

*Too Close for Comfort: Pesticide Use
Near Five Santa Barbara County Schools.*



*The Central Coast Environmental Health Project (CCEHP)
January, 2004*

INTRODUCTION

Introduction

Mild year-round temperatures, fertile soils, and a skilled workforce combine to produce a thriving Santa Barbara County agricultural industry. In 2002, 710,293 acres were in production, offering everything from vegetables and fruits, to livestock and nursery crops. Agriculture continues to be the county's leading industry, with a 2002 gross production value of \$775, 051,152. This is a \$65.9 million (9.3%) increase in gross value from 2001.¹ Agriculture is an essential part of our Central Coast economy, providing food, jobs and income to surrounding communities.

But along with the benefits of agriculture come associated costs. In 2002, commercial agriculture in Santa Barbara County reported the use of 3,349,920 pounds of toxic pesticides.² These include chemicals known to cause cancer, reproductive harm, nervous system disorders, and aquatic toxicity. Not only do these chemicals pose a threat to the natural environment, but they pose a significant risk to people living, working or going to school near agricultural operations. Children are especially susceptible to the dangers posed by pesticides, due to their small sizes, the nature of their developing bodies, and their everyday habits.

Many local schools are located immediately adjacent to large scale agricultural operations, posing a direct pesticide exposure threat to children. In 1999, Cuyama Elementary School was evacuated as a result of a pesticide drift incident involving the highly volatile and toxic pesticide, metam sodium. In this incident, staff members and children developed symptoms of pesticide exposure after the chemical was applied to a carrot field, forcing the closure of the school. In 2000, another pesticide, Lorsban, drifted from a neighboring orchard over Mound Elementary School in Ventura County. Again, children and staff exhibited symptoms of pesticide exposure, and school officials evacuated and closed the school.

As growth pressures increase throughout Santa Barbara County, the potential for pesticide exposure will also increase, with homes, shopping centers and schools being built on or near traditional agricultural lands.

This report by the Central Coast Environmental Health Project (CCEHP), a project of the Environmental Defense Center, analyzes pesticide use around five schools that stand to be the most affected by pesticide use in Santa Barbara County. Indeed, the five schools identified within this report are largely surrounded by agricultural operations, a familiar occurrence on the South Central Coast. This does not necessarily mean that these five schools are the most affected by pesticide use, since many variables are responsible for determining actual exposure. However, due to their close proximity to agricultural lands, it is reasonable to conclude that these schools, and the children who attend them, might be exposed to significant amounts of agricultural pesticides.

¹ *Santa Barbara County Agricultural Production Report, 2002*

² *California Department of Pesticide Regulation, 2002; <http://www.cdpr.ca.gov/docs/pur/purmain.htm>*

This report was compiled between June 2003 and January 2004. CCEHP staff and volunteers worked with the Santa Barbara County Agricultural Commissioner's office to identify schools, pesticide use records and trends, as well as with the State Department of Pesticide Regulation (DPR) to sort and compile data in order to produce this report. A *Glossary of Terms* can be found on page one to help guide readers through the report. We hope that the findings and recommendations included within this document encourage school districts, local growers/ranchers, and elected leaders to establish protocols and/or policies that minimize the risk of exposure to children in our agricultural communities.

The Central Coast Environmental Health Project's (CCEHP) mission is to raise awareness about health risks posed by pesticide exposure while decreasing our reliance on pesticides through education and advocacy. Please visit www.ccehp.org to find out more. Please direct questions or comments about this report to (805) 963-1622 ext. 102.

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TABLE OF CONTENTS

Table of Contents

I.	<u>Executive Summary</u>	8-10
II.	<u>Santa Barbara County Schools</u>	
	-Introduction.....	12
	a. Adam School	14-18
	b. Bonita School	20-24
	c. Clarence Ruth Elementary	26-30
	d. McKenzie Jr. High	32-36
	e. Miguelito Elementary	38-42
III.	<u>Recommendations</u>	44-46
IV.	<u>Glossary of Terms</u>	48-51
IV.	<u>Attachments</u>	
	a. Emergency Procedures	53-55
	b. Asthma Article	56-57

PART 1-
EXECUTIVE SUMMARY

Part 1- Executive Summary

With over 3 million pounds of agricultural pesticides being applied to Santa Barbara County's agricultural lands in 2002, concerns exist about how some of the chemicals might affect human health. These concerns are especially relevant when considering children's increased susceptibility to environmental toxins.

A 1997 study by Dr. Elizabeth Guillette of the University of Arizona found that school aged children exposed to pesticides suffered from decreased memory, impaired motor skills function, and decreased stamina, while showing higher rates of acute illness, compared to children who were not exposed.³ As noted in *Failing Health: Pesticide Use in California Schools*, children are more susceptible to the risks posed by pesticide exposure due to the developing nature of their bodies. Organs such as the kidneys, liver and lungs, designed to filter out toxins, are still in development and are more vulnerable to the effects of contaminants. The nervous and reproductive systems, as well as the brain, are also in development and can be negatively affected by early exposure. Lastly, children eat, drink and breathe more for their body weights than adults do, making them disproportionately affected by pesticides found in air, food, or water.⁴

For these reasons, the health of children attending schools near areas of high pesticide use might be affected by any number of chemicals. Unfortunately, chemicals currently on the market are reviewed and tested *individually* by the Environmental Protection Agency (EPA) for potential health impacts prior to their registration for public or private use. As researched by Dr. Warren Porter, this process ignores the *combined* effects of two or more chemicals being applied together, and the possible increased health risks of exposure to such combinations.⁵

Finally, under the Food Quality Protection Act (FQPA) of 1996, pesticides currently in use must be reassessed for potential impacts to sensitive individuals such as children. According to the Federal Environmental Protection Agency (EPA), of the 1,150 chemicals (categorized into 612 "cases") that are currently in use, 403 cases (66%), have been completed (reviewed), with the rest to be completed within several years⁶. As a result of this process, the use of several common pesticides has been cancelled due to toxicity effects. *Dursban* is but one example of a pesticide product whose use has recently been cancelled for household uses due to its potential for harming children⁷.

Methodology

This report looks at five schools in the northern region of Santa Barbara County: Adam Elementary, Bonita Elementary, Clarence Ruth, Kermit McKenzie Junior High and

³ *Environmental Health Perspectives*, vol. 106: Number 6; June, 1998.

⁴ *Failing Health: Pesticide Use in California Schools*, California Public Interest Research Group, pp6, 1998.

⁵ *Journal of Toxicology and Industrial Health*; vol. 15: pp133-150, 1999.

⁶ *Federal Environmental Protection Agency, 2004; www.epa.gov/oppsrrd1/Rainbow98rainbo.pdf, pp61, 64*

⁷ *Hawaii Landscape, Sept/Oct 2000. Vol. 4, No. 5, p. 7.*

Miguelito Elementary. With the assistance of the Santa Barbara County Agricultural Commissioner, CCEHP chose these schools based on their proximity to agricultural lands. Pesticide use was determined by drawing a concentric circle with a one-mile radius around each school. In our process, square-mile *ranges* (one square-mile blocks in a grid formation) of land adjacent to the school were identified and highlighted. If the square-mile range fell within the sweep of the circle encompassing the school, the pesticide use within that range was counted. When the circle overlapped with the boundary of a neighboring range, the pesticides used within that range were also factored in. Each school encompassed between six to nine square-mile ranges. Although this method makes it difficult to determine exact pesticide use within a given area, it is the most accurate means of cataloguing the amount of pesticides used near a given school (see Section 3 for overhead maps of schools). Despite using the data of between six and nine square-mile ranges, pesticide use indicated in this report generally occurs within 1.5 miles of the schools, in any direction.

Findings

The results of our research found the following total pesticide use within approximately 1.5 miles of each of the five selected schools:

- **Bonita School- 183,372 lbs.**
- **Adam School- 168,242 lbs.**
- **Kermit McKenzie Junior High School- 130,554 lbs.**
- **Clarence Ruth Elementary School- 26,024 lbs.**
- **Miguelito Elementary School- 15,855 lbs.**

The pesticides used around each of these schools include known or suspected carcinogens, known or suspected reproductive or developmental toxins, endocrine disruptors, cholinesterase inhibitors, and pesticides that cause acute aquatic toxicity.

Based on these findings, Bonita, Adam, and McKenzie are located adjacent to the greatest amounts (in pounds) of pesticides from surrounding agricultural lands. Bonita and McKenzie are completely surrounded by agriculture, accounting for these larger numbers. Adam is surrounded in part by agriculture, but also by residential and commercial development. Although surrounded by less agricultural acreage, Adam is in close proximity to strawberries, a pesticide intensive crop requiring heavy pesticide inputs in the form of fumigants, especially methyl bromide. As an example, three of the four top pesticides used around Adam school were fumigants, totaling approximately 83,000 pounds, all used on strawberries.

