

Maryland Pesticide Information and Reporting Workgroup
House Environmental Matters Committee
Monday, August 12, 2013
DRAFT MINUTES

Workgroup Members Attending -- The Honorable Steve Lafferty (co-chair), The Honorable Roger Manno (co-chair), Ruth Berlin, Dr. William Bowerman, Andy Fellows, Sherm Garrison, Carol Holko, The Honorable J.B. Jennings, Dr. Rick Kutz, Dr. Judy LaKind, Dr. Clifford Mitchell, Dr. Jed Miller, Doug Myers, The Honorable Charles Otto, Dr. Ron Ritter, Brian Schoonmaker, Julie Spagnoli, Dr. Andrea Kidd Taylor, Steve Weber.

Workgroup Members Absent – The Honorable Joe Bartenfelder

Delegate Lafferty asked for the members to approve the minutes and stated that microphones would be used. He asked that the group reintroduce themselves since some of the members had been absent at the last meeting and said that we want to get as robust a conversation as possible. Today we have speakers from the environmental/Bay perspective and the public health side. We would also like to thank Dr. LaKind for her presentation. If anyone has any information or data to send out, please provide to Ms Kille so the information can be distributed. He asked if there were additional comments or questions from workgroup members. There were none.

Dr. Ian Hartwell

Dr. Ian Hartwell works at NOAA but is speaking today as a private citizen. He was part of the Toxic Contaminants Research Center at the Department of Natural Resources. He has also worked at The Johns Hopkins Chesapeake Bay Institute. MDA has done some work and USGS has done some work and there have been regional studies done. If we had more information we could get temporal trends. There are population fluctuations and risk assessment issues. The existing data is fragmented. There needs to be comprehensive risk assessment and monitoring of specific chemicals. We need to look at pesticide impacts on water bodies. What is coming upstream? Delegate Lafferty asked if the data from the 2011 NASS study is sufficient. Dr. Hartwell said that it is useful information but the problem is that it is voluntary. Some years you might get a 38% response and others a 75% response. If a report is done on an annual basis then you can look at use trends. If MDA does pesticide usage surveys on a three year cycle it would take nine years to establish a trend.

Senator Manno asked about federal watershed surveys. What kind of information do these contain? Dr. Hartwell said they are monitoring surveys – sampling stations, surface and groundwater. They look at a variety of pesticides but he was not sure if it is comprehensive. It is site specific and doesn't tell the whole picture. There are also surveys by state every three years. Mr. Garrison said that USGS does monitoring studies in the Potomac and Susquehanna. These are not statutory. This program is done out of headquarters by USGS and is a separate line item in their budget. Dr. Kutz mentioned the National Water Quality Assessment Program (NAWQA) as well. These are not a pesticide use reporting system but we should spend a meeting on monitoring. Dr. Hartwell said the monitoring programs were aligned with pesticide use reporting systems. Dr. Kutz said that in California the reporting system compliments

monitoring. Ms. Holko mentioned the NASS survey. MDA used to receive funding from the federal government and now it is funded by the State Chemist special funds. This survey informs the process of monitoring. It cost approximately \$80,000 over two years.

Delegate Otto asked whether Dr. Hartwell had worked at Department of Natural Resources. Dr. Hartwell said he ran the Toxins program. They looked at issues that were broader than pesticides, reviewing spills, heavy metals, PCBs. There was a lot of monitoring by MDE/DNR who were looking for legacy contaminants. Most chemicals used today are more water soluble and don't necessarily accumulate. Mr. Weber stated that during monitoring, it was his understanding that pesticides weren't the issue but nutrients and sediments were. He has not heard about high concentrations of anything. What was out there? Dr. Hartwell said there was chlorination in sediments and PCBs. He did not do a great deal of water testing. He doesn't have the data.

Ms. Spagnoli asked how you transfer use data to speculated environmental risks. Dr. Hartwell said you would have to do that through calibrated modeling and predict the resulting concentrations. Through usage you can predict what is in place. Even if you don't apply pesticides all the time they are leaking all the time. Ms Spagnoli asked how is what you are proposing through risk assessments different from what EPA already does? Dr. Hartwell said he is not sure what EPA is doing. USGS does some modeling. Amount of material – Most of the material stays but a significant amount reaches the waterways.

Ms. Berlin said it is important to know what, when and where. The MDA survey is an aggregate. She asked Dr. Hartwell if that was sufficient information. He said no. The surveys used to be done county by county. Statewide information is not helpful. Site specific data is vastly more important. Senator Jennings said, you said the current data collection is fragmented? But is non-agricultural information more difficult to get? Yes for homeowners and all the things stores like Home Depot and Lowes sell. Ms. Holko said that EPA is coming to the next meeting. Dr Kutz said that pesticide reporting data has to be geo-referenced and combined with monitoring data. Dr. Hartwell said it is more useful if referenced to a specific location.

