The Watershed Partnership, Inc.

February 22, 2012

To: Members of the Planning and Development Committee:
Subject: Concerning opposition to Bill 5155 AN ACT MODIFYING THE BAN ON PESTICIDE APPLICATIONS ON SCHOOL GROUNDS.

Honorable Members of the Planning and Development Committee:

It is appalling to even consider involuntarily exposing children to toxic lawn pesticides at school. The risks of these toxic chemicals to children are been well established. They are included in a fact sheet that accompanies my testimony.

The substitution of "Integrated Pest Management" in place of the pesticide ban is a subterfuge of pro-pesticide interests to once again allow the full use of all toxic lawn pesticides. Groundskeepers who want IPM do not wish to cause harm. They lack appreciation of the subtle but harmful effects of toxic lawn pesticides. They do not realize what the testing of these chemicals omits, such as testing these chemicals along with the chemicals they are used with. They do not realize that it is the chemical companies that pay for and conduct the tests and choose the data they will send to the government. They do not realize that the testing for long term effects is totally inadequate and not even studied for many of the pesticide products they use. They do not realize that they themselves are at risk as a consequence of using these chemicals. I have included with my testimony letters from qualified experts who have commented on the risks of toxic lawn pesticides as well as a fact sheet that shows why IPM is basically flawed and unworkable in reality.

I have also included data and documentation that shows that pesticide-free organic turf care works and works well. Further, once the pesticide degraded soil is restored to health the costs are even less than conventional care.

Because there are documented safe, cost-effective ways to maintain school lawns and sports fields without the use of toxic chemicals, it makes no sense at all to expose children to the risks from toxic lawn pesticides.

For the sake of all of Connecticut's children I urge you to reject this bill.

Respectfully,

Jerome A. Silbert

Jerome A. Silbert, M.D.
Executive Director
The Watershed Partnership, Inc.

See Attachments:

Jerome A. Silbert, M.D., Executive Director • 155 White Birch Drive, Guilford, CT 06437
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MOUNT SINAI
SCHOOL OF
MEDICINE

Philip J. Landrigan, M.D., M.Sc.
Ethel H. Wise Professor of
Community Medicine
Chairman, Department of
Community and Preventive Medicine

February 26, 2007

Jerry Silbert, M.D.
Executive Director
The Watershed Partnership, Inc.
155 White Birch Drive
Guilford, CT 06437

Re: Connecticut Safe School Grounds Legislation

Dear Dr. Silbert:

Thank you for having asked me to comment on the proposed Safe School Grounds legislation that is being considered in the State of Connecticut. I understand that the intent of this bill is to completely ban the use of certain toxic lawn pesticides on the grounds of all elementary, middle and high schools in Connecticut. I support the goals of this important legislation. In my opinion, if this bill is passed into law, it will prevent cases of acute pesticide poisoning as well as subclinical neurotoxicity among Connecticut's school children.

I am a pediatrician who has been involved for many years in studying the impact of pesticides, heavy metals and environmental factors on the health of children. My biosketch is attached to this letter. From 1988 to 1993, I chaired the Committee on Pesticides in the Diets of Infants and Children that was convened by the U.S. National Academy of Sciences at the direction of the U.S. Senate. The report of this Committee documented the very substantial differences that exist between children and adults in exposure and in vulnerability to pesticides. This report concluded that children are uniquely susceptible to pesticides, and it made the strong recommendation that children be provided special protections in law and regulation to safeguard them against the hazardous impacts of pesticides. The recommendations of the NAS Committee on Pesticides that I chaired provided the intellectual basis for the Food Quality Protection Act, the principal federal legislation governing the use of pesticides in the United States.

I am currently Professor of Pediatrics and Chairman of the Department of Community and Preventive Medicine at the Mount Sinai School of Medicine in New York City. At Mount Sinai, I am co-principal Investigator of our Center for Children's Health and the Environment and Principal Investigator for the New York Vanguard Center for the National Children's Study.

I strongly support the proposal to ban toxic pesticides from school grounds in Connecticut. Pesticides are chemicals that are deliberately designed to be toxic. Two widely used classes of chemicals that are of particular concern are the organophosphate and the carbamate pesticides. These classes of chemicals are specifically designed to be toxic to the nervous system, and the war gas sarin, which was used in the Tokyo subway attack, is a member of the organophosphate family. Recent research has shown that organophosphate pesticides,

chloropyrofos in particular, are extremely hazardous to the developing brains of children. These compounds can cause acute, clinically obvious poisoning and also can cause silent brain damage. Several years ago the U.S. Environmental Protection Agency banned all residential uses of two organophosphates – chloropyrofos and diazanon. However, many more organophosphate and carbamate pesticides remain on the market. Herbicides are another class of chemical of great concern. Many herbicides are used on school grounds to control weed growth. Among the hazards associated with herbicides are developmental problems and increased risk of certain cancers particularly lymphomas.