Ruth and Miguelito, in geographically unique situations, faced much less pesticide use. Both schools are surrounded by development to the east and mountains to the south. This inherently reduces the total amount of agricultural pesticides used around the schools. Pesticide use around Ruth occurs primarily on the western side, and for Miguelito, on the northwest. This, along with the fact that crops grown around these schools are generally less pesticide intensive and include little if any strawberry production, result in the lower total numbers seen in our findings.

The figures in this report are the latest available, and have been gleaned from data collected by the California Department of Pesticide Regulation (DPR) for 2002. When collecting data from County Agricultural Commissioners, DPR checks it for potential errors before releasing findings to the public. At the time this report was compiled, 2001 was the latest year available with data that had been checked for errors by DPR. Because the authors of this report wanted to use the most recent data available (2002), we have based our findings in this report from data that had not yet been reviewed for potential errors by DPR. As the error rates in the past have averaged 1%, however, CCEHP decided that moving forward with more recent 2002 data would reflect a more accurate picture of recent pesticide use.

Recommendations

In order to avoid exposing children to pesticides while at school, CCEHP recommends the implementation of various steps by schools and school districts, parents, agricultural operators, and elected officials. These steps will reduce the threat of exposure to children while providing a safer learning environment.

Recommendations include the following:

Schools

- Establishment of Emergency Plans for Pesticide Exposure Incidents.
- Implementation of Integrated Pest Management (IPM) policies.
- Selection of a School Liaison to communicate with agricultural neighbors.
- Coordination of school schedules with agricultural neighbors.
- Collaborative projects between school and neighboring farms.

Parents

- Parents and parent groups such as PTA's should build working relationships with boards and administrations of local School Districts to work cooperatively on implementing policies that address pesticide risks.
- Parents should lobby school officials and members of City Council and County Board of Supervisors to avoid building schools on or near agricultural lands.

Farms

- Commitment to "no spray" policies at certain times or in certain areas.
- Implementation of "no spray" buffer zones around schools.
- Establishment of IPM policies and Best Management Practices (BMPs).
- Selection of a Farm Liaison to communicate with neighboring school.
- Notification to school of plans to spray pesticides.

Elected Officials

- Policies that protect agricultural lands.
- Zone new schools in appropriate areas.

PART 2-
SANTA BARBARA COUNTY
SCHOOLS

Part 2- Santa Barbara County Schools- **Introduction**

This section describes pesticide use around the five schools selected for this report: **Adam Elementary, Bonita Elementary, Clarence Ruth Elementary, Kermit McKenzie Junior High, and Miguelito Elementary.**

For each school, CCEHP has included an introductory summary of important information including school size, address, demographics, contact information and a list of the top ten pesticides used near each school. Following the introductory summary, an aerial photograph is included indicating the location of the school in relation to surrounding uses. Finally, the top ten most frequently used pesticides are listed in detail, providing information about pesticide toxicity, health effects, crops the pesticide was used on, and total amount used.

For information about all the pesticides used within approximately 1.5 miles of the school, readers should refer to the Excel spread sheets included as attachments 5-10 in this report.

ADAM ELEMENTARY

Adam Elementary School

Address: 500 West Windsor, Santa Maria, 93458

Phone: (805) 361-6700

Fax: (805) 352-9104

Grades: K-6, year round school

Principle: Claudia Mackey

Enrollment: 976

District: Santa Maria-Bonita

Demographics:

90.7% Hispanic
5.9% White
2% Filipino
0.5% Asian
0.5% Black
0.3% American Indian

In 2002, the agricultural lands surrounding Adam School applied a total of **168,242 lbs.** of pesticides. These were applied to various crops including: Bok Choy Loose Leaf, Broccoli, Cabbage, Cauliflower, Celery, Kale, Kappa Cabbage (tight head), Lettuce (head), Lettuce (leaf), Peas, Squash, Strawberries and for Vertebrate Control.

The top ten pesticides used around Adam School are listed below, including total pounds for each pesticide (2002):

PRODUCT NAME	LBS.
INLINE	70,082
50-50	9,000
NO FOAM B	8,592
75-25	4,800
RED-TOP DUSTING SULFUR	4,750
SUCCESS	3,935
LORSBAN 15G GRANULAR INSECTICIDE	3,845
GOWAN MALATHION 8	3,784
METASYSTOX-R SPRAY CONCENTRATE	3,548
GOAL 1.6E HERBICIDE	3,030

TOP TEN PESTICIDES, TOTAL POUNDS: **115,366 LBS. (69% total)**

The following data is for the ten most commonly used pesticides, listed in order of decreasing pounds applied, within approximately 1.5 miles (see *Executive Summary: Methodology*) of **Adam School** in 2002. Pounds are listed for *total pesticide product applied*, not strictly active ingredients. All information found below was taken from the Department of Pesticide Regulation (www.cdpr.ca.gov/docs/label/prodnam.htm) and/or Pesticide Action Network (www.pesticideinfo.org/Index.html) websites, unless otherwise noted.

INLINE

Product Registration Status: Active
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: Yes
Pounds Used (2002): **70,081**

Inline is composed of the following *active ingredients*:

60.8% 1,3-dichloropropene (Telone)
33.3% Chloropicrin

-**1,3-dichloropropene** is acutely toxic, a known/probable carcinogen, and possesses moderate acute aquatic toxicity.

-**Chloropicrin** is acutely toxic and possesses high acute aquatic toxicity.

Inline is used on the following commodities surrounding Adam school:

-Strawberries

50-50

Product Registration Status: Active
Formulation: Pressurized Gas
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: Yes
Pounds Used (2002): **9,000**

50-50 is composed of the following *active ingredients*:

50.0% Methyl bromide
50.0% Chloropicrin

-**Methyl bromide** is acutely toxic, a developmental toxin, possesses moderate acute aquatic toxicity, and is known to deplete the Earth's protective ozone layer.

-**Chloropicrin** is acutely toxic and possesses high acute aquatic toxicity.

50-50 is used on the following commodities surrounding Adam School:

-Strawberries

NO FOAM B

Product Registration Status: Inactive
Formulation: Solution/Liquid
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 8,592

No Foam B is composed of the following *active ingredients* (Ms. Rachel Kubiak, *Department of Pesticide Regulation*, email correspondence Dec. 8, 2003), and is classified as an “adjuvant:”

.17% of SILICONE DEFOAMER (1917)
.4% of EDTA, TETRASODIUM SALT (759)
1% of TETRAPOTASSIUM PYROPHOSPHATE (1918)
1.28% of PHOSPHORIC ACID (871)
1.5% of DIETHYLAMINE SALT OF COCONUT FATTY ACID (1066)
1.98% of ISOPROPYL ALCOHOL (342)
2% of SODIUM XYLENE SULFONATE (909)
2.55% of TRIETHANOLAMINE (1006)
6.5% of DODECYLBENZENE SULFONIC ACID (941)
7.5% of ALPHA-OCTYLPHENYL-OMEGA-HYDROXPOLY(OXYETHYLENE)

No Foam B is used on the following commodities surrounding Adam school:

-Broccoli, Cabbage, Cauliflower, Celery, Lettuce (head), Lettuce (leaf), Strawberries

75-25

Product Registration Status: Active
Formulation: Pressurized Gas
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: Yes
Pounds Used (2002): 4,800

75-25 is composed of the following *active ingredients*:

75.0% Methyl bromide
25.0% Chloropicrin

-**Methyl bromide** is acutely toxic, a developmental toxin, possesses moderate acute aquatic toxicity, and is known to deplete the Earth’s protective ozone layer.

-**Chloropicrin** is acutely toxic and possesses high acute aquatic toxicity.

75-25 is used on the following commodities surrounding Adam school:

-Strawberries

RED-TOP DUSTING SULFUR

Product Registration Status: Active
Formulation: Dust
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No

Pounds Used (2002): 4,750

Red-Top Dusting Sulfur is composed of the following *active ingredients*:

98.0% Sulfur

-**Sulfur** possesses slight acute toxicity.

Red-Top Dusting Sulfur is used on the following commodities surrounding Adam school:

-Peas, Squash, Strawberries

SUCCESS

Product Registration Status: Active
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 0- No signal word
Restricted Use Product: No
Pounds Used (2002): 3,935

Success is composed of the following *active ingredient*:

22.8% Spinosad

-**Spinosad** is slightly acutely toxic. It is not likely to be a carcinogen.

Success is used on the following commodities surrounding Adam school:

-Bok Choy Loose Leaf, Broccoli, Cabbage, Cauliflower, Celery, Kappa Cabbage, Lettuce (head), Lettuce (leaf), Strawberries

LORSBAN 15G GRANULAR INSECTICIDE

Product Registration Status: Active
Formulation: Granular
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 3,845

Lorsban 15G Granular Insecticide is composed of the following *active ingredients*:

15% Chlorpyrifos

-**Chlorpyrifos** is moderately acutely toxic, a cholinesterase inhibitor, a suspected endocrine disruptor, and possesses moderate acute aquatic toxicity.

