

Pesticide Use by the Seattle School District

1996-1997

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in conjunction with the
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Seattle School District Summary of Pest Control Practices, 1996-1997

Use of Hazardous Pesticides: Tables A and B list pesticides used by the Seattle School District during the specified periods for which use records were received, and briefly summarize information about their health and environmental hazards.

During the one year comparison period from September 1996 to August 1997, district and contractor records show that a total of 9 pesticide sprays and dusts, 2 insecticide baits, and 1 rodenticide bait (for rats and mice) were used in or around Seattle school buildings. **The active ingredients of 4 of these products are classified by the U.S. Environmental Protection Agency (EPA) as possible or probable human carcinogens, and cancer testing results for the active ingredients of 6 products are either not known or equivocal. Six of the pesticides used are organophosphate, carbamate or pyrethrin/pyrethroid nerve poisons. The active ingredient of 1 of the products is an endocrine disruptor, and the active ingredients of 2 are developmental or reproductive toxins. The active ingredients of 2 of the products are also listed by EPA as posing other health risks, and 5 are classified as environmental hazards.**

During the one year comparison period, 6 herbicides were applied to school grounds. **The active ingredients of 3 of these products are classified as possible human carcinogens, and cancer testing results for 2 others are unknown. The active ingredients of 2 of the products have also been listed by the EPA as posing other health risks.**

Pest Control Policies and Procedures: The Seattle school district's custodial support department has issued a memo to its staff outlining an IPM policy and procedures for indoor pests including rodents, cockroaches, and head lice. However, this is not a formal policy that has been adopted by the district administration or the school board. Guidelines allow spraying for cockroaches, silverfish, ants, beetles, and other pests. There are no policy guidelines for outdoor pesticide use. There are also no written records of reasons, criteria, or justification of pesticide use for outdoor or indoor applications.

The Seattle School District has one licensed applicator who does indoor pest control. The district also contracts with a commercial pest control company to do rodent control and other occasional indoor pest treatments. Eight district grounds keepers are licensed to apply herbicides on the school grounds, and some other unlicensed workers also apply chemicals under the supervision of licensed applicators.

The district reports that pesticides are used indoors only when pests are present, and not on a routine schedule. However, the district does appear to have monthly rodent control contracts for a number of schools. The contractor uses pesticide baits. The PCO and custodian make the decision about whether to use pesticides indoors, though

such use is approved by the head of custodial services. The district also reports that indoor spraying is done only on weekends, and that baits are placed only when schools are unoccupied. However, a spot check of dates in the use records indicated that spraying by district staff did sometimes occur on (non-Friday) weekdays during the school years. The records we reviewed did not indicate the time of day of these applications. A spot check of records from the district's contractor also indicated that spraying did occur at a school at least once on a non-Friday weekday during the school year. In addition, spraying in or around administrative buildings occurred at least once during a weekday in the summer. Placement of rodent baits also occurred during school hours in at least some instances. In some cases, rodent bait stations were placed outdoors in bushes near playgrounds or lunchrooms.

Individual gardeners make the decision about when to use pesticides on landscapes. The district also reports that, except on rare occasions, landscape herbicide applications are made when school is out of session. However, our review of use records indicated that at least 45 of 110 total applications were made on weekdays during the school year, typically before or during school hours.

Pest Prevention and Alternative Methods: Neither indoor nor landscape pest prevention and non-chemical pest control measures are well-documented. The district does work to close off access points as a rodent control measure. The district also uses snap traps, wire spring traps, and glue boards for rodents in areas that are inaccessible to children. They also report that their contractor uses some non-chemical alternatives for subterranean termites. As per U.S. Environmental Protection Agency guidelines, the district does not spray for head lice. Instead, during an infestation, carpets are shampooed, and separate plastic bags are issued to each student for their hats and clothing. Custodians do use germicidal soaps to wash student desks and coat racks.

Some manual and other non-chemical weeding alternatives are used. Some volunteers do weeding and mulching, and the district uses mechanical devices (drags) to assist in weed removal from tracks and ball fields. The district removes yellowjacket nests when they can be located.