Much of the use of pesticides in schools is entirely cosmetic. It is not logical to use highly toxic chemicals to achieve a goal, which is based purely on appearance.

In summary, I strongly support the proposed legislation, and I wish you all best success in achieving its passage.

Sincerely,

Philip J. Landrigan, MD, MSc, DIH
Professor and Chairman
Department of Community & Preventive Medicine
Professor of Pediatrics
Mount Sinai School of Medicine
New York, NY 10029 USA

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Enclosure

Philip J. Landrigan, MD, MSc, is a pediatrician, epidemiologist, and international leader in public health and preventive medicine. After graduating from Harvard Medical School and completing his residency in pediatrics at Boston Children's Hospital, Dr. Landrigan served for 15 years as an epidemic intelligence service officer and medical epidemiologist at the Centers for Disease Control (CDC) in the National Institute for Occupational Safety and Health. He has been a member of the faculty of the Mount Sinai School of Medicine since 1985 and chairman of the Department of Community and Preventive Medicine since 1990. He has been a leader in developing the National Children's Study, the largest study of children's health and the environment ever launched in the United States.

Dr. Landrigan is a member of the Institute of Medicine of the National Academy of Sciences. He is editor-in-chief of the *American Journal of Industrial Medicine* and previously was editor of *Environmental Research*. He chaired committees at the National Academy of Sciences that produced the reports *Environmental Neurotoxicology* and *Pesticides in the Diets of Infants and Children*. The report that he directed on pesticides and children's health was instrumental in securing passage of the Food Quality Protection Act of 1996, the major federal pesticide law in the United States. From 1995 to 1997, Dr. Landrigan served on the Presidential Advisory Committee on Gulf War Veteran's Illnesses. In 1997 – 1998, Dr. Landrigan served as senior advisor on Children's Health to the administrator of the U.S. Environmental Protection Agency (EPA), and he was instrumental in helping to establish a new Office of Children's Health Protection at the EPA.

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John Peter Wargo, PhD
Professor of Environmental Policy and Risk Analysis
Yale University
john.wargo@yale.edu

January 30, 2007

Senate Environment Committee
State of Connecticut

Dear Committee Members:

First, I offer my apology for my absence from the hearing. I have two classes at Yale on January 31st. My name is John Wargo, and I am a professor of risk analysis and environmental policy and political science at Yale University with appointments in the School of Forestry and Environmental Studies, the Department of Political Science, and I have been Director of Undergraduate Studies for Yale's recently formed Environmental Studies major. I hold a PhD in environmental policy from Yale (1984), taught at Dartmouth in the Thayer School of Engineering until 1986, returned to Yale in 1986, and was promoted to tenure in 1996. Currently, I am a full professor. I have participated in several National Academy of Sciences Panels on human exposure to pesticides, have provided advice to several EPA administrators, have been a long time contributor to EPA's Scientific Advisory Board, testified in both the U.S. House and Senate on issues related to children's environmental health, and advised the U.N. World Health Organization and the Food and Agriculture Organizations on methods to protect children's health from pesticides. I have also participated in the drafting of federal, state and local law designed to protect children from exposure to pesticdes in food, air, water, soils, and consumer products, including pesticides. I also have specific experience measuring and modeling children's exposure to pesticides. I have only a few points to make and they follow.

1. Pesticides are intentionally toxic substances. It is a serious mistake to assume they will affect only species they were designed to harm. Pesticides often have unintended effects on non-targeted species.

2. Children are especially vulnerable to pesticides for two reasons. First, children are physiologically more susceptible to health loss due to rapid growth and development of organs and functions. Second, children breathe more air volume, drink more water, eat more food and touch more potentially contaminated surfaces—all per unit of their bodyweight—than adults. For any concentration of pesticide residue in air, water, food or surfaces, children normally experience higher levels of exposure than adults.

3. Children experience rapid growth and development of different organ systems and functions during different periods. Full maturity often does not occur until the age of 20, after high school years.

4. Most pesticides have not been tested to know their effects on the developing nervous, immune, and endocrine systems of humans. There is plausible evidence that many pesticides are neurotoxic, others mimic human hormones, and still others may affect the immune system. Adverse effects are normally dependent upon the intensity of dose, however the doses that children and adolescents experience in school settings are poorly understood.

5. Current pesticide law permits the application of dozens of pesticides in the school environment, and they are normally applied by individuals who have little or no training in modern chemistry, biology, toxicology, epidemiology, exposure assessment or risk assessment.

