years ago, and found that actually the dandelion is more nutritious than the alfalfa

*Jon Steinman:* The video version of that audio is linked to from the Deconstructing Dinner web site at [deconstructingdinner.ca](http://deconstructingdinner.ca) and posted under the April 30 2009 episode.

Thanks to Pumpkinhead Productions for their work recording that April 23 rally in Richmond BC.

As the May 12 provincial election in B.C. approaches, it should be noted that both the NDP and Green Party *have* incorporated a province-wide cosmetic pesticide ban into their party platforms while the BC Liberals have yet to even respond to the requests from the Canadian Cancer Society to legislate the ban.

To take us to the end of today's part II of our Primer on Pesticide Propaganda series, we've prepared a collage of some previously heard and unheard audio that helps capture the tone of today's broadcast...A thx to Jahi Chappell, Richard Wiles, Lorne Hepworth, Pumpkinhead Productions, Devon Wong, and the voices of those who shared their thoughts at the April 23 rally in Richmond. And also thanks to New York musician Terry Winchell and her Pesticide song...

*Terry Winchell singing:* Pesticides pesticides have screwed up my insides, what am I gonna do? In 1962 Rachael Carson warned about the Silent Spring All this time we haven't learned a thing

*Voice introducing:* Ladies and gentleman, please welcome Dr Lorne Hepworth (clapping)

*(In the background, Terry Winchell singing:* ... Oh Farmer Dan told me one day that the stuff he sprayed would always stay, It kills the bugs on his potat-ers, it kills a lot more than that years later

*Lorne hepworth:* I still have a small farm in Southern Saskatchewan, in the middle of the bottom of the Palliser Triangle, and I have a confession to make to all my members in the room, apparently my grand-father was an organic farmer. He really didn't have any choice, there really weren't any tools then, and I am not so sure that Greenpeace would acknowledge my early roots in that organic farming venture."

*Terry Winchell:* (All this time we haven't learned a thing!)

*Richard Wiles:* CropLife, where do they sit in the whole milieu of big bad industry trade groups? They've done what a lot of trade groups do so well, they've probably done it more than most! They change their name so many times, it's hard to figure out who they are. Almost like the companies they represent, that change their name it seems like every couple of years just to keep you off guard.

*Terry Winchell:* "So put on your rose tinted glasses look at your garden it's a pretty sight

One squirt of a pesticide to kill those weeds  
you do it cuz it's easy not cuz' it's right.  
Oh Pesticides , Pesticides

*Lorrie Hepworth:* Stand-up for science!

*Protestor:* They blow science in your face, but they're not scientists, they're advocates. What advocates do is exactly what we're doing, they're grabbing hold of anything and they'll throw it in your face in the hope that you believe it. So, whenever they use the word "Science", it's being used probably in a pretty flimsy and inaccurate way.

*Richard Wiles:* And I think that the new chemistry has gotten almost beyond the ability of regulators and scientists, to truly understand the implications of human exposure. These are chemicals that work in very novel ways and maybe toxic to insects in a way that would apparently have no effect on humans because of the differing anatomy for example, but in fact may have an impact on people that needs to be evaluated

*Terry Winchell:* Farmer Dan told me one day  
that the stuff he sprayed would always stay  
It kills the bugs on his potatoes  
it kills alot more then that years later  
Gravity pulls all things down  
and everyone's got a drinking well in town  
When it rains it pours it soaks into the ground

*Voice in the audience at the Croplife conference:* Thank you very much. It's Marian Stypa with Syngenta, I'd just like to pursue some of the questions that we had discussed a little bit earlier about the perception of the industry and about the messaging and what's going on out there. You know, it's somewhat alarming for us in the industry to wake up in the morning and to read the headline and that a significant leadership party is thinking about a new policy of outlawing the use of pesticides. I think we have to take that seriously, we have to look at it as a threat

*Jahi Chappel:* Alex Avery and his father, Dennis Avery are very established critics of organic agriculture. They really made some wild claims, they've said that organic agriculture is a liberal fetish, and that basically we don't care about the welfare of people because they're going to starve under organic methods. I can't find the exact quote, but I think Alex Avery compared organic advocates to terrorists. This is really over the top rhetoric from them sometimes

*Lorrie Hepworth:* What I have seen is, their methodology was highly suspect from a scientific standpoint...

*Jon Steinman:* Are you familiar with the study, because I haven't done that research

*Lorne Hepworth:* Well, I haven't read the study but I have read some of the commentaries afterwards

*Terry Winchell:* All this time we haven't learnt a thing

*(Advert voice over- Female)* You've talked about benefits for the farmer, but are there really any benefits to consumers and society?

*(Advert voice over Male)* There are many benefits for consumers and society from the use of pesticides. First the use of pesticides minimizes the land base needed for agricultural production, because we are able to produce more food on less land, we're able to feed an ever increasing population without severely encroaching on forest and natural areas, leaving more land for conservation and recreational use.

*Jahi Chappell:* Really I feel that is very far out of step with scientific knowledge, if you actually look at the research from a number of different directions. Diverse organic systems are really where it's at, and looking at systems that move away from what we call an input substitution model, where you're just basically changing industrial inputs for organic inputs, instead of a large monoculture you're maybe just spraying an organically acceptable pesticide on now. Really looking at diverse cropping and rotational systems, like what Rodale works on and other institutes is really the direction to go and organic monocropping has really become a problem and will continue to become a problem if we don't really move from that sort of industrial monocrop system model

*Lorne Hepworth:* If you believe like us, in science, not public opinion polls, Science, not anecdotes, should be the corner stone, join us and make your voice heard. Because the day we allow governments to develop public policy based on which way the wind is blowing, is a sad day indeed

*Jon Steinman:* CropLife Canada's Lorne Hepworth expressing his contempt for democracy.

This has been part II of Deconstructing Dinner's Primer on Pesticide Propaganda series. We'll be posting a wealth of resources on our web site that all tie in to the topic of today's show. Some of those resources will include unheard audio segments from my interview with Jahi Chappell. Also on our site will be a link to a video by University of British Columbia student Devon Wong who recorded an interview with Lorne Hepworth on April 23 in Richmond BC on the same day of the rally we heard segments from earlier. Again, today's broadcast has been archived under the April 30, 2009 episode at [deconstructingdinner.ca](http://deconstructingdinner.ca)

## **Ending Theme**

*That was this week's edition of Deconstructing Dinner, produced and recorded at Nelson, British Columbia's Kootenay Co-op Radio. I've been your host Jon Steinman. I thank my technical assistant John Ryan.*

*The theme music for Deconstructing Dinner is courtesy of Nelson-area resident Adham Shaikh.*

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