Lorsban 15G Granular Insecticide is used on the following commodities surrounding Adam school:

-Broccoli, Cauliflower

GOWAN MALATHION 8

Product Registration Status: Active

Formulation: Emulsifiable concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 3,784

Gowan Malathion 8 is composed of the following *active ingredients*:
79.5% Malathion

-**Malathion** is moderately acutely toxic, a possible carcinogen, a cholinesterase inhibitor, a suspected endocrine disruptor, and possesses slight acute aquatic toxicity.

Gowan Malathion 8 is used on the following commodities surrounding Adam school:
-Broccoli, Celery, Lettuce (head), Lettuce (leaf)

METASYSTOX-R SPRAY CONCENTRATE

Product Registration Status: Active
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: Yes
Pounds Used (2002): 3,548

Metasystox-r Spray Concentrate is composed of the following *active ingredients*:
25.0% Oxydemetonmethyl

-**Oxydemetonmethyl** is acutely toxic, a cholinesterase inhibitor, a developmental and/or reproductive toxin, and possesses slight acute aquatic toxicity.

Metasystox-r Spray Concentrate is used on the following commodities surrounding Adam school:
-Broccoli, Cauliflower, Lettuce (head)

GOAL 1.6E HERBICIDE

Product Registration Status: Cancelled
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: No
Pounds Used (2002): 3,030

Goal 1.6E Herbicide is composed of the following *active ingredients*:
19.4% Oxyflourfen

-**Oxyflourfen** possesses slight acute toxicity, and is a possible carcinogen.

Goal 1.6E Herbicide is used on the following commodities surrounding Adam school:
-Broccoli, Cauliflower, Vertebrate Control

BONITA ELEMENTARY

Bonita Elementary School

Address: 2715 West Main Street, Santa Maria 93454

Phone: (805) 361-8280

FAX: (805) 925-1179

Grades: K-6

Principle: Cheryle Paglialonga

Enrollment: 496

District: Santa Maria-Bonita

Demographics:

84.5%	Hispanic
7.2%	White
4.3%	Filipino
1.1%	Asian
1.1%	American Indian
1.1%	Black
0.6%	Pacific Islander

In 2002, the agricultural lands surrounding Bonita School applied a total of **183,372 lbs.** of pesticides. These were applied to various crops including: Bok Choy, Bok Choy Loose Leaf, Broccoli, Cabbage, Cauliflower, Celery, Kale, Kappa Cabbage (tight head), Lettuce (head), Lettuce (leaf), Outdoor transplants (nursery), Outdoor grown transplants/propagation (nursery), Napa Cabbage, Peas, and Strawberries

The top ten pesticides used around Bonita School are listed below, including total pounds for each pesticide (2002):

PRODUCT NAME	LBS.
57-43	21,364
ADMIRE 2 FLOWABLE	15,013
MANEX	12,896
RED-TOP DUSTING SULFUR	12,554
VAPAM HL SOIL FUMIGANT	11,309
LORSBAN 15G GRANULAR INSECTICIDE	10,697
50-50	9,000
GOAL 2XL HERBICIDE	8,004
SUCCESS	5,816
METASYSTOX-R SPRAY CONCENTRATE	5,325

TOP TEN PESTICIDES, TOTAL POUNDS: 111,9768 LBS. (61% total)

The following data is for the ten most commonly used pesticides, listed in order of decreasing pounds applied, within approximately 1.5 miles (see *Executive Summary: Methodology*) of **Bonita School** in 2002. Pounds are listed for *total pesticide product applied*, not strictly active ingredients. All information found below was taken from the Department of Pesticide Regulation (www.cdpr.ca.gov/docs/label/prodnam.htm) and/or Pesticide Action Network (www.pesticideinfo.org/Index.html) websites, unless otherwise noted.

57-43

Product Registration Status: Active
Formulation: Pressurized gas
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: Yes
Pounds Used (2002): 21,364

57-43 is composed of the following *active ingredients*:

57.0% Methyl Bromide
43.0% Chloropicrin

-**Methyl bromide** is acutely toxic, a developmental toxin, possesses moderate acute aquatic toxicity, and is known to deplete the Earth's protective ozone layer.

-**Chloropicrin** is acutely toxic and possesses high acute aquatic toxicity.

57-43 is used on the following commodities surrounding Bonita school:

-Strawberries

ADMIRE 2 FLOWABLE

Product Registration Status: Cancelled
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 15,013

Admire 2 Flowable is composed of the following *active ingredient*:

21.4% Imidacloprid

-**Imidacloprid** possesses moderate acute toxicity.

Admire 2 Flowable is used on the following commodities surrounding Bonita school:

-Bok Choy (loose leaf), Broccoli, Cabbage, Cauliflower, Lettuce (head), Lettuce (leaf), Strawberries

MANEX

Product Registration Status: Active
Formulation: Flowable Concentrate

Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 12,896

Manex is composed of the following *active ingredient*:
37.0% Maneb

-**Maneb** is a known/probable carcinogen, a developmental and/or reproductive toxin, a suspected endocrine disruptor, and possesses slight acute aquatic toxicity.

Manex is used on the following commodities surrounding Bonita school:
-Bok Choy, Lettuce (head), Lettuce (leaf), Outdoor grown transplants/propagation (Nursery), Outdoor transplants (Nursery), Napa Cabbage

RED-TOP DUSTING SULFUR

Product Registration Status: Active
Formulation: Dust
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 12,554

Red-Top Dusting Sulfur is composed of the following *active ingredient*:
-98.0% Sulfur

Sulfur possesses slight acute toxicity.

Red-Top Dusting Sulfur is used on the following commodities surrounding Bonita school:
-Peas

VAPAM HL SOIL FUMIGANT

Product Registration Status: Active
Formulation: Soluble Concentrate
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: No
Pounds Used (2002): 11,309

Vapam HL Soil Fumigant is composed of the following *active ingredient*:
42.0% Metam sodium

-**Metam sodium** is acutely toxic, a known/probable carcinogen, a developmental and/or reproductive toxin, and possesses acute aquatic toxicity.

Vapam HL Soil Fumigant is used on the following commodities surrounding Bonita school:
-Cauliflower, Strawberries

LORSBAN 15G GRANULAR INSECTICIDE

Product Registration Status: Active
Formulation: Granular
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 10,697

Lorsban 15G Granular Insecticide is composed of the following *active ingredient*:
15% Chlorpyrifos

-**Chlorpyrifos** is moderately acutely toxic, a cholinesterase inhibitor, a suspected endocrine disruptor, and possesses moderate acute aquatic toxicity.

Lorsban 15G Granular Insecticide is used on the following commodities surrounding Bonita school:

-Broccoli, Cauliflower

50-50

Product Registration Status: Active
Formulation: Pressurized Gas
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: Yes
Pounds Used (2002): 9,000

50-50 is composed of the following *active ingredients*:

50.0% Methyl bromide

50.0% Chloropicrin

-**Methyl bromide** is acutely toxic, a developmental toxin, possesses moderate acute aquatic toxicity, and is known to deplete the Earth's protective ozone layer.

-**Chloropicrin** is acutely toxic and possesses high acute aquatic toxicity.

50-50 is used on the following commodities surrounding Bonita School:

-Strawberries.

GOAL 2XL HERBICIDE

Product Registration Status: Cancelled
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: No
Pounds Used (2002): 8,004

Goal 2XL Herbicide is composed of the following *active ingredient*:

23.0% Oxyflourfen

-**Oxyflourfen** possesses slight acute toxicity, and is a possible carcinogen.

Goal 2XL is used on the following commodities surrounding Bonita school:

-Broccoli, Cauliflower

SUCCESS

Product Registration Status: Active
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 0- No signal word
Restricted Use Product: No
Pounds Used (2002): 5,816

Success is composed of the following *active ingredient*:

22.8% Spinosad

-**Spinosad** is slightly acutely toxic. It is not likely to be carcinogen.

Success is used on the following commodities surrounding Bonita school:

-Bok Choy, Bok Choy Loose Leaf, Broccoli, Cabbage, Cauliflower, Celery, Kale, Kappa Cab (tight head), Lettuce (head), Lettuce (leaf), Outdoor transplants (Nursery), Outdoor grown transplants/ propagation (Nursery), Napa Cabbage

METASYSTOX-R SPRAY CONCENTRATE

Product Registration Status: Active
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: Yes
Pounds Used (2002): 5,324

Metasystox-r Spray Concentrate is composed of the following *active ingredient*:

25.0% Oxydemetonmethyl

-**Oxydemetonmethyl** is acutely toxic, a cholinesterase inhibitor, a developmental and/or reproductive toxin, and possesses slight acute aquatic toxicity.

Metasystox-r Spray Concentrate is used on the following commodities surrounding Bonita school:

-Broccoli, Cauliflower, Lettuce (head)

CLARENCE RUTH ELEMENTARY

Clarence Ruth Elementary School

Address: 501 North W Street

Phone: (805) 737-0046

FAX: (805) 736-4214

Grades: K-5

Principle: Carl Krugmeier

Enrollment: 656

District: Lompoc Unified

Demographics:

64% Hispanic

20.8% White

9.1% Black

3.8% Asian

2.2% Other

In 2002, the agricultural lands surrounding Ruth School applied a total of **26,024 lbs.** of pesticides. These were applied to various crops including: Beans, Broccoli, Cabbage, Cauliflower, Celery, Fallow Farm Land, Lettuce (head), Outdoor Cut Flowers/Grains (nursery), Uncultivated Agriculture.