6. Collectively, these are serious challenges to those who propose continued application of pesticides in or near schools. I strongly support State legislation that would ban pesticide applications for cosmetic purposes and nuisances on school property. A serious public health threat should be demonstrated before any application is permitted. If public health officials determine that a serious health threat from pests does exist, non-chemical solutions should be attempted before the least persistent, mobile and toxic pesticides are applied. Integrated pest management (IPM) is a term-of-art that often used to justify continuation of past pesticide use practices. It is my opinion that IPM should not be relied upon to provide sufficient protection for children's and women's health.

7. I have not accepted payment for this comment, and I encourage all who offer testimony on this issue to disclose their financial interest in the bill.

Sincerely,

John Peter Wargo, Ph.D.
Professor
Yale University

American Academy of Pediatrics

HEZEKIAH BEARDSLEY CONNECTICUT CHAPTER

104 HUNGERFORD STREET • HARTFORD, CT 06106 • TEL. (860) 525-9738 • FAX (860) 727-9863

Good afternoon, my name is Robert Zavoski, MD, MPH, President of the Connecticut Chapter of the American Academy of Pediatrics and Medical Director of Community Health Services, a community health center in Hartford. I am here to offer the Academy of Pediatrics' support to Proposed Bill 5234, An Act Banning Pesticide Use in Middle and High Schools.

Children are not little adults. Their physiology and anatomy are different than those of adults, placing them at additional risks when exposed to poisons and toxins in their environments above those faced by adults. Children's metabolic rates are relatively rapid, therefore children and adolescents breathe faster than do adults; their skin is thinner and therefore more likely to absorb toxins; children are shorter with their airways closer to the ground and thus inhale more of ground level toxins than do adults; children are developmentally immature and therefore less likely to recognize risks and take the proper precautions or actions when exposed to toxins. For all of these reasons, children are at far greater relative risk from poisons and toxins in their environment than are adults. In addition, children hopefully have longer to live than adults, therefore the cumulative effects of toxins over time are more likely to effect children than they are to effect adults.

Lastly, the long term adverse effects of many toxins are simply not known. It takes relatively little time to develop a new chemical but generations to determine its long term toxicity. History has many examples of "safe" procedures or products, such as asbestos, arsenic treated lumber, chlordane, DDT, diethylstibesterol, etc, later found to be unsafe or deadly. It is therefore vitally import to limit exposure to such substances to only the necessary circumstances.

Pesticide use on school athletic fields and lawns is not a necessary exposure. Generations of children have successfully played and competed on fields that were not aesthetically perfect. The risk of pesticides to the present and future health of our children does not justify the use of these toxins; their use should be prohibited.

Thank you for your kind attention.

This letter was submitted as testimony to the Joint Committee on the Environment on January 31, 2006.

A Cost Comparison of Conventional (Chemical) Turf Management and Natural (Organic) Turf Management for School Athletic Fields

A report prepared by
Grassroots Environmental Education
A non-profit organization

Written by
Charles Osborne
& Doug Wood

March, 2010

A Cost Comparison of
Conventional (Chemical) Turf Management
and Natural (Organic) Turf Management
for School Athletic Fields

Introduction

The mounting scientific evidence linking exposure to pesticides with human health problems, especially in developing children, has increased the demand for non-chemical turf management solutions for schools. One obstacle commonly cited by chemical management proponents is the purported higher cost of a natural turf program.

This report compares the annual maintenance costs for a typical 65,000 square foot high school football field using both conventional and natural management techniques. Both programs are mid-level turf management programs, typical of those currently being used at many schools across New York State.[1]

The analysis of data demonstrates that once established, a natural turf management program can result in savings of greater than 25% compared to a conventional turf management program. (Fig. 1)