Dr. Ritter said if you have a list of pesticides being used, what are you going to do with that information? How will you use it? Dr. Hartwell said that toxics unite and translate an amount of data. This is a mass of material divided by toxicity levels. This can be applied to a specific kind of watershed. We can look at the toxic impact and correlate with environmental measures. Dr. Ritter said things come down to the Bay from other states. How do you figure this out? Dr. Hartwell said you can monitor what is coming in from other areas.

Dr Ritter asked who would put together this data? Dr. Hartwell said the state or feds but we are all running out of money. Dr. Bowerman asked if you have to put your money into measuring where do you put your effort? Dr. Hartwell said water would be the primary medium – because most toxics compound in water. Dr. Bowerman said what about biodata and monitoring tissue or using raw compounds and measuring effects? Dr. Hartwell said you have to find material itself in tissue or look at it at the right time. You have to figure out what to test. There is tissue monitoring for a variety of species. There is more error having tissue or you can go back to cause and effects.

Mr. Schoonmaker said there are different rivers from different states. How do you make data usable? How do you take use data with different variables? How would that come to any valuable conclusion? Dr. Hartwell said you would use risk assessment, making an exposure assessment. If you want to choose all pesticides then it would depend upon what specific question. Not having the data means you don't have the data.

Mr. Schoonmaker mentioned legacy pesticides. Today's pesticides are water soluble. Dr. Hartwell said there is very little information except for from USGS. There are issues with herbicides and insecticides and they are different than the types of issues from 20 years ago. The research should be based upon a specific target question.

Dr. Carys Mitchelmore

Dr. Mitchelmore has looked at pollutants in an aquatic setting, including health and function. She has done a number of written statements. Contaminants alter species population size. There are new and multiple ways that this is occurring, including from legacy contaminants. The reproductive capacity of the species is being impacted by low doses of contaminants. We need to have an understanding of what contaminants are involved, and whether a chemical has dissolved. We need to look at basic things – structure, form, when, where. In California the information is reported monthly by date, location, amount being used. Annual summaries are provided about pesticide uses geographically. This is targeted information. One example is copper-based pesticides. Surveys are small sample of information. Of those that received the MDA survey, 50 percent responded. But it doesn't provide comprehensive and special data. The California data is comprehensive.

Dr. Mitchelmore repeated one of the questions which was "What Gaps Have been Identified and by Who." Currently, the information on details of which pesticides are being used is insufficient. The California database, for example, allowed us to map trends of pesticide use. For example, she participated in research on the Sacramento River. There was an extensive effort to carry out this kind of forensic approach. And, given that there are hundreds of chemicals in the Chesapeake Bay, you may not be able to detect them but you can identify hot spots even if it is retrospective. There may be potential watersheds with groups of pesticides, etc. This way you can identify water bodies or specific types of pesticides reaching threshold levels of concern. Pesticides degrade very rapidly but metabolism is important. It is a cost-effective way to rule out or rule in. It is important to establish trends. A whole variety of end users use this data. The information is often not known and you need a forensic approach. Collected information is just not available. You need temporal and spacial analysis regarding current usage. Use data will help by building data into hydrological models. You can then target models of concern. It helps to triage the information.

Delegate Otto asked Dr. Mitchelmore how one could access the database and how often the data are collected. Dr. Mitchelmore said you get access online and the data are collected monthly. If you target specific pesticides you can start building a bigger data set. There are a lot of historic mines, for example, and she did a first report looking at pyrethroids. Mr. Fellows said that pesticide data would be helpful and asked about the amount of information on drinking water. This information would be helpful. Mr. Myers asked about endocrine disruptors and behavioral issues. There have been a number of papers on that. You could look at sublethal effects. He

mentioned the Bay model where it looks at a “typical” farm and typical other things. The same thing could be possible. Couldn’t you do this without creating a whole new database? Is the California database both agriculture and non-agriculture and how is that collected? Dr. Mitchelmore said it is collected from agriculture and pest companies but not from homeowners. California has been looking at getting information from stores such as Home Depot and Lowes.

Ms. Spagnoli asked if she ensured the accuracy of data and how she avoided errors because there is a large discrepancy between sales and use. Data is only as good as the quality of the data. Dr. Mitchelmore said she just used the data from the database.