The top ten pesticides used around Clarence Ruth Elementary School are listed below, including total pounds for each pesticide (2002):

PRODUCT NAME	LBS.
VAPAM HL SOIL FUMIGANT	3,528
QUEST	2,295
AD-HERE XL	1,475
SUBDUE MAXX MC	1,391
MANEB 75 DF DRY FLOWABLE FUNGICIDE	1,370
GOAL 2XL HERBICIDE	969
ALIETTE WDG FUNGICIDE	831
SERENADE	769
KINETIC	662
GUSTAFSON 42-S THIRAM	583

TOP TEN PESTICIDES, TOTAL POUNDS: **13,3873 LBS. (51% total)**

The following data is for the ten most commonly used pesticides, listed in order of decreasing pounds applied, within approximately 1.5 miles (see *Executive Summary: Methodology*) of **Clarence Ruth School** in 2002. Pounds are listed for *total pesticide product applied*, not strictly active ingredients. All information found below was taken from the Department of Pesticide Regulation (www.cdpr.ca.gov/docs/label/prodnam.htm) and/or Pesticide Action Network (www.pesticideinfo.org/Index.html) websites, unless otherwise noted.

VAPAM HL SOIL FUMIGANT

Product Registration Status: Active
Formulation: Soluble Concentrate
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: No
Pounds Used (2002): 3,528

Vapam HL Soil Fumigant is composed of the following *active ingredient*:
42.0% Metam sodium

-**Metam sodium** is acutely toxic, a known/probable carcinogen, a developmental and/or reproductive toxin, and possesses acute aquatic toxicity.

Vapam HL Soil Fumigant is used on the following commodities surrounding Ruth School:

-Outdoor Cut Flowers/Grains (Nursery)

QUEST

Product Registration Status: Active
Formulation: Aqueous concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 2,295

Quest is composed of the following *active ingredient*:

Quest has no active ingredients or pesticidal properties, and is classified as an “adjuvant (Mr. Ken Everett, Pesticide Use Specialist, *Department of Pesticide Regulation*, email correspondence dated Dec. 8, 2003).”

Quest is used on the following commodities surrounding Ruth School:

-Cauliflower, Celery, Fallow Farm Land, Lettuce (head), Uncultivated Agriculture

AD-HERE XL

Product Registration Status: Active
Formulation: Emulsifiable concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: Not known
Pounds Used (2002): 1,475

Ad-Here XL is composed of the following *active ingredient*:
Not available

Ad-Here XL is used on the following commodities surrounding Ruth School:
-Broccoli, Cauliflower, Lettuce (head)

SUBDUE MAXX MC

Product Registration Status: Active
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 1,391

Subdue Maxx MC is composed of the following *active ingredient*:
21.3% Mefenoxam

-**Mefenoxam** is acutely toxic, and possesses slight acute aquatic toxicity.

Subdue Maxx MC is used on the following commodities surrounding Ruth School:
-Outdoor Cut Flowers/Grains (Nursery)

MANEB 75 DF DRY FLOWABLE FUNGICIDE

Product Registration Status: Active
Formulation: Water dispersable granules
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 1,370

Maneb 75 DF Dry Flowable Fungicide is composed of the following *active ingredient*:
75.0% Maneb

-**Maneb** is a known/probable carcinogen, a developmental and/or reproductive toxin, a suspected endocrine disruptor, and possesses slight acute aquatic toxicity.

Maneb 75 DF Dry Flowable Fungicide is used on the following commodities surrounding Ruth School:
-Lettuce (head)

GOAL 2XL HERBICIDE

Product Registration Status: Cancelled
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: No
Pounds Used (2002): 969

Goal 2XL Herbicide is composed of the following *active ingredient*:
23.0% Oxyflourfen

-**Oxyflourfen** possesses slight acute toxicity, and is a possible carcinogen.

Goal 2XL Herbicide is used on the following commodities surrounding Ruth School:
-Broccoli, Cabbage, Cauliflower

ALIETTE WDG FUNGICIDE

Product Registration Status: Active
Formulation: Water dispersible granules
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): **831**

Aliette WDG Fungicide is composed of the following *active ingredient*:
80% Fosetyl-AI

-**Fosetyl-AI** is acutely toxic.

Aliette WDG Fungicide is used on the following commodities surrounding Ruth School:
-Lettuce (head)

SERENADE

Product Registration Status: Active
Formulation: Wettable Powder
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): **769**

Serenade is composed of the following *active ingredient*:
10.0% QST 713 strain of dried Bacillus subtilis

It has not yet been determined if “**QST 713 strain of dried Bacillus subtilis**” is acutely toxic, a carcinogen, a developmental or reproductive toxin, an endocrine disruptor, or possesses acute aquatic toxicity.

Serenade is used on the following commodities surrounding Ruth School:
-Lettuce (head)

KINETIC

Product Registration Status: Inactive
Formulation: Aqueous concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: Not known

Pounds Used (2002): **662**

Kinetic is composed of the following *active ingredients*:

-Not available

Kinetic is used on the following commodities surrounding Ruth School:

-Cauliflower, Celery, Fallow Farm Land, Uncultivated Ag

GUSTAFSON 42-S THIRAM

Product Registration Status:	Active
Formulation:	Flowable concentrate
Acute Hazard Warning Label:	3- Caution
Restricted Use Product:	No
Pounds Used (2002):	583

Gustafson 42-S Thiram is composed of the following *active ingredient*:

42.0% Thiram

-**Thiram** possesses moderate acute toxicity, is a developmental and/or reproductive toxin, and a suspected endocrine disruptor.

Gustafson 42-S Thiram is used on the following commodities surrounding Ruth School:

-Beans (dried)

McKENZIE JUNIOR HIGH

Kermit McKenzie Junior High School

Address: 4710 West Main Street, PO Box 788, Guadalupe 93434-0788

Phone: (805) 343-1951

FAX: (805) 343-6931

Grades: 6-8th

Principle: Celia Ramos

Enrollment: 407

District: Guadalupe Union

Demographics:

96% Hispanic

3% White

1% Black

0.3% American Indian

0.3% Asian

In 2002, the agricultural lands surrounding Kermit McKenzie Junior High School applied a total of **130,554 lbs.** of pesticides. These were applied to various crops including: Bok Choy, Bok Choy Loose Leaf, Broccoli, Cabbage, Cauliflower, Celery, Cilantro, Kappa Cabbage (tight head), Lettuce (head), Lettuce (leaf), Outdoor transplants (nursery), Napa Cabbage, Peas, and Spinach.

The top ten pesticides used around Kermit McKenzie Junior High School are listed below, including total pounds for each pesticide (2002):

PRODUCT NAME	LBS.
LORSBAN 15G GRANULAR INSECTICIDE	13,264
ADMIRE 2 FLOWABLE	11,828
GOAL 2XL HERBICIDE	10,280
MANEX	9,690
METASYSTOX-R SPRAY CONCENTRATE	5,868
RED-TOP DUSTING SULFUR	5,700
MANEB 75 DF DRY FLOWABLE FUNGICIDE	4,987
GOWAN DIAZINON 14G	4,572
NO FOAM B	4,383
SUCCESS	4,049

TOP TEN PESTICIDES, TOTAL POUNDS: **74,621 LBS. (57% total)**

The following data is for the ten most commonly used pesticides, listed in order of decreasing pounds applied, within approximately 1.5 miles (see *Executive Summary: Methodology*) of **Kermit McKenzie Junior High School** in 2002. Pounds are listed for *total pesticide product applied*, not strictly active ingredients. All information found below was taken from the Department of Pesticide Regulation (www.cdpr.ca.gov/docs/label/prodnam.htm) and/or Pesticide Action Network (www.pesticideinfo.org/Index.html) websites, unless otherwise noted.

LORSBAN 15G GRANULAR INSECTICIDE

Product Registration Status: Active
Formulation: Granular
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 13,264

Lorsban 15G Granular Insecticide is composed of the following *active ingredient*:
15% Chlorpyrifos

-**Chlorpyrifos** is moderately acutely toxic, a cholinesterase inhibitor, a suspected endocrine disruptor, and possesses moderate acute aquatic toxicity.

Lorsban 15G Granular Insecticide is used on the following commodities surrounding McKenzie school:

-Bok Choy (loose leaf), Broccoli, Cauliflower, Kappa Cabbage

ADMIRE 2 FLOWABLE

Product Registration Status: Cancelled
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 11,828

Admire 2 Flowable is composed of the following *active ingredient*:
21.4% Imidacloprid

-**Imidacloprid** possesses moderate acute toxicity.