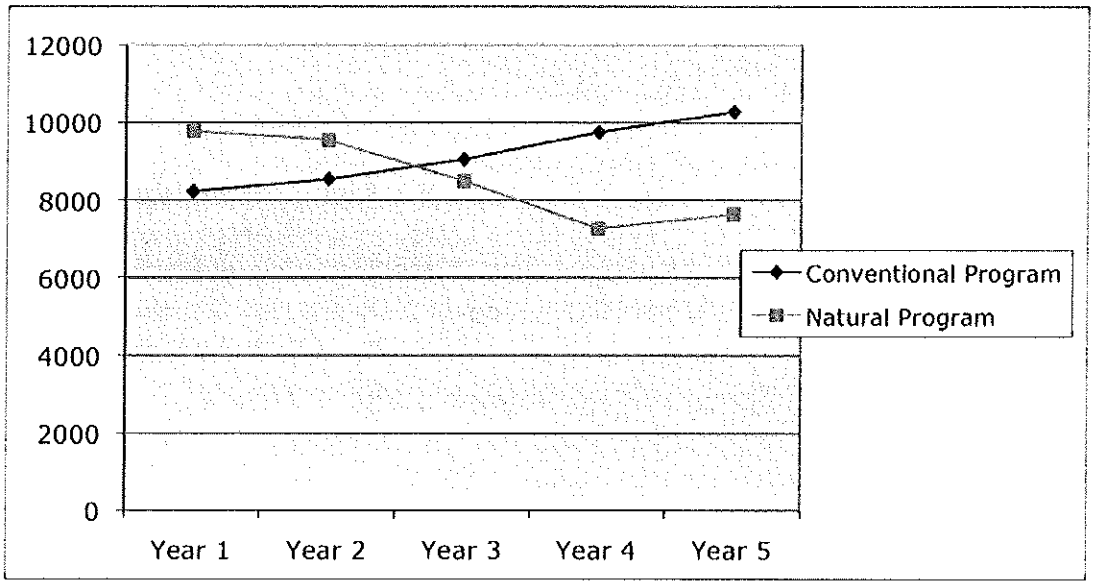

Figure 1: A Comparison of Costs for Conventional and Natural Turf Programs Over A Five-Year Period

[1] We recognize that some schools will spend considerably less for field maintenance than our example, and some will spend much more. The turf management programs chosen for this comparison are designed to yield similar aesthetic results.

Background

Prior to 1950, all school playing fields were maintained organically. The widespread use of chemical pesticides to control weeds, insects and turf diseases on school playing fields began in the post-World War II era, when chemical companies sought to establish markets for their products in the agricultural, consumer and municipal sectors. By the mid-1990s, former New York State Attorney General Robert Abrams estimated that 87% of public schools in the state were using chemical pesticides on their fields.[2]

As awareness of the risks associated with pesticides has grown and demand for non-toxic solutions has increased, manufacturers and soil scientists have responded with a new generation of products and technologies that have changed the economics for natural turf management. Product innovation has resulted in more effective products, and advances in soil science have increased understanding of soil enhancement techniques. Virtually all major turf chemical manufacturers now offer an organic product line. Professional training and education have also increased, with most state extension services and professional organizations now offering training courses in natural turf maintenance.

Sources of Data

The products, costs, application rates and other data for our analysis have been obtained from various sources, including the Sport Turf Managers Association[3], Iowa State University[4], bid specifications from a coalition of public schools on Long Island,[5] bids and proposals from conventional turf management companies, and documented costs for existing natural programs.

Economic Assumptions

This analysis is based on the cost of operating in-house turf programs. Sub-contracted programs typically cost 30-35% more. Both programs include fertilization, seeding and aeration. All product costs are based on quantity institutional purchases, with a calculated 7% annual cost increase. Labor costs have been calculated based on a municipal employee @ $40,000 including

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[2] *Pesticides in Schools: Reducing the Risks*, Robert Abrams, Attorney General of New York State, March 1993.

[3] "2009 Field Maintenance Costing Spreadsheet" published by the STMA. Available online at www.stma.org/_files/_items/stma-mr-tab6-2946/docs/field%20maintenance%20costing%20spreadsheet.pdf

[4] "Generic Football Field Maintenance Program" by Dr. Dave Minner. Department of Horticulture, Iowa State University.

[5] "Invitation to Bid, Organic Lawn Care Field Maintenance and Supplies," Jericho Union Free School District, Jericho, NY on behalf of 31 school districts.

benefits, calculated at $20 per hour. Indirect costs for pesticide applicator licenses, training, storage/security and DEC compliance costs have been estimated at $500 per year. Fertilization for both programs has been calculated at the rate of 5 lbs of nitrogen (N) per 1000 SF. Grub and/or insect controls may or may not be necessary. Compost has been calculated at a cost of $40 per yard. Seeding rate is calculated at 5 lbs/1000 SF. Cost of water is estimated at $0.003212/gal.[6] [7]

Irrigation

Irrigation costs for turf maintenance are considerable, but are generally less for naturally maintained fields due to deep root growth and moisture retention by organic matter. Estimates of irrigation reduction for natural turf programs range from 33% to more than 50%. This analysis uses a conservative diminishing factor for irrigation reduction for the natural management program, starting with 100% in the first year as the field gets established down to 60% in the third year and beyond. Some school districts may experience greater savings.

Soil Biology

One of the most critical factors in the analysis – and the one most difficult to assess - is the availability and viability of microbiology on fields that have been maintained using conventional chemical programs. The microbiology that is essential for a successful natural turf management program can be destroyed or severely compromised by years of chemical applications. In this analysis, we have assumed a moderate level of soil biology as a starting point; the compost topdressing in years 1-3 is part of the rehabilitation process required to restore the soil to its natural, biologically active state.

