

## **Pesticides used by Municipality of Anchorage 2002-2003**

Hazard Assessment by Alaska Community Action on Toxics (ACAT), April 2004

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This analysis is based upon the review of pesticide products used by the Municipality in 2002-2003, either by staff or contracted commercial applicators. It is uncertain if this accounts for all pesticide products used on Municipal properties and right-of-ways (ie Utilities and Public Safety).

The purpose of this analysis is three-fold: (1) to identify potential health and environmental hazards of pesticides used by the Municipality; (2) to demonstrate the importance of providing responsible notification and postings on the hazardous nature of pesticides, and safe re-entry times; (3) to establish a system to screening pesticides for reduction, elimination or continued use. An alternatives analysis to hazardous pesticides will be further required.

The references to human health hazards (such as carcinogeniy, endocrine distributors) and ecotoxicity (toxicity to fish, birds) of active ingredients in pesticide products comes from the City of Seattle's pesticide catalog and characterization evaluation conducted by Philip Dickey. In addition to these peer reviewed references and product label precautions and Material Safety Data Sheets, information in this assessment comes from the research on the effects of pesticides on humans, and the implications for family physicians by The Ontario College of Family Physicians, a comprehensive review of peer-reviewed studies from 1992 - 2004.

<http://www.ocfp.on.ca/English/OCFP/Communications/CurrentIssues/Pesticides/>. The Ontario College review shows new reports on the health hazards of Glyphosate, in addition to a 1999 American Cancer Society study, *A Case-Control Study of Non-Hodgkin Lymphoma and Exposure to Pesticides* which found that people exposed to glyphosate are 2.7 times more likely to contract non-Hodgkin Lymphoma.

The **persistence** standard of measurement data comes from the Oregon State University Extension Pesticide Properties Database <http://ace.orst.edu/info/npic/ppdmove.htm>. Pesticides are classified as non-persistent, moderately persistent, or persistent based on their halflives. Those classifications are as follows:

|                       |             |
|-----------------------|-------------|
| Low/Non-persistent    | <30 days    |
| Moderately persistent | 30-100 days |
| Persistent            | >100 days   |

ACAT bases information **carcinogenity** (known or probable carcinogens), as designated by the International Agency for Research on Cancer, the U.S. Environmental Protection Agency, U.S. National Toxicology Program, and the State of California's Proposition 65 list. ([http://www.pesticideinfo.org/Docs/ref\\_toxicity3.html](http://www.pesticideinfo.org/Docs/ref_toxicity3.html))

A background on **endocrine disrupting** pesticides can be found at <http://www.ccae.org/projects/endocrine.htm>

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Neurotoxic **cholinesterase inhibitors** are identified Material Safety Data Sheet information and by Department of Pesticide Regulation for the State of California <http://www.cdpr.ca.gov/docs/pur/pur98rep/tables05.htm>

Pesticides with high **acute toxicity** have been designated by the World Health Organization (WHO), the U.S. EPA, or the U.S. National Toxicology Program.

Because many chemicals have not yet been thoroughly evaluated and a significant percentage of pesticide science has been based on industry-sponsored research, these lists cannot be considered comprehensive. New data on these chemicals must be added as they are listed in the official source lists.

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Insecticide Product: **Attain PT1800**

Active Ingredient(s): \***Bifenthrin**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA Signal Word: **DANGER** (Category I): Extremely toxic or Highly toxic
- **Tier 1** Category for the City of Seattle (product recommended as highest priority for phasing out)
- Corrosive; greenhouse use only
- Health Effects: Possible Carcinogen; determined by the state of California to cause reproductive and developmental harm, e.g., birth defects, infertility, sterility and impairment of normal growth and development.
- Low persistence
- E low mobility
- Toxic to Fish
- ACAT fact sheet (see [http://www.akaction.org/Pesticide\\_Fact\\_Sheets.htm](http://www.akaction.org/Pesticide_Fact_Sheets.htm))

Insecticide Product: **Fulex (Aphid Fumigator)**

Active Ingredient(s): \***Nicotine**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA Signal Word: **DANGER** (Category I): Extremely toxic or Highly toxic
- Restricted Use pesticide (may only be applied by certified applicator)
- Health Effects: Pesticides determined by the state of California to cause reproductive and developmental harm, e.g., birth defects, infertility, sterility and impairment of normal growth and development; Possible Carcinogen; Possible endocrine disruptor
- Moderate Acute Aquatic/Fish Toxicity

Insecticide Product: **Orthene; Orthene 1300 TR; Orthene PT 1300 DS**

Active ingredient: **\*Acephate**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA Signal Word: WARNING (Category II): Moderately toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- Health Effects: Suspected Endocrine Disruptor; Neurotoxin - Cholinesterase Inhibitor
- Low persistence
- Low soil mobility
- Toxic to Birds
- Highly Toxic to Bees
- Off-target toxicity
- Not acutely toxic to aquatic life
- ACAT fact sheet ([http://www.akaction.org/Pesticide\\_Fact\\_Sheets.htm](http://www.akaction.org/Pesticide_Fact_Sheets.htm))

Insecticide Product: **Cygon**

Active Ingredient(s): **\*Dimethoate**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA Signal Word: WARNING (Category II): Moderately toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- Health Effects: Possible carcinogen; Neurotoxin - Cholinesterase Inhibitors; determined by the state of California to cause reproductive and developmental harm, e.g., birth defects, infertility, sterility and impairment of normal growth and development.
- Low Persistence– 7 days (soil half-life)
- Low-Moderate Mobility
- Toxic to Fish
- Highly Toxic to Bees
- Toxic to Wildlife