Admire 2 Flowable is used on the following commodities surrounding McKenzie school:

-Bok Choy, Bok Choy (loose leaf), Broccoli, Cauliflower, Lettuce (head), Lettuce (leaf), Napa Cabbage, Napa Cabbage (tight head), Spinach

GOAL 2XL HERBICIDE

Product Registration Status: Cancelled
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning

Restricted Use Product: No
Pounds Used (2002): 10,280

Goal 2XL Herbicide is composed of the following *active ingredient*:
23.0% Oxyflourfen

-**Oxyflourfen** possesses slight acute toxicity, and is a possible carcinogen.

Goal 2XL is used on the following commodities surrounding McKenzie school:
-Broccoli, Cabbage, Cauliflower

MANEX

Product Registration Status: Active
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 9,690

Manex is composed of the following *active ingredient*:
37.0% Maneb

-**Maneb** is a known/probable carcinogen, a developmental and/or reproductive toxin, a suspected endocrine disruptor, and possesses slight acute aquatic toxicity.

Manex is used on the following commodities surrounding McKenzie school:
-Bok Choy (loose leaf), Broccoli, Kappa cabbage (tight head), Lettuce (head), Lettuce (leaf), Outdoor transplants (Nursery)

METASYSTOX-R SPRAY CONCENTRATE

Product Registration Status: Active
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: Yes
Pounds Used (2002): 5,868

Metasystox-r Spray Concentrate is composed of the following *active ingredient*:
25.0% Oxydemetonmethyl

-**Oxydemetonmethyl** is acutely toxic, a cholinesterase inhibitor, a developmental and/or reproductive toxin, and possesses slight acute aquatic toxicity.

Metasystox-r Spray Concentrate is used on the following commodities surrounding McKenzie school:
-Broccoli, Cauliflower, Lettuce (head), Napa Cabbage

RED-TOP DUSTING SULFUR

Product Registration Status:	Active
Formulation:	Dust
Acute Hazard Warning Label:	3- Caution
Restricted Use Product:	No
Pounds Used (2002):	5,700

Red-Top Dusting Sulfur is composed of the following *active ingredient*:
98.0% Sulfur

-**Sulfur** possesses slight acute toxicity.

Red-Top Dusting Sulfur is used on the following commodities surrounding McKenzie school:

-Peas

MANEB 75 DF DRY FLOWABLE FUNGICIDE

Product Registration Status:	Active
Formulation:	Water dispersable granules
Acute Hazard Warning Label:	3- Caution
Restricted Use Product:	No
Pounds Used (2002):	4,897

Maneb 75 DF Dry Flowable Fungicide is composed of the following *active ingredient*:
75.0% Maneb

-**Maneb** is a known/probable carcinogen, a developmental and/or reproductive toxin, a suspected endocrine disruptor, and possesses slight acute aquatic toxicity.

Maneb 75 DF Dry Flowable Fungicide is used on the following commodities surrounding McKenzie school:

-Broccoli, Lettuce (head), Lettuce (leaf), Napa Cabbage

GOWAN DIAZINON 14G

Product Registration Status:	Active
Formulation:	Granular
Acute Hazard Warning Label:	3- Caution
Restricted Use Product:	Yes
Pounds Used (2002):	4,572

Gowan Diazinon 14G is composed of the following *active ingredient*:
14.3% Diazinon

-**Diazinon** possesses moderate acute toxicity, is a cholinesterase inhibitor, a developmental and/or reproductive toxin, and possesses moderate acute aquatic toxicity.

Gowan Diazinon 14G is used on the following commodities surrounding McKenzie - school:

-Broccoli, Cauliflower, Celery, Lettuce (head)

NO FOAM B

Product Registration Status: Inactive
Formulation: Solution/Liquid
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): **4,383**

No Foam B is composed of the following *active ingredient* (Ms. Rachel Kubiak, *Department of Pesticide Regulation*, email correspondence Dec. 8, 2003):

No Foam B is classified as an adjuvant. Active ingredients include:

- .17% of SILICONE DEFOAMER (1917)
- .4% of EDTA, TETRASODIUM SALT (759)
- 1% of TETRAPOTASSIUM PYROPHOSPHATE (1918)
- 1.28% of PHOSPHORIC ACID (871)
- 1.5% of DIETHYLAMINE SALT OF COCONUT FATTY ACID (1066)
- 1.98% of ISOPROPYL ALCOHOL (342)
- 2% of SODIUM XYLENE SULFONATE (909)
- 2.55% of TRIETHANOLAMINE (1006)
- 6.5% of DODECYLBENZENE SULFONIC ACID (941)
- 7.5% of ALPHA-OCTYLPHENYL-OMEGA-HYDROXPOLY(OXYETHYLENE)

No Foam B is used on the following commodities surrounding McKenzie school:

-Broccoli, Cauliflower, Lettuce (head), Lettuce (leaf)

SUCCESS

Product Registration Status: Active
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 0- No signal word
Restricted Use Product: No
Pounds Used (2002): **4,049**

Success is composed of the following *active ingredient*:

22.8% Spinosad

-**Spinosad** is slightly acutely toxic. It is not likely to be a carcinogen.

Success is used on the following commodities surrounding McKenzie school:

-Bok Choy, Bok Choy (loose leaf), Broccoli, Cauliflower, Celery, Cilantro, Kappa Cabbage (tight head), Lettuce (leaf), Outdoor transplants (Nursery), Napa Cabbage, Spinach

MIGUELITO ELEMENTARY

Miguelito Elementary School

Address: 1600 West Olive Avenue, PO Box 8000, Lompoc, CA 93438-8000

Phone: (805) 735-8327

FAX: (805) 735-4316

Grades: K-5

Principle: Diane Burton

Enrollment: 558

District: Lompoc Unified

Demographics:

51.2%	White
37.1%	Hispanic
5.6%	Black
2.9%	Asian
1.2%	American Indian
1.2%	Pacific Islander
0.8%	Filipino

In 2002, the agricultural lands surrounding Miguelito Elementary School applied a total of **15,855 lbs.** of pesticides. These were applied to various crops including: Cauliflower, Celery, Lettuce (head), Greenhouse Grown Transplants/Propagation (nursery), Outdoor flowers (nursery), Uncultivated Agriculture

The top ten pesticides used around Miguelito Elementary School are listed below, including total pounds for each pesticide (2002):

PRODUCT NAME	LBS.
ADMIRE 2 FLOWABLE	5,656
VAPAM HL SOIL FUMIGANT	3,528
SERENADE	770
MANEB 75 DF DRY FLOWABLE FUNGICIDE	634
QUEST	407
KERB 50-W IN WATER SOLUBLE POUCHES	368
DIMETHOATE 4E	345
HELENA INDUCE	272
SERENADE BIOFUNGICIDE WETTABLE POWDER	261
VALENT ORTHENE 75 S SOLUBLE POWDER	198

TOP TEN PESTICIDES, TOTAL POUNDS: **12,439 LBS. (79% total)**

The following data is for the ten most commonly used pesticides, listed in order of decreasing pounds applied, within approximately 1.5 miles (see *Executive Summary: Methodology*) of **Miguelito School** in 2002. Pounds are listed for *total pesticide product applied*, not strictly active ingredients. All information found below was taken from the Department of Pesticide Regulation (www.cdpr.ca.gov/docs/label/prodnam.htm) and/or Pesticide Action Network (www.pesticideinfo.org/Index.html) websites, unless otherwise noted.

ADMIRE 2 FLOWABLE

Product Registration Status: Cancelled
Formulation: Flowable Concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 5,656

Admire 2 Flowable is composed of the following *active ingredient*:
21.4% Imidacloprid

-**Imidacloprid** possesses moderate acute toxicity.

Admire 2 Flowable is used on the following commodities surrounding Miguelito school:
-Lettuce (head)

VAPAM HL SOIL FUMIGANT

Product Registration Status: Active
Formulation: Soluble Concentrate
Acute Hazard Warning Label: 1- Danger
Restricted Use Product: No
Pounds Used (2002): 3,528

Vapam HL Soil Fumigant is composed of the following *active ingredient*:
42.0% Metam sodium

-**Metam sodium** is acutely toxic, a known/probable carcinogen, a developmental and/or reproductive toxin, and possesses acute aquatic toxicity.

Vapam HL Soil Fumigant is used on the following commodities surrounding Miguelito School:
-Outdoor flowers (Nursery)

SERENADE

Product Registration Status: Active
Formulation: Wettable Powder
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 770

Serenade is composed of the following *active ingredient*:

10.0% QST 713 strain of dried Bacillus subtilis

It has not yet been determined if “QST 713 strain of dried Bacillus subtilis” is acutely toxic, a carcinogen, a developmental or reproductive toxin, an endocrine disruptor, or possesses acute aquatic toxicity.

Serenade is used on the following commodities surrounding Miguelito School:

-Lettuce (head)

MANEB 75 DF DRY FLOWABLE FUNGICIDE

Product Registration Status: Active
Formulation: Water dispersable granules
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 634

Maneb 75 DF Dry Flowable Fungicide is composed of the following *active ingredient*:

75.0% Maneb

-**Maneb** is a known/probable carcinogen, a developmental and/or reproductive toxin, a suspected endocrine disruptor, and possesses slight acute aquatic toxicity.