Dr. Bowerman said that in Michigan, there are existing chemicals of mutual concern among Great Lakes states that university and government scientists collectively look at. Chemicals are monitored and then we decide; Is there anything like that on the Chesapeake side. Dr. Mitchelmore said that in California the Dept of Water Resources was using this information to look at physical chemical properties. Dr Kutz said the CA Department of Pesticide Regulation and the CA Air Board ~~at EPA~~ uses such a paradigm to select chemicals for monitoring studies. The EPA Chesapeake Bay Program used to have Toxic Subcommittee focused on the Chesapeake Bay but it was dissolved a few years ago. It looked at toxics watershed by watershed. Dr. Bowerman said that scientists in the Great Lakes area looked at new pharmaceutical data. It was the conclusion of the committee that nothing was above the threshold. Dr. Mitchelmore asked if they looked at mixtures. Dr. Bowerman said they looked at chemicals that were out there. When they look at chemical effects, they don’t look at mixtures. They look at biological – populations, etc. There is not a lot of mixture experimentation. They archive samples where they can take a look.

Dr. Taylor asked how you determine low levels of chemicals. Dr. Mitchelmore said they looked at fish larvae, reproduction, etc. This did allow them to focus on pathway and degradation products. Mr. Weber said he understood that California agriculture produces 26% of all agriculture in the United States. Mr. Schoonmaker asked what is being done with data today. Dr. Mitchelmore indicated that lots of things are not detected so that is an issue. And copper-based products – aren’t really used for wood treatment but for tomatoes. Ms. Berlin said that the lack of data on mixtures is an issue and EPA is not looking at it. Is that a serious data gap? Dr. Hartwell said there was a lack of synergistic studies. There is no systemic database. Dr. Kutz asked if Dr. Hartwell’s report is published. Dr. Hartwell said he had two papers published.

Dr. Ritter asked whether the California reporting system requires that I report what I use. Who polices that. Ms. Holko said counties supply data to the state. When the program started there was tons of data but there was no way to get to Sacramento to input it.

Tyler Smith

Mr. Smith said he was appearing on behalf of Dr. Robert Lawrence, MD. He works at Center for a Livable Future (CLF) doing academic research at the Bloomberg School of Public Health. CLF has done an expert review of pesticides in the Chesapeake Bay. He supports a pesticide reporting system. Mr. Smith gave examples of different studies that have been done. For example, one study was done about the residential proximity of a mother to a pesticide application. The California database is the source of various pesticides. There are pesticide data

gaps with lots of relevant data needed. We need pesticide use data. Maryland has an extensive cancer database. Without pesticide use data we can't do proper research. Mr. Smith said that MDA's voluntary surveys with USDA serve an important purpose but it does not provide geographic detail. This is not intended to criticize but there is a dearth of available data out there. The response rate for the survey is very poor – somewhere between 41 and 62 percent and dependent on the types of questions. More data is needed from a human toxicity standpoint. For example, the second most used toxic chemical is arsenic. There are 3.7 million pounds of arsenic. Where is it being applied? We don't know.

Delegate Lafferty said if data on distribution were aggregated so that you could determine amounts being applied or utilized, so what? What is the value of knowing that information? Are there threshold amounts that would trigger? Mr. Smith said, for example, if they were being applied in two different zip codes, then that would be cause for concern. Dr. Taylor said if you had 3.7 million pounds of this, then would you be looking at the relationship between use and zip codes? It would be difficult to draw conclusions. You would have to look at ecological data and look at people. Ms. Spagnoli said if you were looking at specifically arsenic wood treatment the label specifies how it is used and where it is used. Don't some associations vary when you are comparing two things? For associations you would compare to the actual toxicology. Doesn't confounding make association data more difficult to assess. Mr. Smith said the key there is the study design. Ms. Spagnoli said she did not know of an example where a study has provided definitive uses. Mr. Smith said pesticide use data would provide one avenue. Ms. Spagnoli said it should not be used to the exclusion of other kinds of approaches. The pesticide label is important.

Dr. Bowerman asked how accessible diagnostic data is for individuals in the state. Unless it has changed you can get general hospitalization information, but because of patient confidentiality rights, you can't get this information. Dr. Smith said cancer registries are there. For example, the National Cancer Institute is matching agriculture with cancer rates for particular cancers. Dr. Kutz said as a scientific organization, is it the policy of your Center to associate chemicals with Parkinson's and other diseases as statistical association or causative? Mr. Smith said no study has been done that has an acceptance of conclusion. It's very important that people differentiate between statistical associations and cause and effect in epidemiological studies. Dr. Kutz said how would you rate pesticide use reporting to exposure? Mr. Smith said the California data tests whether things such as Parkinson's and autism affects exposure. Dr. Kutz said this is a confusing statement and questions the value of such statements in epidemiological research. Dr. Kutz indicated that causal thinking and statistical associations in epidemiological studies are vastly different!