Reducing Fertilization Costs

Once playing fields have been converted to a natural program and the percentage of organic matter (%OM) has reached the desired level (5.0-7.0), additional significant reductions in fertilization costs can be realized using compost tea and other nutrients (humic acid, fish hydrolysates) applied as topical spray, rather than using granular fertilizers.

The following chart shows the product cost benefits of switching to an organic nutrient spray program, and amortizing the $10-12,000 capital cost for equipment over three years. (Fig. 2)

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[6] Water usage computed using STMA recommended irrigation rate of one inch/week for Junior High football field. Iowa State University recommends 1.75 inches per week for football fields.

[7] Price computed using NUS Consulting International Water Report for 2008 average US water cost per m3 adjusted for inflation.

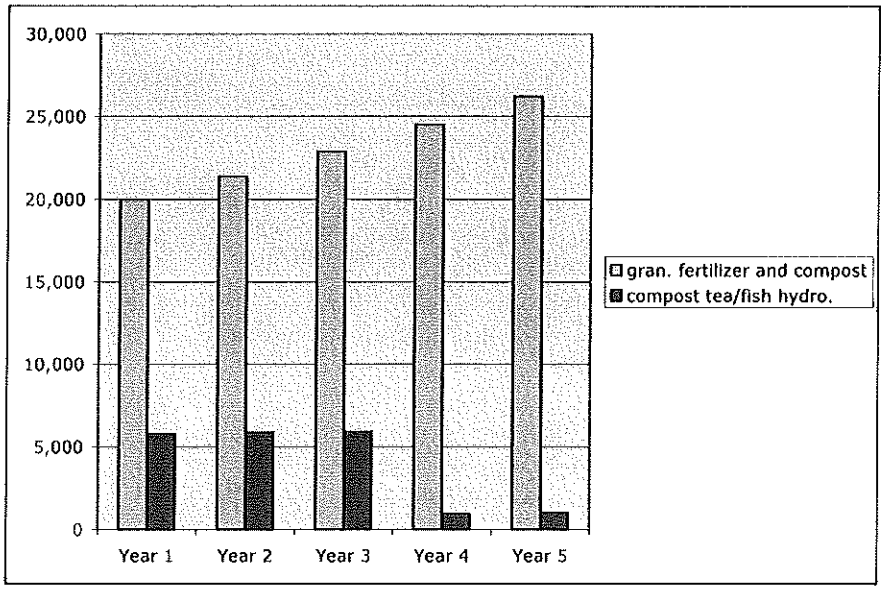

Figure 2: Cost comparison of granular fertilizer and compost compared to spraying compost tea and fish hydrolysates in Marblehead, MA.[8]

Conclusion

This analysis demonstrates that the cost of a natural turf management program is incrementally higher in the first two years, but then decreases significantly as soil biology improves and water requirements diminish. Total expenditures over five years show a cost savings of more than 7% using natural turf management, and once established, annual cost savings of greater than 25% can be realized.

About the authors:

Charles Osborne *is a professional turf consultant, working with municipalities and school districts in the Northeast to help them develop effective natural turf management programs. A professional grower with more than thirty years of experience in greenhouse and turf management, Mr. Osborne is the Chairman of the Town of Marblehead Recreation, Parks, and Forestry Commission where he oversees the management of the Town's school and municipal fields.*

Doug Wood *is the Associate Director of Grassroots Environmental Education, an environmental health non-profit organization which developed the EPA award-winning program, "The Grassroots Healthy Lawn Program." He is also the director and producer of the professional video training series "Natural Turf Pro."*

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[8] *To address concerns over the potential phosphorus content of compost tea (contained in the bodies of microbes) only high-quality vermicompost should be used for tea production. Animal manure teas, popular with farmers for generations, are not suitable for use on lawns or playing fields.*

COMPARISON OF CONVENTIONAL (CHEMICAL) AND NATURAL (ORGANIC) TURF MANAGEMENT PROGRAMS: YEAR ONE

CONVENTIONAL PROGRAM		Year 1 cost prod	Year 1 cost labor	Year 1 total
April	fert/pre-emergent	$250	$95	$345
May	fertilizer	$225	$95	$320
June	grub or insect	$325	$95	$420
June	post-emergent	$90	$150	$240
July	fertilizer	$225	$95	$320
Sep	fertilizer	$225	$95	$320
Nov	fertilizer	$225	$95	$320
June	seed	$700	$150	$850
Sep	seed	$700	$150	$850
aerate	3 times	$0	$375	$375
	irrigation	$3,212	$150	$3,362
	indirect costs			$500
	Total Cost			**$8,222**
NATURAL PROGRAM				
		Year 1 cost prod	Year 1 cost labor	Year 1 total
April	fertilizer	$610	$115	$725
June	fertilizer	$610	$115	$725
June	liquid humate	$120	$100	$270
July	fish/compost tea	$100	$100	$250
Sep	fertilizer	$610	$115	$725
Jun	seed	$700	$150	$850
Sep	seed	$700	$150	$850
	aerate 3x	$0	$375	$375
Jun	topdress	$1,300	$350	$1,650
	irrigation	$3,212	$150	$3,362
	Total Cost			**$9,782**