Maneb 75 DF Dry Flowable Fungicide is used on the following commodities surrounding Miguelito school:

-Lettuce (head)

QUEST

Product Registration Status: Active
Formulation: Aqueous concentrate
Acute Hazard Warning Label: 3- Caution
Restricted Use Product: No
Pounds Used (2002): 407

Quest is composed of the following *active ingredient*:

Quest has no active ingredients or pesticidal properties, and is classified as an “adjuvant (Mr. Ken Everett, Pesticide Use Specialist, *Department of Pesticide Regulation*, email correspondence dated Dec. 8, 2003).”

Quest is used on the following commodities surrounding Miguelito school:

-Cauliflower, Celery, Lettuce (head), Uncultivated Agriculture

KERB 50W HERBICIDE IN WSP

Product Registration Status: Cancelled
Formulation: Wettable Powder

Acute Hazard Warning Label: 3- Caution
Restricted Use Product: Yes
Pounds Used (2002): 368

Kerb 50W Herbicide in WSP is composed of the following *active ingredient*:
51.0% Propyzamide

-**Propyzamide** possesses slight acute toxicity and is a known/probable carcinogen.

Kerb 50W Herbicide in WSP is used on the following commodities surrounding Miguelito school:

-Lettuce (head)

DIMETHOATE 4E

Product Registration Status: Active
Formulation: Emulsifiable Concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: No
Pounds Used (2002): 345

Dimethoate 4E is composed of the following *active ingredient*:
43.5% Dimethoate

-**Dimethoate** is acutely toxic, a possible carcinogen, a cholinesterase inhibitor, a developmental and/or reproductive toxin, and possesses slight acute aquatic toxicity.

Dimethoate 4E is used on the following commodities surrounding Miguelito school:

-Lettuce (head)

HELENA INDUCE

Product Registration Status: Active
Formulation: Emulsifiable concentrate
Acute Hazard Warning Label: 2- Warning
Restricted Use Product: No
Pounds Used (2002): 272

Helena Induce is composed of the following *active ingredient*:

Induce has no active ingredients or pesticidal properties, and is classified as an “adjuvant.” It has a Category 2 warning label due to potential skin and eye irritation (Mr. Ken Everett, Pesticide Use Specialist, *Department of Pesticide Regulation*, in an email correspondence dated Dec. 8, 2003).

Helena Induce is used on the following commodities surrounding Miguelito school:

-Lettuce (head)

SERENADE BIOFUNGICIDE WETTABLE POWDER

Product Registration Status:	Active
Formulation:	Wettable Powder
Acute Hazard Warning Label:	3- Caution
Restricted Use Product:	No
Pounds Used (2002):	261

Serenade is composed of the following *active ingredient*:

10.0% QST 713 strain of dried *Bacillus subtilis*

It has not yet been determined if “**QST 713 strain of dried *Bacillus subtilis***” is acutely toxic, a carcinogen, a developmental or reproductive toxin, an endocrine disruptor, or possesses acute aquatic toxicity.

Serenade Biofungicide Wettable Powder is used on the following commodities surrounding Miguelito School:

-Lettuce (head)

VALENT ORTHENE 75S SOLUBLE POWDER

Product Registration Status:	Active
Formulation:	Soluble concentrate
Acute Hazard Warning Label:	3- Caution
Restricted Use Product:	No
Pounds Used (2002):	198

Valent Orthene 75S Soluble Powder is composed of the following *active ingredient*:

75.0% Acephate

-**Acephate** possesses slight acute toxicity, is a possible carcinogen, and a cholinesterase inhibitor.

Valent Orthene 75S Soluble Powder is used on the following commodities surrounding Miguelito School:

-Celery, Lettuce (head), Greenhouse Grown Transplants/Propagation (Nursery)

PART 3-
RECOMMENDATIONS

Part 3- Recommendations

In order to develop better communication between school districts, parents, elected officials and agricultural operators, the CCEHP recommends the following steps to provide a safer learning environment for children enrolled in rural schools. CCEHP believes that adoption of these recommendations will better protect children from risks posed by agricultural operations.

Schools⁸-

Emergency Plan/Protocol – Acknowledging that many schools and agricultural lands share common boundaries, schools in agricultural settings should make it a priority to develop and implement procedures or protocols to follow in case a pesticide drift incident should occur. Although there are local, state and federal laws in place to help prevent or reduce the possibility of drift incidents around schools, drift can still occur, resulting in students and staff being exposed.

See Appendix 1 for sample School Emergency Procedures developed by the Ag Futures Alliance in Ventura County.

Integrated Pest Management (IPM)- Addressing and/or controlling pesticide use on neighboring properties is a difficult task. School Districts can, however, make huge strides in reducing their own dependence on pesticides via the implementation of Integrated Pest Management (IPM) Policies on school property. IPM policies are important because they 1) offer least toxic alternatives to traditional, chemical dependent pest control techniques, 2) reduce the threat to children of exposure to pesticides from on-site sources, and 3) can save the School District money in the long term.

While the Healthy Schools Act of 2000 requires notification to parents/guardians and staff as well as recordkeeping of pesticide use practices on school properties, schools are not mandated to establish IPM policies. However, it is in the best interest of the School District to remove on-site sources of potential toxic harm to children, to the maximum extent feasible. Considering that pesticide exposure at the agricultural/urban interface can come from any number of sources (fields, schools, homes), it is prudent to consider removing any risk factors that are within the District's immediate control.

Liaison to Surrounding Farms- Any School or District that is located adjacent to agricultural operations should identify a staff person to serve as the liaison between neighboring farm operators and the school. The liaison should contact the grower to request a meeting to establish this relationship. This person should be responsible for

⁸ For detailed information on guidelines for schools, please see Farming Near Schools: A Community Based Approach for Protecting Children, AG Futures Alliance, Feb. 2002, pg. 29-30.

maintaining communication between parties, and should work to continuously strengthen this neighbor to neighbor relationship in order to reduce the potential for future conflict.

Meetings between the school and the grower should happen routinely, in order to maintain constant communication.

To identify neighboring growers, call the County Agricultural Commissioner at 805.934.6200.

Scheduling- Once the relationship is established, the school's farm liaison should provide the grower with a list of scheduled after-school and weekend events for the entire year. He/she should also request a summary of anticipated farm activities from the neighboring grower. The farm liaison should further establish a procedure by which the grower can provide the school with notification of future pesticide applications.

Notification should be written, and should be provided 48 hours in advance of the application (consistent with notification requirements for schools to parents under the Healthy Schools Act of 2000) and include the name of the pesticide, the day and time of proposed application, a contact number for the person conducting the application, and the phone number for the County Agricultural Commissioner.

School/Farm Collaborations- Any program that can further the relationship between the school and the grower is encouraged. "Farm to School" programs, gardening classes, or on-site farm visits can help establish and maintain a good working relationship between a school and its agricultural neighbor.

Parents and Parent Groups-

CCEHP is available to help parents educate themselves on the risks of pesticide exposure to children. CCEHP encourages parents and parent groups such as PTA's to build working relationships with boards and administrations of local School Districts to work cooperatively on implementing policies that address these risks (as developed by AG Futures Alliance and outlined here). Parents should lobby school officials and members of City Council and County Board of Supervisors to avoid building schools on or near agricultural lands.

Farms⁹-

No Spray Policies- Although it is acknowledged that current laws make illegal the movement of pesticides away from the intended application site, accidents can and do happen. Because of this, farms should adopt protocols to avoid spraying when children are present on school grounds. These times include during the school day, during after-school activities or weekend events. Farmers should strive to apply pesticides only when

⁹ For detailed information on guidelines for farms, please see Farming Near Schools: A Community Based Approach for Protecting Children, AG Futures Alliance, Feb. 2002, pg. 27-28.

there is no possibility of drift occurring due to environmental factors, and in manners that are least conducive to drift.

Buffer/Garden Zones- Buffer zones have been used for years as a way to provide protection to neighboring properties from potential hazards created by agricultural operations, such as dust, pesticides, pollen, and noise. Buffer zones show a good faith effort by the farmer in attempting to reduce the off-site movement of agricultural chemicals. Buffer zones can also be used as “sample plots,” where least toxic alternatives can be tested. Farmers can even consider setting up “Farm to School” programs using crops grown in those pesticide-free buffer zones.

IPM/BMPs- Farmers around the Central Coast, and the entire state, are quickly learning of the benefits of implementing Integrated Pest Management (IPM) or Best Management Practice (BMP) policies. Farmers who operate near schools should adopt IPM and BMP policies to help reduce future conflict.

Liaison to School- An identified individual should approach the school and volunteer to provide information regarding future pesticide applications, pesticide toxicity for chemicals to be used, and notification procedures.

Notification- The farmer, farm operator, or liaison to a nearby school should provide advanced warning, in writing and via a telephone call, to the school’s own farm liaison or main contact person. Notification should be provided 48 hours in advance of the application (consistent with notification requirements for schools to parents under the Healthy Schools Act of 2000) and include the name of the pesticide, the day and time of proposed application, a contact number for the person conducting the application, and the phone number for the County Agricultural Commissioner.