Recordkeeping and Public Access to Information: The Seattle school district has Material Safety Data Sheets (MSDSs) and some labels on file for the pesticide products it uses. The district created several summary spreadsheets and printouts to answer our request for information about total pesticide usage. The district also provided copies of individual landscape pesticide application records. It was a months-long process obtaining these records and pesticide labels and MSDSs. The district does not have labels or MSDSs for products used by the contractor, but was able to provide copies of invoices that listed dates, product names,

EPA registration number, and amounts used.

The Seattle school district does not provide advance notification to parents for indoor or outdoor pesticide applications, though schools have the choice of providing it. The district reports that they provide advance notification to teachers if a pesticide application is made to a teacher's classroom. They also notify those people living on adjacent properties who are on the state's registry of persons with multiple chemical sensitivity.

The district reports that indoor areas are posted 24 hours before and after pesticide treatment. School principals are notified in advance of landscape applications, and their approval is required for landscape herbicide applications made while school is in session. No posting is done for landscape applications.

Recommendations for the Seattle School District:

Use of Hazardous Pesticides:

- Do not use pesticides classified as highly acutely toxic, or that pose environmental hazards, or that are known or suspected to cause cancer, reproductive damage, nervous system damage, disruption of the hormonal system, damage to the immune system, or to aggravate allergies, asthma, or chemical sensitivities.
- Halt the routine use of herbicides in shrub beds and on lawns and turf. Broadleaf weeds and grasses do not pose a risk to children's health, and their presence does not justify the use of poisons on school landscapes.
- Halt routine indoor use of all insecticide sprays and dusts. If pesticide use is justified, use the "least-toxic" formulations in the smallest amounts possible, preferably baits. Least-toxic pesticides are those that pose minimal acute and chronic toxicity, low risk of exposure, and minimal environmental health concerns.

Policies and Procedures:

- Adopt a formal written pest control policy approved by the school board. Include a clear pesticide minimization or elimination goal.
- Base the policy on a health and safety standard, allowing pesticide use only as a last resort if pests pose an imminent (and documented) health and safety hazard (or threat to an important district resource) for which alternative preventive or control measures are not available.
- Allow only licensed applicators to use pesticides on school grounds.

- Recognize that all members of the school community will have important roles to play in a successful pest prevention and pesticide minimization policy. Ensure that building and landscape designers, grounds and custodial staff, teachers, students, coaches, and other school users understand the policy and their role in making it work.

Pest Prevention and Alternative Methods:

- Document the use of non-chemical alternatives, including sanitation, vacuuming, rodent-proofing, and other exclusion or habitat modification measures before pesticides are considered for a given pest problem.
- Create incentives for school staff and pest control contractors to prevent pest problems and avoid the use of pesticides.
- Educate teachers and custodians about the hazards and ineffectiveness of insecticidal sprays in classrooms. Educate parents, teachers and school nurses about the hazards of insecticidal shampoos, and about alternative lice control methods. The U.S. Environmental Protection Agency's school Integrated Pest Management guidelines state that the use of insecticidal shampoos for head lice is not recommended except as a last resort in extreme cases, because of the ease with which these toxic chemicals can be absorbed through the scalp into the blood stream.
- Recognize and encourage the healthful and ecological values of more naturalized school landscapes.

Recordkeeping and Public Access to Information:

- Keep a central file of pesticide use records and current labels and MSDSs for any pesticide products used by school staff or contractors, and make these records readily accessible to the public.
- Provide 48 hour advance written and posted notification to parents and school staff if pesticides are to be used in school buildings or on school landscapes.
- Post school buildings and the immediate treatment site with warning signs for at least 72 hours after pesticides are used. Do limited posting and notification of school staff even for the use of baits.

Seattle School District Indoor / Structural Pesticide Use, September 1996 - August 1997

Total amounts of selected insecticide sprays used: Of 94 total indoor or structural treatments made to Seattle school sites by the district's contractor or by school personnel during the one year period, 21 (22%) resulted in the use of pesticide sprays or dusts. For non-rodent pests, sprays were used 21 of 26 times treatments were made, or 81% of the time. Baits were used for the remaining 5 treatments (or 19% of the time).