Herbicide Product: **Treflan EC**

Active Ingredient(s): **\*Trifluralin**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA signal word: WARNING (Category II): Moderately toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- Persistent Bioaccumulative Toxin (PBT) toxins that persist in the environment, bioaccumulate through the food web
- Possible carcinogen
- Endocrine disruptor <http://www.ccae.org/projects/endocrine.htm>
- Moderate persistence; ext low mobility
- Toxic to fish
- Bioconcentration (trifluralin); ecology PBT

- ACAT fact sheet (See [http://www.akaction.org/Pesticide\\_Fact\\_Sheets.htm](http://www.akaction.org/Pesticide_Fact_Sheets.htm) )

**Insecticide Product: Preclude**

Active Ingredient(s): **\*Fenoxycarb**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA signal word: CAUTION (Category III): Slightly toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- Probable carcinogen
- Low persistence
- E low mobility
- Toxic to fish
- ACAT fact sheet ([http://www.akaction.org/Pesticide\\_Fact\\_Sheets.htm](http://www.akaction.org/Pesticide_Fact_Sheets.htm))

**Fungicide Product: Subdue 2E**

Active Ingredient(s): **\*Metalaxyl**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA signal word: WARNING\_(Category II): Moderately toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- No evidence of carcinogen
- Moderate persistence
- Very high mobility – 70 days (soil half-life)

**Plant growth regulator Product: A-REST**

Active Ingredient(s): **\*Ancymidol**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA signal word CAUTION (Category III): Slightly toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- High persistence – 120 days (soil half-life)
- High Soil Mobility

**Herbicide Product: Roundup**

Active Ingredient(s): **\*Glyphosate**

- Applied by Municipality of Anchorage or contracted commercial applicator
- EPA signal word: CAUTION (Category III): Slightly toxic
- Tier 2
- Linked to non-Hodgkin's Lymphoma; some evidence not carcinogen; parental preconception exposure is associated with late abortion; associated with congenital malformations (birth anomalies)
- Moderate persistence – 47 days (soil half-life)
- Extremely Low Mobility
- Limit use near water to avoid runoff
- ACAT fact sheet ([http://www.akaction.org/Pesticide\\_Fact\\_Sheets.htm](http://www.akaction.org/Pesticide_Fact_Sheets.htm))

Pesticide Products: **Arsenal, Assault and Chopper**

Active Ingredient(s): **\*Imazapyr**

- Applied by Municipality of Anchorage or contracted commercial applicator
- Herbicide
- EPA signal word: CAUTION (Category III): Slightly toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- Moderate persistence
- High mobility – 90 days (soil half-life)
- ACAT fact sheet ([http://www.akaction.org/Pesticide\\_Fact\\_Sheets.htm](http://www.akaction.org/Pesticide_Fact_Sheets.htm))

Pesticide Product: **Safer Soaper** (Safer Yard and Garden)

Active Ingredient(s): **\*Pyrethrin**

- Applied by Municipality of Anchorage or contracted commercial applicator
- Insecticide
- EPA signal word: CAUTION (Category III): Slightly toxic
- Tier 2 Category in Seattle (“those of moderate concern that might be used only under certain conditions”)
- Human health effects: Likely carcinogen, Neurotoxin
- Low persistence; E low mobility
- Toxic to fish

Pesticide Product: **Casoron 4G**

Active Ingredient(s): **\*Dichlobeni**

- Applied by Municipality of Anchorage or contracted commercial applicator
- Herbicide
- EPA signal word: CAUTION (Category III): Slightly toxic
- Tier 1 Category for the City of Seattle (product recommended as highest priority for phasing out)
- Health Effects: Possible carcinogen
- Not acutely toxic
- Moderate persistence; moderate mobility\* - 60 days (soil half-life)
- Persistence mobile metabolite

Plant growth regulator Product: **Cycocel**

Active Ingredient(s): **\*Chlormequat chloride**

- Applied by Municipality of Anchorage or contracted commercial applicator
- Plant growth regulator
- EPA signal word: CAUTION (Category III): Slightly toxic
- Tier 2 Category in Seattle (“those of moderate concern that might be used only under certain conditions”)
- Health Effects: Possible carcinogen
- Acute Toxicity (studies show highly toxic to cats; moderately toxic to dogs, rabbits and mice)

Pesticide Product: **M-Pede**

Active Ingredient(s): **Potassium laurate M-Pede**

- Applied by Municipality of Anchorage or contracted commercial applicator
- Insecticide
- EPA signal word: WARNING (Category II): Moderately toxic
- Tier 3
- Low persistence; ? Mobility
- Maybe toxic to fish

Other registered pesticide products used by MOA:

**Entomite**

**Entonem**

**Plantshield**

**Bonnors Castille Soap**

**Sunspray** - Mineral oil, petroleum distillates, solvent refined light

EPA signal word: Caution; Unclassifiable carcinogen

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**\* Recommended by ACAT to be phased out and/or eliminated from use.**

### **City of Seattle Tier Table Pesticide Ranking System**

ACAT is including information on the 225 pesticide products the City of Seattle classified into one of three tiers:

**Tier 1:** products that should be highest priority for phasing out

**Tier 2:** those of moderate concern that might be used only under certain conditions

**Tier 3:** those of lower concern that might be considered usable tools in an IPM framework

**Tier 4:** Insufficient data available to assign tier ranking

(<http://www.cityofseattle.net/environment/TierTablesFriendlyFormat.xls>)

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