Delegate Otto asked Mr. Smith to clarify what his background is. Mr. Smith said he is a senior researcher and policy analyst. He is here on behalf of Dr. Lawrence. He is characterizing public health impacts and developing an interdisciplinary center. He works with health care providers. They do a wide array of things including environmental risk assessments. Delegate Otto mentioned that Mr. Smith's presentation referenced combinations of pesticides. Maneb is a registered fungicide and Paraquat is an agricultural herbicide and Delegate Otto indicated that they would never be used together. Smith said the study had to do with residential proximity. Dr. Kutz asked for additional information on exposure. Mr. Schoonmaker mentioned arsenic

pentoxide. This is the most used pesticide in Maryland. The industry that uses it (wood treatment plants) is not even represented on the workgroup. Mr. Smith said CLF would be interested in more information on this industry. Mr. Fellows asked if CLF would speak to drinking water i.e. upstream and intake. And he said there is a balance needed with confidentiality.

Delegate Lafferty asked what is the recommended kind of data that should be used? Dr. LaKind said that she is unsatisfied with bulk data. Toxic release inventory data, for example, is not that valuable because it is very crude. You need to collect environmental samples. Ruth Berlin mentioned risk assessment and endocrine disruptors and whether or not a traditional toxicology dose makes the poison.

Ms. Spagnoli said EPA would disagree with this. She believes their assessment is already capturing low dose data. Ms. Berlin mentioned the intranet website which had a lot of good pesticide articles and information. Ms. Spagnoli said that when EPA does risk assessment it accounts for individuals and interspecies. It also takes into account individual data. Mr. Schoonmaker also mentioned the EPA product registration process and what they take into account. EPA is already doing risk assessment for these things. They are dictating by law by label.

Dr. Judy LaKind

There are many instances where we thought we understood the human health effects associated with a specific chemical, but additional studies surprised us. We never know everything so we continue to research to fill in data gaps. Dr. Kutz said you could substitute wildlife, biota and fauna in your public health presentation. The approach is similar.

Mr. Fellows asked about drinking water and sensitive populations. Dr. LaKind said sensitive populations are supposed to be protected by the maximum contaminant level (MCL) or maximum contaminant level goal (MCLG). Risk assessment has a process for assessing risks from mixtures. Risks are added based on similar outcomes. Dr. Mitchell said our job is to figure out what is a reasonable amount of data to get. Minimum graphic resolution and temporal reporting that might occur with public health benefits and consequences. Dr. LaKind said no one has unlimited resources, so one path forward is to do a focused study. For example, by choosing a specific area and then setting up a grid and collecting environmental medial samples.

Delegate Lafferty said the next meeting will focus on data on existing homeowners/as well as existing state pesticide data programs. There are cost benefit considerations and it's very expensive to do all of this. There is also a cost to the person who has to collect and report. If there is additional information and individuals that need to be brought in please let us know. We need to get to the point when we are making decisions.

Suggestions from Working Group

Mr. Fellows – Information regarding drinking water producers and the water industry.

Dr. Taylor -- Clarification/information on workplace/industrial exposure and lower dose exposure.

Ms. Spagnoli – Focus on pesticide registration process and what kind of information is available. Possibly look at the top three pesticides in the wood industry and maybe ask someone from the industry come in.

Ms. Berlin – Look at what USGS scientists have done on drinking water. There is lots of information on pesticides.

Mr. Weber -- Concerned about minor use pesticides. We have a battle with soft fruit and little gnats. We use a small amount of pesticides. The Privacy issue is an economic issue –

Dr. Kutz – Is there someone at extension that we could talk to? Use California database.

Ms. Holko – Not sure how use data will help with exposure data. She is still struggling with who wants the information.

Delegate Lafferty – Homeowners/retailers information is missing. Is this is a problem?

A workgroup member noted that EPA's information indicates that 75 percent of pesticides are agricultural and 25percent are non-agricultural. Mr. Smith said that there needs to be more data scrubbing but you are always dealing with an incomplete data set. Dr. Hartwell said you can use the data but you need to be careful what you do with the data. Senator Manno said asked what that looks like in Maryland and may guide what we do. Ms. Spagnoli said that EPA has consumer use data and a new survey is going in next year.

Ms Berlin noted Dr. Goldman's written testimony. She has years and years of experience. There is no better information than high quality usage data and that data should be available.

Delegate Lafferty adjourned the meeting at 4:07pm.