The frequency and amounts of pesticide sprays used were as follows (dilutions are specified where known):

PT 240 (used 14 times) (534 seconds of aerosol spray, plus 4 ozs (1/2 cup) by contractor)
 Suspend .5% and .03%(used 2 times) (128 oz = 1 gallon)
 Cynoff WP .1% (used once) (96 oz = 3/4 gallon)
 KnoxOut 2FM (used once) (32 ozs = 4 cups)
 Undiscernible named product (used once) (32 oz = 4 cups)
 ULD BP-100 (used 2 times)(19 oz = 2 3/8 cups)
 Ficam W .5% (used once) (4 oz = 1/2 cup)
 Zoecon Precor (used once)(1 oz =1/8 cup)
 Misty (used for yellowjackets, no use data provided) (?? oz)

Indoor / structural pests treated: According to records reviewed for this report, indoor and structural pests treated by the Seattle school district and its commercial contractor during the one-year comparison period, in order of frequency of occurrence, were:

pest and % of total calls	# treatments	# pesticide spray or dust treatments	# pesticide baits or pheromone traps	# non-chemical treatments
rodents [†] (72%)	68	0	66	2 (inspect only)
cockroaches (20%)	19	14	5	0
fleas (3%)	3	3	0	0
sugar / moisture ants (2%)	2	2	0	0
carpenter ants (2%)	2	2	0	0
termites (??%)	?	?	?	?
yellowjackets (??%)	?	?	?	?
total	94	21 (22%)	71 (75%)	2

† Based on contractor records, only. Most of the rodent treatments done by the contractor are to outdoor landscape areas near buildings. District personnel use non-chemical rodent control methods, including traps and glue boards, for most indoor rodent problems. We did not receive or review records of rodent trap usage.

School sites treated with insecticides or rodenticides (22+ total): (during the one-year period from September 1996 to August 1997)

African American Academy, Ballard H.S., Beacon Hill, Blaine Elem., Cleveland H.S., Dearborn Park, Decatur, Fairmont Park, Franklin H.S., Gatewood Elem., Graham Hill, Hale H.S., Hamilton, Ingraham H.S., Madrona, Magnolia Elem., Rainier Beach H.S., Washington M.S., West Seattle H.S., West Woodland Elem., Whitman M.S., Wing Luke.

Sites with ongoing rodent problems and receiving monthly bait service during the one-year period: African American Academy, Ballard H.S. (building has now been torn down); Blaine Elem., Dearborn Park, Fairmont Park, Gatewood Elem., Magnolia Elem., Washington M.S., Whitman M.S.

List does not include school sites where yellowjacket spray product was used, as no usage data for this product was provided by the district.

Indoor / structural areas treated: Classrooms (including kindergarten), portables, home economics rooms, kitchens, teacher's lounge, locker room, lavatories, others? (not recorded on most contractor records)

Seattle School District Landscape Pesticide Use, September 1996 - August 1997

Herbicides used by the Seattle School District, in order of amount used:

Granular products: Casoron (113 lb)

Liquid herbicide concentrates: Roundup (1,102 oz = 8.6 gallons)
Fenocil (640 oz = 5 gallons)
Scythe (204 oz = 1.6 gallons)
Surflan (80 oz = 0.63 gallons)
Finale (57 oz = 0.45 gallons)

Schools or other sites where herbicides were used (62 total): A&S Center, Adams, J. Addams, Arbor Heights, Beacon Hill, Blaine, Boren, Coleman, Columbia, Columbia Annex, Dearborn Park, Decatur, Eckstein, Fairmount Park, Franklin, Garfield, Gatzert, Genesee Hill, Hale, Hamilton, Hay, Ingraham, Lafayette, Latona, Leschi, Lincoln, Logistics (DFC), Lowell, Loyal Heights, Madison, Madrona, Mann, Maple, Marshall, McClure, McDonald, Meany, Minor, ML King, Monroe, Montlake, Muir, North Beach, North Annex, Northgate, Olympic Hills, Olympic View, Pinehurst, Rodgers, Roosevelt, Roxhill, Sacajawea, Sanislo, Schmitz Park, Sealth, Stevens, Viewlands, West Seattle, West Woodland, Whitman, Wilson Pacific, Wing Luke.

Landscape areas treated: Planting beds, ball diamonds and fields, dugout and bleacher areas, parking lots, sidewalks, lawns, curbs, fencelines, football fields, building perimeters, courtyards, gravel areas.