COMPARISON OF CONVENTIONAL (CHEMICAL) AND NATURAL (ORGANIC) TURF MANAGEMENT PROGRAMS: YEAR TWO

CONVENTIONAL PROGRAM		Year 2	Year 2	Year 2
		cost	cost	total
		prod +7%	labor	
April	fert/pre-emergent	$267	$95	$362
May	fertilizer	$240	$95	$335
June	grub or insect	$347	$95	$335
June	post-emergent	$96	$150	$246
July	fertilizer	$240	$95	$335
Sep	fertilizer	$240	$95	$335
Nov	fertilizer	$240	$95	$335
June	seed	$750	$150	$900
Sep	seed	$750	$150	$900
aerate	3 times	$0	$375	$375
	irrigation	$3,436	$150	$3,586
	indirect costs			$500
	Total Cost			**$8,544**
NATURAL PROGRAM				
		Year 2	Year 2	year 2
		cost	cost	total
		prod+7%	labor	
April	fertilizer	$653	$115	$768
June	fertilizer	$653	$115	$768
June	liquid humate	$128	$100	$228
July	fish/compost tea	$107	$100	$207
Sep	fertilizer	$653	$115	$768
Jun	seed	$750	$150	$900
Sep	seed	$750	$150	$900
	aerate 3x	$0	$375	$375
Jun	topdress	$1,390	$350	$1,740
	irrigation	$2,749	$150	$2,899
	Total Cost			**$9,553**

COMPARISON OF CONVENTIONAL (CHEMICAL) AND NATURAL (ORGANIC) TURF MANAGEMENT PROGRAMS: YEAR THREE

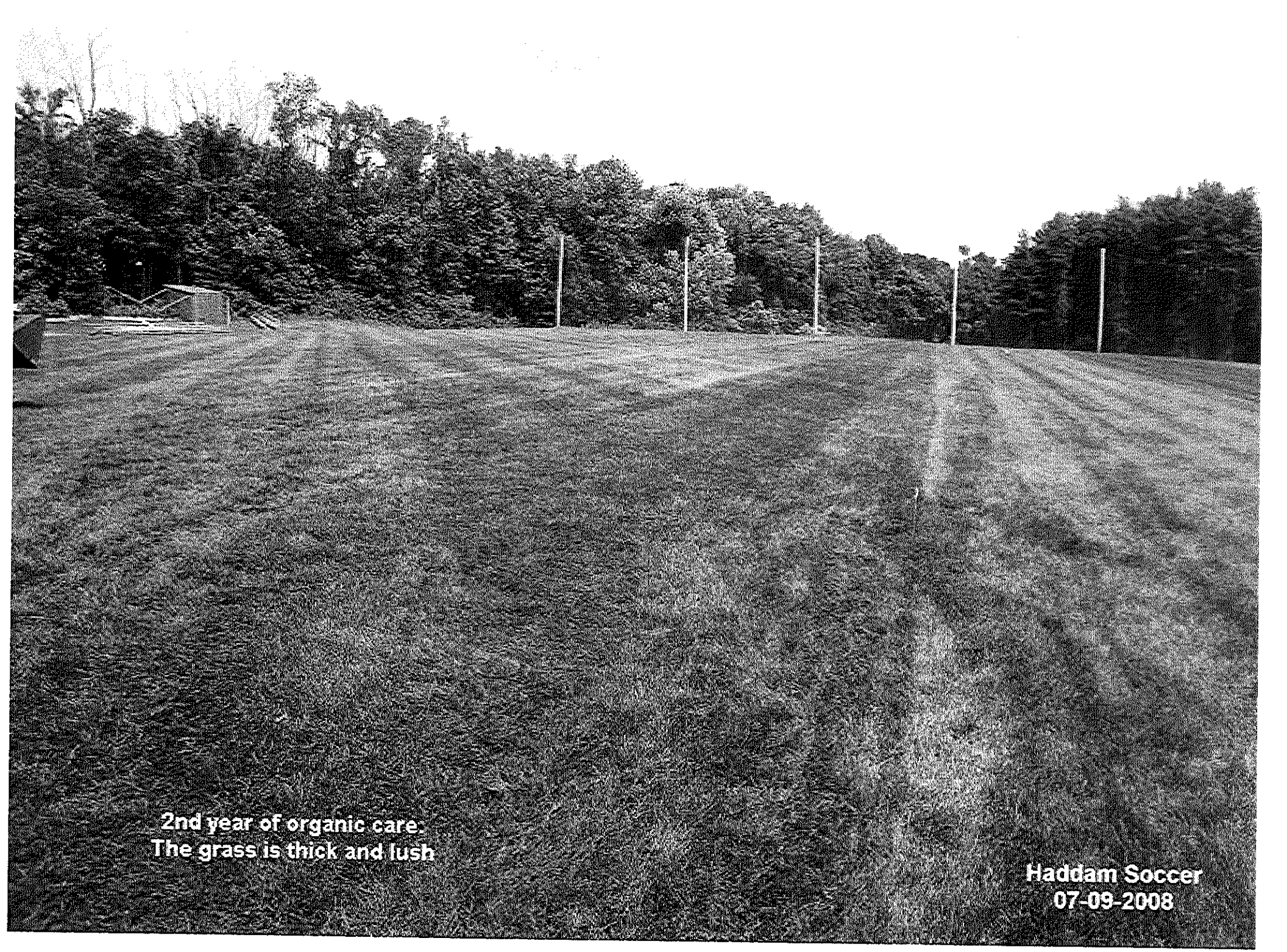
CONVENTIONAL PROGRAM		Year 3	Year 3	Year 3
		cost	cost	total
		prod +7%	labor	
April	fert/pre-emergent	$285	$95	$380
May	fertilizer	$256	$95	$351
June	grub or insect	$371	$95	$467
June	post-emergent	$103	$150	$253
July	fertilizer	$256	$95	$351
Sep	fertilizer	$256	$95	$351
Nov	fertilizer	$256	$95	$351
June	seed	$775	$150	$925
Sep	seed	$775	$150	$925
aerate	3 times	$0	$375	$375
	irrigation	$3,676	$150	$3,826
	indirect costs			$500
	Total Cost			**$9,055**
NATURAL PROGRAM				
		Year 3	Year 3	Year 3
		cost	cost	total
		prod +7%	labor	
April	fertilizer	$699	$115	$814
June	fertilizer	$0	$0	$0
June	liquid humate	$137	$100	$237
July	fish/compost tea	$114	$100	$214
Sep	fertilizer	$699	$115	$814
Jun	seed	$775	$150	$925
Sep	seed	$775	$150	$925
	aerate 3x	$0	$375	$375
Jun	topdress	$1,487	$350	$1,837
	irrigation	$2,206	$150	$2,356
	Total Cost			**$8,497**