Elected Officials-

Save Agricultural Lands- Members of local School Districts, City Councils, and the Board of Supervisors should prioritize the preservation of agricultural lands. In the face of growing urbanization, elected officials must avoid development that encroaches onto agricultural lands. Not only does this type of new development permanently remove productive agricultural land (decreasing agricultural revenue), but it also places new developments directly adjacent to the heavy use of machines, pesticides, noise, dust, and other industrial activities.

School Siting-Members of local School Districts, City Councils, and the Board of Supervisors should do everything possible to avoid building new schools on or near agricultural operations. The expansion of schools into agricultural areas only increases the threats posed by pesticide drift, while decreasing the ability of a farmer to maintain his or her agricultural viability due to additional constraints on the land. Schools should be built, whenever feasible, in already developed areas. In-fill and re-development should be prioritized over expansion and sprawl.

PART 4-
GLOSSARY OF TERMS

Part 4- Glossary of Terms

Active Ingredient- In any pesticide product, the component that kills, or otherwise controls, target pests. Pesticides are regulated primarily on the basis of active ingredients. The remainder of a formulated pesticide product consists of one or more “inert ingredients” (such as water, solvents, emulsifiers, surfactants, clay and propellants), which are there for reasons other than pesticidal activity.

Acute Effect - Adverse effects that result immediately from a single dose or single exposure of a chemical; any poisonous effect produced within a short period of time, usually less than 96 hours.

Acute Exposure- A single exposure to a toxic substance that may result in severe biological harm or death. Acute exposures are usually characterized as lasting no longer than a day, as compared to longer, continuing exposure over a period of time (chronic exposure).

Acute Hazard Warning Label- Toxicity categories used by the Environmental Protection Agency (EPA) for pesticides and found on a pesticide label or container. Certain “Signal Words” are associated with toxicity categories as follows: Toxicity Category I- DANGER; Toxicity Category II- WARNING; Toxicity Category III- CAUTION; Toxicity Category IV- None Required. Category I is the most toxic, while Category IV is the least toxic.

Acute Toxicity- The ability of a substance to cause severe biological harm or death soon after a single exposure or dose. Can also refer to any poisonous effect resulting from a single short-term exposure to a toxic substance.

Adjuvant- An ingredient that improves the properties of a pesticide formulation. Adjuvants can include wetting agents, spreaders, emulsifiers, dispersing agents, foam suppressants, penetrants, and correctives.

Agricultural/Urban Interface- Areas where agricultural and urban uses mix. These areas often have the potential for conflict due to differing uses of the same land. Much of the Central Coast region can be considered an “Ag./Urban Interface” zone, with agriculture often sharing boundaries with schools, neighborhoods, or other non-agricultural uses.

Buffer Zone- An area created to provide protection from pesticide drift and/or exposure. Buffer Zones are often “no spray” zones, and can be placed around the perimeter of a school or agricultural parcel to minimize the potential for conflict and/or harm.

Carcinogen- Any substance that can cause or aggravate cancer. The U.S. Environmental Protection Agency’s (USEPA) classification of carcinogenicity has changed three times over the last 15 years, with categories including “known,” “probable,” “possible,” “likely,” “not classifiable,” “cannot be determined,” and “not likely.” For a complete

explanation of classification, please visit
http://www.pesticideinfo.org/Docs/ref_toxicity3.html.

Cholinesterase Inhibitors- Proper functioning of the nervous system requires an enzyme called cholinesterase (ChE), which facilitates the transmission of nerve impulses. ChE-inhibiting pesticides disable this enzyme, resulting in symptoms of neurotoxicity--- tremors, nausea, and weakness at low doses; paralysis and death at higher doses. Most of these pesticides are insecticides with a similar mechanism of action in both insects and humans. Exposure to cholinesterase-inhibiting pesticides has been linked to impaired neurological development in the fetus and in infants, chronic fatigue syndrome, and Parkinson's disease.

Chronic Effect - An adverse effect on any living organism in which symptoms develop slowly over a long period of time or recur frequently.

Chronic Exposure: Multiple exposures occurring over an extended period of time or over a significant fraction of an animal's or human's lifetime (Usually seven years to a lifetime.)

Chronic Toxicity- The capacity of a substance to cause long-term poisonous health effects in humans, animals, fish, and other organisms.

Developmental Toxin- Chemicals or pesticides that can cause adverse effects such as altered growth, structural abnormality, functional deficiency, or death observed in a developing organism, either before conception (either parent), during prenatal development, or postnatally to the time of sexual maturation.

Endocrine Disruptor- Substances that interfere with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body that are responsible for the maintenance of homeostasis (normal cell metabolism), reproduction, development, and/or behavior. Many endocrine disruptors are thought to mimic hormones, causing potentially serious health problems.

EPA Alpha Code- California requires companies to register and license individual brand names. The revision code, a sequence of (2) alphabetic letters, creates a unique identifier for each product. A single product may have many brand names registered within the state. Unique revision codes assigned to each one allows for identification of the specific brand name in question. These alphabetic letters may or may not appear on actual product labeling.

EPA Auxiliary Code- This number identifies any company that is marketing a product owned by another company, generally the primary registrant. This type of registration is called a distributor registration or a sub-registration and is allowed under existing agreement certified by the USEPA. For a product registered in California, this number represents the company that holds the license for pesticide registration within the state.

EPA Firm Number- This component identifies the company that is the primary registrant with the USEPA. The number may be as long as seven digits, or as short as 1. California assigns their own unique firm numbers to companies that register products which are not required to be registered by USEPA.

EPA Pesticide Code- This five or less digit number is generally assigned sequentially to each company's individual product as it is registered with the USEPA.

Formulation- The substances comprising all active and inert ingredients in a pesticide, and the medium through which they are applied.

Inert Ingredient- Pesticide components such as solvents, carriers, dispersants, and surfactants that are not active against target pests. Not all inert ingredients are innocuous. Inert ingredients are commonly referred to as "Trade Secrets" and are not required to be listed on the labels of pesticide containers.

Integrated Pest Management (IPM)- A pest management strategy that focuses on long term prevention or suppression of pest problems that combines techniques to minimize risk to people, property and the environment. These techniques include monitoring for problems, physical, cultural and biological control of pests, and finally, least toxic chemical controls when necessary.

Pesticide- Substances or mixture thereof intended for preventing, destroying, repelling, or mitigating any pest. Also, any substance or mixture intended for use as a plant regulator, defoliant, or desiccant.

Pesticide Drift- The physical movement of a pesticide through air at the time of application or soon thereafter, to any site other than that intended for application (often referred to as off-target). The Environmental Protection Agency (EPA) and California's Department of Pesticide Regulation (DPR) do *not* include in this definition the movement of pesticides to off-target sites caused by erosion, migration, volatility, or contaminated soil particles that are windblown after application, unless specifically addressed on a pesticide product label with respect to drift control requirements.

Product Registration Status- A classification given to a pesticide after having gone through a review process (Product Registration) by the EPA that examines the ingredients of a pesticide; the site or crop on which it is to be used; the amount, frequency and timing of its use; and storage and disposal practices. EPA evaluates the pesticide to ensure that it will not have unreasonable adverse effects on humans, the environment and non-target species. Registration status can carry classifications that include *Active, Inactive, and Cancelled*, dictating whether or not a given pesticide can be legally used.

Proposition 65 List- Any substances known to the State of California to cause cancer or reproductive harm. Proposition 65 (The Safe Drinking Water and Toxic Enforcement Act of 1986) was enacted as a ballot initiative in November 1986 and was intended to protect California citizens and the State's drinking water sources from chemicals known

to cause cancer, birth defects or other reproductive harm, and to inform citizens about exposures to such chemicals. Proposition 65 requires the Governor to publish, at least annually, a list of chemicals known to the state to cause cancer or reproductive toxicity.

Reproductive Toxin- Any known substance that can adversely affect the reproductive system.

Restricted Use Pesticide- A pesticide may be classified (under Federal Insecticide, Fungicide and Rodenticide Act regulations) for restricted use if it requires special handling because of its toxicity, and, if so, it may be applied only by trained, certified applicators or those under their direct supervision. Regulators can place special conditions on these pesticides if necessary.

The terms above were taken from the following sources:

United States Environmental Protection Agency, *Terms of the Environment-* www.epa.gov/OCEPaterms/pterm.html, www.epa.gov/oppfead1/labeling/lrm/chap-07.htm; California Office of Environmental Health Hazard Assessment, www.oehha.org/prop65.html; Pesticide.Net, www.pestlaw.com/x/guide/1999/EPA-19991200A.html#1; Pesticide Dictionary, Cornell University, 1998, <http://pmep.cce.cornell.edu/facts-slides-self/dictionary.html> ; Pesticide Action Network Pesticide Database, www.pesticideinfo.org/Docs/ref_toxicity6.html, Department of Pesticide Regulation (DPR), www.cdpr.ca.gov/docs/label/epadef.htm

ATTACHMENTS

Sample **School Emergency Procedures For Pesticide Drift¹⁰**

It is the District's desire that none of its sites be affected by pesticide drift or exposure of any kind. However, with the realization that such conditions are beyond the control of the District, the following are recommended actions to be taken in the event of an incident.