Landscape pests treated: Broad leaf weeds, grasses, blackberries, horsetail, bindweed

Table A

Sprays and Baits Used by the Seattle School District, June 1994 - December 1997					
Pesticide Product	Active Ingredient(s)	Signal Word (1)	Neurotoxic Insecticide Class (2)	Cancer Classification of Active Ingredient(s) (3)	Other Harmful Effects of Active Ingredient(s) (4)
Insecticide Sprays					
Cynoff WP	cypermethrin	WARNING	PYR	C (possible human carcinogen)	ENDO
Ficam W	bendiocarb	WARNING	CARB	unknown	NEURO, ENVIRON
KnoxOut 2FM	diazinon (microencapsulated)	CAUTION	OP	unknown	DEV, NEURO, ENVIRON
Misty Wasp and Hornet Killer	pyrethrins, piperonyl butoxide (PBO), n-octyl bicycloheptene dicarboxamide, propoxur	no label	PYR, CARB	deferred, C (possible human carcinogen), unknown, B2 (probable human carcinogen)	ENVIRON (PBO), unspecified TRI hazard (propoxur)
PT 240 Perma-Dust	boric acid	WARNING		E (evidence of non-carcinogenicity)	
• PT 270 Dursban	chlorpyrifos	WARNING	OP	E (evidence of non-carcinogenicity)	
• PT 310 Avert	abamectin B1, avermectins	CAUTION	neurotoxic mode of action	E (evidence of non-carcinogenicity)	DEV, ENVIRON
Suspend	deltamethrin	CAUTION	PYR	unknown	
ULD BP-100	pyrethrins, piperonyl butoxide (PBO), n-octyl bicycloheptene dicarboxamide	CAUTION	PYR	deferred, C (possible human carcinogen), unknown	ENVIRON (PBO)
Zoecon Precor	methoprene	CAUTION		unknown	
Miscellaneous (unreadable product name)	?	?	?	?	?
Pesticide Product	Active Ingredient(s)	Signal Word (1)	Label Warning Statements (5)	Cancer Classification of Active Ingredient(s) (3)	Other Harmful Effects of Active Ingredients (4)
Insecticide Baits					
• BioPath Cockroach Control Chamber (trap)	metarhizium anisopliae	CAUTION	inhalation hazard no label	unknown	
Gentrol Point Source Roach Control Device	hydroprene	CAUTION	May cause skin sensitization reactions.	D (equivocal)	
MaxForce Roach Control System (pellet)	hydramethylnon	CAUTION	no label	C (possible human carcinogen)	REPRO, DEV, HEPATIC, ENVIRON
• Micro-Gen Pro-Control Ant Bait (paste)	sulfuramid	CAUTION	no label	unknown	
Rodenticide Baits					
Talon Weather Blok Bait (waxy block)	brodifacoum	CAUTION	Keep out of reach of children. May be harmful or fatal if swallowed.	unknown	
• These products were not used during the one year comparison period from September 1996 to August 1997. (1), (2), (3), (4), (5): See last page of report for explanation of signal words and codes used in table.					

Table B**Herbicides (Weed-Killers) Used by the Seattle School District, September 1996 - August 1997**

Pesticide Product	Active Ingredient(s)	Signal Word (1)	Label Warning Statements (5)	Cancer Classification of Active Ingredient(s) (3)	Other Harmful Effects of Active Ingredients (4)
Fenocil III	bromacil	WARNING	Keep out of reach of children. Harmful if absorbed through the skin or swallowed. Causes eye and skin irritation. Toxic to wildlife.	C (possible human carcinogen)	THYROID
Finale	glufosinate	WARNING	Keep out of reach of children. Causes substantial but temporary eye injury. Harmful if swallowed, inhaled or absorbed through skin. Use of this product in areas with coarse soils and high water tables may result in groundwater contamination.	unknown	
Norosac 4G (also called Casoron 4G) (granules)	dichlobenil	CAUTION	Keep out of reach of children. Harmful if swallowed. Do not breathe dust. Do not allow contact with eyes or skin. Keep all unprotected persons, children, livestock, and pets away from treated areas.	C (possible human carcinogen)	
Roundup Pro	glyphosate	CAUTION	Keep out of reach of children. Causes eye irritation. Avoid contact with eyes or clothing. Extreme care must be taken when applying this product to prevent injury to desirable plants and crops.	E (evidence of non-carcinogenicity)	
Scythe	nonanoic acid (also called pelargonic acid)	WARNING	Keep out of reach of children. Causes substantial but temporary eye injury. Avoid contact with skin. This product may be hazardous to aquatic invertebrates.	unknown	
Surflan A.S.	oryzalin	CAUTION	Keep out of reach of children. Causes eye irritation. Harmful if swallowed, inhaled, or absorbed through the skin. May cause skin sensitization reactions in certain individuals.	CQ (possible human carcinogen)	HEPATIC, HEMATO

(1), (2), (3), (4), (5): See last page of report for explanation of signal words and codes used in table.