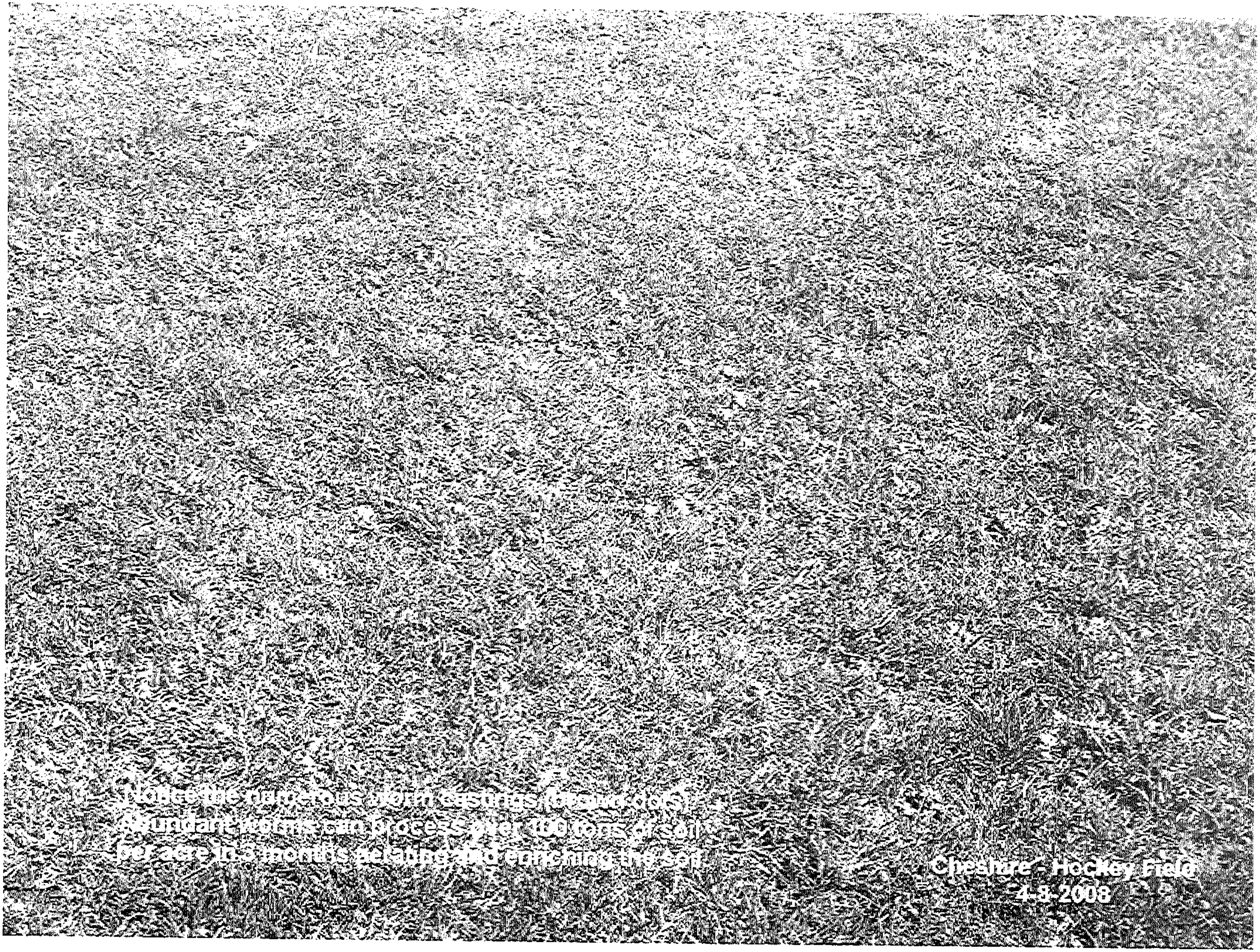
COMPARISON OF CONVENTIONAL (CHEMICAL) AND NATURAL (ORGANIC) TURF MANAGEMENT PROGRAMS: YEAR FOUR