Pesticide exposure or drift may occur at any District facility near agricultural operations. Growers will, on occasion, spray insecticides and/or fertilizers. While there are regulations that require the growers to prevent the chemical to drift beyond the boundary of the field on which the application is occurring, our schools may still be affected. In many cases, there is no requirement that the grower give the school or the community any prior notification of these applications. The District will do everything in its power to obtain prior notice so that steps can be taken to minimize potential exposure.

Your first indication of a pesticide application may be notification by public officials or by the odor of the chemical in use. If drift is detected, take the following steps:

- 1.** The Principal will notify the Superintendent immediately.
- 2.** Notify the Santa Barbara County Agricultural Commissioner (934.6200 or 681.5600). Request an inspector be sent to the site immediately. If the Agricultural Commissioner's Office is closed (normal hours are 7 a.m. to 4 p.m.) call 911.
- 3.** Notify all on campus day-care providers.
- 4.** Notify all employees including crossing guards and volunteers.
- 5.** If necessary, render first aid.
- 6.** Until ordered to evacuate, assume that a shelter- in-place strategy will be employed and do the following:
 - a.** Direct that all students and staff remain indoors until it is safe or directed otherwise.
 - b.** Direct that all heating and ventilation systems (HVAC) are shut down.
 - c.** Direct that all windows are closed.
- 7.** Establish Command Post and Incident Command System.
 - a.** As word of the incident spreads, be prepared to release students to parents or guardians.
- 8.** Contact Environmental Health Department to gain assistance in handling the emergency and so that they may put local physicians on alert for possible chemical exposure treatment.
- 9.** Contact the fire department for possible hazardous materials team deployment.
- 10.** The decision to evacuate the site will be made by the superintendent or his designee based on the recommendations of the principal and/or by competent civil author

¹⁰ Taken from Farming Near Schools: A Community Based Approach for Protecting Children, Ag Futures Alliance, Feb. 2002, pg. 31-34

11. If an evacuation order is imminent, prepare to move students and staff to a designated area. If evacuation is not imminent, students and staff should remain in classrooms or in assigned areas.

12. Should the event occur at the start of the school day, notify the following of the emergency:

- a. Bus drivers and dispatchers. Contingency plans may require transportation to an alternate site.
- b. Check safety of students at any affected bus stops and popular walking routes to/from school.

13. If contamination is present after the school day, the district will notify after-school users holding permits (youth athletic teams, scout groups, community classes, etc.) of possible concern.

District Notification Requirements:

As soon as practical after the immediate emergency has been controlled, the District/Site will contact the following:

1. Adjacent or nearby schools.
2. All other users of the campus, including after school clubs, Scout groups, athletic teams, ROP's and Child Development Centers.
3. As much as possible, ideally on the day of the event, the District will supply parents/staff with the following information:
 - a. Chemical involved, including how much and when the drift occurred.
 - b. Possible symptoms and effects to be monitored with the suggestion that the child be seen by their physician if any symptoms occur. The physician should be advised by the parent of a possible chemical exposure.
 - c. Mitigating actions (showering, bagging of clothing, etc.)
 - d. Statement of campus safety.

Post Event Clean-up/Safety Procedures:

Any site administrator who suspects pesticide drift may have occurred onto school district property during non-school hours should contact the Superintendent's Office and the Director of Risk Management.

The actual response will depend on the nature of the chemical in use. For example, the actions taken on an oil-based insecticide may differ significantly from those taken when a powder or granulated substance which is mixed with water is used. Therefore, it is important that the name of the substance used be ascertained and that proper methods be taken. The Agricultural Commissioner's Office should be helpful in obtaining this information and in making recommendations for proper clean-up procedures. The principal will coordinate with Maintenance and Operations and the Director of Risk Management to assure that appropriate resources are available. In general, the following steps are recommended:

1. In most cases, a wash down of playground equipment, outdoor tables, railings, pillars, doors and drinking fountains with soap and water and a thorough rinsing will suffice. In some cases, steam and/or a high pressure hose will also be effective. Ensure that run-off from the washing process does not contaminate playgrounds or other areas of the campus.

2. If indoor areas are exposed, soap and water are generally the preferred method to clean tables, counter tops and sinks.
3. Classroom animals should be monitored for any adverse effects.
4. All HVAC filters are to be changed.
5. Evaluate potentially contaminated material on the grounds (leafy debris, play sand, bark chips) for possible cleaning or removal.

Prior Notification:

If the District is notified prior to a pesticide application near one of the sites, contact the Superintendent and the Director of Risk Management and the following steps are to be taken:

Prior to the application:

1. The district and/or the principal shall notify all parents of the school by taking the following actions:
 - a. Posting a notice at a central location on the outside of the school immediately after the district and/or principal receives notification of the pesticide application;
 - b. Placing copies of the notice in the front office; and
 - c. Sending a written notice home to parents immediately after notification is received by the district and/or principal. Both the written notice and the posted notice shall include all information known by the district and/or principal pertaining to the pesticide application, i.e. the chemical, the amount of the chemical, the timing of the application and the method of application.
2. Requests must be made to the grower that all spraying be done outside of school hours, preferably during weekends, holidays and vacations when schools and fields are not in use.
3. All windows and doors are to be closed and locked.
4. All heating, ventilation and air conditioning systems (HVAC) are to be shut down.
5. Playground equipment/surfacing material (sand and/or bark) and outdoor tables are to be covered with tarpaulins.
6. Outdoor drinking fountains are to be covered with plastic.
7. All school/classroom animals are to be removed to safe areas.

After application:

1. Remove all tarpaulins and plastic covers.
2. Tarpaulins are to be cleaned and plastic discarded.
3. Wash down all playground equipment, outdoor tables and drinking fountains.
4. Monitor the site for any conditions that will require mitigation and respond accordingly. For example, areas of standing water should be removed or covered with clean sand. The principal will coordinate with Maintenance and Operations and the Director of Risk Management to assure that appropriate resources are available.
5. Refer to Post Event Clean- up/Safety Procedures above for possible further actions.

Article taken from *Doctors Guide*, May 26, 2003. Study title: *Early Life Risk Factors for Asthma: Findings from the Children's Health Study. Abstract D011*

<http://www.docguide.com/news/content.nsf/news/8525697700573E1885256D32006C63A9>

ATS: Study Links Early Exposure to Herbicides and Wood and Oil Smoke to Childhood Asthma Risk

By Peggy Peck

SEATTLE, WA -- May 26, 2003 -- Early-life exposure to cockroaches, **herbicides**, and wood and oil smoke were cited as major risk factors for childhood asthma based on the latest results from the Children's Health Study.

Since 1993, this case-control study has been following 3,000 Los Angeles children for respiratory health. The findings were presented here on May 21st at the American Thoracic Society International Conference.

Frank D. Gilliland, MD, PhD, professor of preventive medicine at the Keck School of Medicine, University of Southern California, Los Angeles, United States, and colleagues identified 338 children who had physician-diagnosed asthma before age 5 and 570 controls who were asthma free. Participants were matched for age, exposure to maternal smoking during gestation, and community of residence.

Several findings in the current analysis were surprising, Dr. Gilliland said in an interview. "We expected that breastfeeding would be protective, but it was not. We expected that day care would be protective, but exposure to day care before 4 months of age actually increased risk by a factor of 2.34," he said. The most surprising finding, he noted, was "that maternal age greater than 35 was associated with a 70% increase in risk for asthma."

Dr. Gilliland said that, while early day care was associated with increased risk, "having siblings was associated with a reduced risk." **Exposure to farm crops before the age of 1 year increased risk nearly two times**, while exposure to wood or oil smoke or exhaust anytime from birth to age 5 increased risk more than 50%. **Exposure to herbicides increased risk by 4.5 times, and exposure to pesticides increased risk by 2.4 times.**

"We saw no effect for pets," said Dr. Gilliland, contradicting several other studies, which reported that children who are raised in homes with pets are less likely to develop asthma.

Dr. Gilliland said one disturbing finding was that "about 90% of women who smoke continue to smoke during pregnancy, even though smoking during pregnancy is associated with a twofold increase in risk of asthma.

Homer A. Boushey, Jr., MD, professor of medicine, chief of the division of

allergy/immunology and director of the Asthma Clinical Research Center at the University of California, San Francisco, United States, questioned several of the associations reported by Dr. Gilliland's team.

"Cockroaches, wood or oil smoke, older siblings -- that makes sense, and these findings are in concordance with associations reported in other studies," said Dr. Boushey. He pointed out that several studies, however, found that pets and farm animals are protective: "In one European study there was an association with the level of endotoxins -- we are really talking about manure -- found in [farm-animal] bedding. Higher levels were protective [*N Engl J Med* 2002 Sep 19;347(12):869-77]."

Dr. Boushey, who was not involved in the study, is president of the American Thoracic Society.