Reading the Pesticide Data Tables

(1) Signal words are required on the labels of pesticide products. They are a rough indicator of the acute toxicity of a product. Signal words are assigned based on the estimated lethal dose of the product (via oral, dermal or inhalation routes of exposure), plus the severity of potential harmful effects of acute exposure on eyes and skin.

DANGER = Most highly toxic, oral or dermal lethal dose for an average adult less than or equal to 0.1 oz (or irreversible eye effect at 7 days or severe skin irritation or damage at 72 hours.)

WARNING = Somewhat less toxic, oral lethal dose for an average adult between 0.1 oz and 1 oz (or reversible eye effect within 7 days, or eye irritation lasting 7 days, or moderate skin irritation at 72 hours.)

CAUTION = Oral lethal dose for an average adult between 1 oz and 10 oz (or eye irritation reversible within 7 days, or mild to slight skin irritation at 72 hours.)

(2) Neurotoxic (Nerve-Poisoning) Pesticides:

The following codes are used to designate pesticides that belong to one of three major classes of pesticides that work by poisoning the nervous system of insects. These nerve poisons are of special concern because human nervous systems work in surprisingly similar ways to those of insects.

CARB = n-methyl-carbamate insecticide

OP = organophosphate insecticide

PYR = pyrethrin or synthetic pyrethroid insecticide

(3) EPA Cancer Classification is based on the U.S. EPA Office of Pesticide Programs "List of Chemicals Evaluated for Carcinogenic Potential" (February 1997). The following codes are used to designate particular classifications:

A = Probable human carcinogen: Sufficient evidence from epidemiological studies to support a cause-effect relationship between the substance and cancer.

B1 or B2 = Probable human carcinogen: Based on animal studies and/or human epidemiological data.

C or CQ = Possible human carcinogen: Based on limited evidence from animal studies.

D = Not classifiable as to human carcinogenicity: Inadequate data.

E = Evidence of noncarcinogenicity for humans: Compound has tested negative in at least two adequate animal cancer tests in different species, and in adequate epidemiological studies. Based on available evidence.

(4) Other Harmful Effects: The following codes are used to designate chemicals that are listed by federal regulators under Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, and section 6607 of the Pollution Prevention Act of 1990. Chemicals are listed when review of the scientific data results in a high level of confidence that the chemical causes a specific adverse effect at relatively low dose levels, or will cause various adverse effects at moderate dose levels. Specific criteria for listing are as follows:

DEV = Developmental toxicity (toxicity to developing fetuses, e.g. birth defects, stillbirths)

ENDO = see below for explanation of this code

ENVIRON = Environmental toxicity (toxicity to plants, animals, fish, other aquatic organisms, potential for water or soil contamination or bioaccumulation)

GASTRO = Gastrointestinal toxicity (toxicity or irritation to stomach or stomach lining)

HEMATO = Hematotoxicity (toxicity to blood, such as anemia, damage to marrow or blood cells)

HEPATIC = Hepatotoxicity (toxicity to liver)

NEURO = Neurotoxicity (toxicity to nervous system)

RENAL = Renal toxicity (toxicity to kidneys)

REPRO = Reproductive toxicity (e.g., testicular atrophy, decreased fertility, reduced sperm counts)

THYROID = Toxicity to thyroid gland

ENDO = Chemical is listed as a "suspect" or "probable" endocrine disruptor on the Illinois Environmental Protection Agency's "Preliminary List of Chemicals Associated With Endocrine System Effects in Animals and Humans or In Vitro" (in *Endocrine Disruptors Strategy*, Illinois EPA, February 1997). Endocrine disruptors are chemicals that are capable of mimicking or disrupting the function of naturally-occurring hormones.

5) Label Warning Statements: These statements are required by the EPA on the labels of pesticide products.