CONVENTIONAL PROGRAM		Year 4	Year 4	Year 4
		cost	cost	total
		prod +7%	labor	
April	fert/pre-emergent	$305	$115	$420
May	fertilizer	$274	$115	$389
June	grub or insect	$416	$115	$531
June	post-emer	$110	$170	$280
July	fertilizer	$274	$115	$389
Sep	fertilizer	$274	$115	$389
Nov	fertilizer	$274	$115	$389
June	seed	$800	$170	$970
Sep	seed	$800	$170	$970
aerate	3 times	$0	$425	$425
	irrigation	$3,933	$170	$4,103
	indirect costs			$500
	Total Cost			**$9,755**
NATURAL PROGRAM				
		Year 4	Year 4	Year 4
		cost	labor	total
		prod +7%		
April	fertilizer	$0	$0	$0
June	fertilizer	$0	$0	$0
June	liquid humate	$150	$120	$270
July	fish/compost tea	$500	$720	$1,220
Sep	fertilizer	$748	$135	$883
Jun	seed	$800	$170	$970
Sep	seed	$800	$170	$970
	aerate 3x	$0	$425	$425
Jun	topdress	$0	$0	$0
	irrigation	$2,360	$170	$2,530
	Total Cost			**$7,268**

COMPARISON OF CONVENTIONAL (CHEMICAL) AND NATURAL (ORGANIC) TURF MANAGEMENT PROGRAMS: YEAR FIVE

CONVENTIONAL PROGRAM		Year 5	Year 5	Year 5
		Cost	cost	total
		prod + 7%	labor	
April	fert/pre-emergent	$326	$115	$441
May	fertilizer	$294	$115	$409
June	grub or insect	$445	$115	$560
June	post-emergent	$117	$170	$287
July	fertilizer	$294	$115	$409
Sep	fertilizer	$294	$115	$409
Nov	fertilizer	$294	$115	$409
June	seed	$856	$170	$1,026
Sep	seed	$856	$170	$1,026
aerate	3 times	$0	$425	$425
	irrigation	$4,208	$170	$4,378
	indirect costs			$500
	Total Cost			**$10,279**
NATURAL PROGRAM				
		Year 5	Year 5	Year 5
		cost	labor	total
		prod + 7%		
April	fertilizer	$0	$0	$0
June	fertilizer	$0	$0	$0
June	liquid humate	$160	$120	$280
July	fish/compost tea	$535	$720	$1,255
Sep	fertilizer	$800	$135	$935
Jun	seed	$856	$170	$1,026
Sep	seed	$856	$170	$1,026
	aerate 3x	$0	$425	$425
Jun	topdress	$0	$0	$0
	irrigation	$2,525	$170	$2,695
	Total Cost			**$7,642**


2nd year of organic care.
The grass is thick and lush
Haddam Soccer
07-09-2008


Notice the numerous worm castings (brown dots).
Abundant worms can process over 100 tons of soil
per acre in 3 months aerating and enriching the soil
Cheshire - Hockey Field
4-8-2008