ATTACHMENT 1

MEMORANDUM

DATE: 30 December 2010

TO:

Don Bugbee	Rob Linde
George James	Phil Neaton (Chairman)
Laurelyn Lewis	Jason Thornton
John Rhodes, ex officio	Ron Tyler, ex offocio

FROM: Timothy C. Griswold, First Selectman

SUBJECT: Organic Pesticide Committee

Thank you for your willingness to serve on the Organic Pesticide Committee.

The Committee has been established to research the pros and cons of having the Towns of Lyme and Old Lyme use organic pesticides, rather than chemical pesticides, on their Parks and Recreation fields in Old Lyme (Town Woods Park fields, Cross Lane baseball field and Mile Creek soft ball field) and to make a recommendation to the Boards of Selectmen of the two towns about whether to convert from chemical to organic pesticides.

We are aware that the State of Connecticut requires schools to use organic pesticides on fields that are used by students in elementary and middle schools. John Rhodes, Facilities Director for Regional District 18, joined a group of people who visited the Town of Branford and who spoke at length with the Director of Parks and Rec. (Alex Palluzzi) and Branford's grounds contractor (Chuck Sherwood). The group inspected a field complex adjacent to the Parks and Rec. building. We are aware of other schools that have converted to organic (Cheshire, Granby and Manchester State Univ.) and there are others, as well.

Given the sizeable investment we have in the Town Woods fields, in particular, we want to be sure a conversion to organics would result in the same high quality fields we now have. This is especially important given the added usage the fields receive from school teams that cannot use the District's fields, due to the High School project construction.

I have taken the liberty of scheduling the first meeting of the Committee to be at 7:30 PM on Wednesday January 19^{h} in the Old Lyme Town Hall. At this meeting, we can set objectives and timelines. Our goal is to perform the research and to make a recommendation within a six month period.

Again, thanks for your interest and willingness to serve on the Committee.

cc: Ralph Eno, First Selectman, Town of Lyme

PI-133

UF UNIVERSITY of FLORIDA
IFAS Extension

Herbicides: How Toxic Are They?[1]

Fred Fishel, Jason Ferrell, Greg MacDonald, and Brent Sellers[2]

A herbicide is any agent used to bring about plant death. Although everything from salt to soap has been used for this purpose, herbicides are primarily synthetic chemicals manufactured for use in the agriculture, industrial, and ornamental and turf industries. For many years these products have been seen as toxins that poison plants and are equally harmful to the applicator. To compound this issue, organically produced food is becoming more popular because it is pesticide-free and is seen as being healthier. These factors have lead to a prevalence of opinion that pesticides are bad for the environment and harmful to humans.

Although there have been pesticides that were toxic and dangerous to handle, most of these products are no longer used and have been replaced by newer chemistry. Pesticides now must go through rigorous testing by EPA before they can be sold. This has led to many herbicides that possess little or no mammalian toxicity and are less harmful than many everyday household products (Table 1). Surprisingly, household chemicals that many of us store under the kitchen sink pose more risk to the handler than herbicides.

A common way to document toxicity is by oral LD_{50} values. LD_{50} is the amount of chemical required to provide a "lethal dose" to 50% of the test population. LD_{50} is measured in mg of chemical administered per kg of body weight. Therefore, an oral LD_{50} of 500 means that 500 mg of chemical were needed to obtain lethality in a 1 kg subject (rabbit). The lower the LD_{50} value, the less chemical that is required to reach lethality. A chemical with an LD_{50} of 10 mg/kg is more acutely toxic than one with an LD_{50} of 100 mg/kg.

Table 1 demonstrates that herbicides often have higher LD_{50} values than many commonly used or consumed products. Why is this? Why are chemicals that are so effective on plant species not equally harmful to humans? The reason is two-fold. First, herbicides target highly specific biological or biochemical processes within plants, such as photosynthesis and production of branch-chain amino acids. However, mammals (humans included) do not photosynthesize or produce branch-chain amino acids. Therefore, herbicides that target photosynthesis or branch-chain amino acid production have no place to bind in our bodies and have very little impact.

Table 1. Comparison of oral LD_{50} values for commonly used herbicides and consumer goods.

Herbicide	LD_{50}[1]	Common consumer chemicals	LD_{50}
Paraquat (Gramoxone)	~100	Nicotine	9
Triclopyr	630	Caffeine	192
2,4-D	666	Bleach	192
Pendimethalin (Prowl)	1050	Tylenol	338
Atrazine	3090	Household ammonia (10%)	350
Glyphosate (Roundup)	4900	Codeine	427
Imazaquin (Image)	>5000	Table salt	3000

Secondly, since these herbicides do not bind in our bodies, they are often excreted in urine within 24 hours of the dose. This flushing of the herbicide does not allow concentrations to build up within the body to toxic levels. This in no way means that it is safe to intentionally ingest herbicides, but the fact is that our bodies are well equipped to safely dispose of accidental exposure to many common herbicides.

What about Agent Orange?

Agent Orange was a herbicide product containing equal parts 2,4-D and 2,4,5-T. These herbicides were used extensively in the Vietnam War to defoliate the jungles in an attempt to expose troop movement. However, many veterans came forward after the war with illnesses ranging from a multitude of cancers to various respiratory diseases. It was speculated that Agent Orange was to blame for these disorders.

After numerous governmental inquiries, it has been learned that the herbicides 2,4-D and 2,4,5-T were not responsible for the human health effects of Agent Orange. Rather, Agent Orange was inadvertently contaminated with dioxin, a potent and known carcinogen. Dioxin was an unanticipated byproduct of the 2,4,5-T synthesis process. Although synthesis processes have been developed that allow 2,4,5-T to be produced without dioxin contamination, these procedures were not employed to fulfill this specific contract. Consequently, the production of 2,4,5-T has been totally banned by the US and numerous other countries. For a detailed discussion of this subject, see http://www.nap.edu/catalog/11242.html#orgs.

Conclusion

It must be noted that some herbicides are harmful. Herbicides such as paraquat and endothal have "Danger" signal words on the label and must be handled with great care. Therefore, it is important that **all** herbicides be handled carefully and in a manner consistent with their labeling. Just because some herbicides are less toxic than table salt does not mean that any herbicides should be handled carelessly. But on the other hand, using a herbicide in accordance with the product label will not often result in personal injury or cause for alarm.

Additional Information

Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides. 2004. Veterans and Agent Orange. National Academies Press. Washington, D.C. (http://www.nap.edu/catalog/11242.html#orgs). Visited September 2006.

Fishel, F.M. 2005. Evaluation of pesticides for carcinogenic potential. UF/IFAS EDIS Publication PI-37. http://edis.ifas.ufl.edu/PI074 . Visited July 2005.

National Pesticide Information Center (1-800-858-7378 or http://npic.orst.edu/). Visited July 2005.

Nesheim, O.N., F.M. Fishel, and M. Mossler. Toxicity of pesticides. UF/IFAS EDIS Publication PI-13. http://edis.ifas.ufl.edu/PI008. Visited August 2006.

Poison Information Center Network (1-800-222-1222 or http://www.fpicn.org). Visited July 2005.

REC'D 1-19-11

ATTACHMENT 3

From: Conservation Commission
To: Board of Selectmen
Subject: Visit to Branford- Dec. 10, 2010
Date: January 3, 2011

Report on the Visit to Branford

Park and recreation fields can grow grass that can survive heavy usage without the use of pesticides. The Branford fields rely heavily on leaf mulch as a source of nitrogen. It was admitted that Ph does need to be adjusted by the application of commercial fertilizer (NOT PESTICIDES) at times. Heavy reseeding was part of their protocol. Regular watering is an important part of the treatment of the fields. They lease leaf processing equipment to provide the leaf mulch.

The difficulties associated with converting to an all natural (if not purely organic) treatment of our park and recreation fields cannot be ignored or minimized. They must be weighed against the fact that kids almost certainly should not be exposed to more pesticides than they are already , especially when state law clearly states that elementary and middle school children shall no longer have pesticides applied to their fields and playgrounds. The town and this year the Board of Education schedules these same school children to play on pesticide treated town fields.

The Conservation Commission sides with the precautionary principle and the spirit of the state law no matter how difficult the resolution of the problems inherent in the conversion to no pesticides may be. If John Rhodes can bring District 18 fields into compliance with state law, so can those in charge of the town's fields. Current law in both Connecticut and New York supports that decision.