Weed Mitigation Essential Knowledge

Town of Superior
Weed and Pest Management Program

The Town uses an Integrated pest Management (IPM) approach based on best practices to control weeds and pests on all parks and open space areas. This approach is well-researched and established as an effective and environmentally sensitive approach to weed and pest management based on a foundation of several broad elements. Prominent IPM program components include applying common-sense practices; utilizing a combination of cultural, biological, and chemical measures that emphasized the least-toxic approach to controls; economic feasibility; and a strong emphasis on minimizing the use of chemical control measures.

The four basic steps of the Town's IPM program:

1. Set action thresholds. Before any control action, Town staff determines if the amount of weeds or pests present in an area requires a response.
2. Monitor and identify pests. Not all weeds or insects require immediate control actions.
3. Prevention. Measures include improving soil health by aeration and adding soil amendments, mulching trees, and aerating. Well-maintained facilities and healthy plant material are less susceptible to weeds and pests.
4. Control. Effective, less-risky methods are implemented first, such as mowing weeds before going to seed or hand-pulling small areas. EPA-approved synthetic herbicides and pesticides are applied to targeted areas when determined to be necessary; and this done at the lowest application rate possible by State-licensed and certified applicators.

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Qualified Supervisor (QS)

An individual employed by or acting on behalf of a commercial, limited commercial, or public applicator who without supervision evaluates pest problems, recommends pest controls using pesticides or devices, mixes, loads, or applies any pesticide, sells any application services, operates devices, or supervises others in any of these functions must be licensed as a qualified supervisor. A Qualified Supervisor must meet specific on-the-job experience requirements in each category of licensure to obtain this license.

COLORADO
Department of Agriculture

The Federal Insecticide, Fungicide, and Rodenticide Act

- The **Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)** of 1947 required the U.S. Department of Agriculture to register all pesticides prior to their introduction in interstate commerce.
- In General, there has been a shift toward greater emphasis on minimizing risks associated with toxicity and environmental degradation.
- Under FIFRA, no one may sell, distribute, or use a pesticide unless it is registered by the Environmental Protection Agency (EPA). Registration includes approval by the EPA of the pesticide's label, which must give detailed instructions for its safe use. General use pesticides may be applied by anyone, but restricted use pesticides may only be applied by **certified applicators** or persons working under the direct supervision of a certified applicator.

Pesticide Product Registration

- The Colorado Department of Agriculture enforces the Pesticide Act, which requires registration of all pesticides with CDA before distribution, with few exemptions.
- A "pesticide" is any substance intended for preventing, destroying, repelling or mitigating any pest. This includes:
- Insecticides - products intended to kill or repel insects.
- Fungicides - products intended to kill or prevent the growth of fungi.
- Rodenticides - products intended to kill rats and mice.
- Herbicides - products intended to kill or prevent undesirable plants.
- Animal Repellents.
- Products that treat plant diseases.
- Disinfectants and sanitizers.
- Plant Growth Regulators.
- Common household products which claim to kill bacteria and viruses are regulated as pesticides.
- Pesticides *do not* include products used on or inside the human body to treat an illness or disease. (Such as drugs or alcohol-based skin sanitizers)
- CDA also requires registration of pesticide devices and minimum-risk pesticides (also known as "25(b)s") that the EPA has exempted from federal registration requirements as long as they meet federal requirements.

Labels and Labeling

- Each time you buy a pesticide, you receive instructions to tell you how to use it. The pesticide **label** describes the **risks and benefits** of the pesticide product to the user, but it is also the primary tool of pesticide regulation. The combined knowledge of many people in industry, universities, and government is used to develop the information on the label. This information will tell you how to use the product safely and correctly.
- The key to safe ornamental application is minimizing public exposure to the product through following the label.

Toxicity and Hazard

- Pesticides are toxic and can cause injury. Toxicity is not the only factor that determines how dangerous a chemical is to human beings or other animals. Anyone who handles pesticides should also be concerned with the hazard of the chemical.
- The terms toxicity and hazard do not mean the same thing. **Toxicity** is the capacity of a substance to produce injury or death. **Hazard** includes two factors-toxicity and **exposure**. Hazard is the possibility that injury will result from the use of a substance in a given formulation, quantity or manner.
- Some hazards do not involve toxicity to humans or other animals. For example, sulfur, oils, and many other chemicals are considered safe or relatively safe to animals but may be **phytotoxic** because they pose considerable hazards to some plants.

Toxicity and Hazard

- A pesticide may be extremely toxic but present little hazard to the applicator or others when used:
  - In a very dilute formulation
  - In a formulation that is not readily absorbed through the skin or readily inhaled
  - Occasionally and under conditions to which human beings are not exposed
  - Only by experienced applicators who are properly equipped to handle the chemical safely
- A chemical may be low in toxicity but present a hazard because it:
  - Is normally used in a concentrated form
  - Is rapidly absorbed or inhaled
  - May be used by untrained persons, who become exposed to it

Toxicity and Hazard

KEEP OUT OF REACH OF CHILDREN

CAUTION

- Signal Words
  - Signal words are set by law. Each manufacturer must use the correct one on every label. Signal words must appear on the front panel of the label. All labels must bear the statement “Keep out of reach of children.”
    - **Caution** – This word signals you that the product is **slightly toxic** or relatively **nontoxic**, has only slight potential to cause acute illness from oral dermal or inhalation exposure, and would cause little, if any, skin or eye irritation.
    - **Warning** – This word signals you that the product is **moderately** likely to cause acute illness from oral, dermal, or inhalation exposure or that the product is likely to cause moderate skin or eye irritation.
    - **Danger**- This word signals you that the pesticide is **highly toxic** and is very likely to cause acute illness from oral, dermal, or inhalation exposure, or to cause severe eye or skin irritation.
    - **Danger-Poison** – These words signal you that the pesticide is very toxic from oral, dermal, or inhalation exposure and can be fatal or cause irreversible eye damage. The skull and crossbones symbol is used on the label along with the signal work “danger” and the word “poison” (in red).

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Risk signal words

- **DANGER-POISON (with Skull and Crossbones):** Extremely toxic
- **DANGER:** Highly toxic, corrosive, or causes irreversible eye/skin damage
- **WARNING:** Moderately toxic
- **CAUTION:** Slightly toxic

Minimizing Exposure: Public Safety

- Pre-Site Inspection
  - Inspect site application areas looking for:
    - People
    - Environmental Hazards
    - Targeted Pests
    - Determine potential Pre-Emergent applications to reduce Post-Emergent applications
- Notification of Pesticide Applications
  - Department of Agriculture regulates written notifications for pesticide applications.
  - Town of Superior has additional notifications for pesticide applications.

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Minimizing Exposure: Public Safety

- Inventory Management Per Given Application to Reduce Excess Pesticide Usage on Site and Ensure Safe and Efficient Movement of Pesticides
  - Spot Spray vs Broadcast Application When Possible
- Pesticide Vehicles Clearly Marked with Pesticides Properly Locked and Stored Per Label and Department of Agriculture Requirements
- Notice of Application Signs On Site
  - Department of Agriculture regulates posted sign requirements.
  - Avoid drift in accordance with the label for both wind speed and temperature requirements
  - Limit days of week chemical applications can take place

Minimizing Exposure: Applicator Safety

- Review label

> **The time invested in reading the label is probably the most valuable few minutes spent in pest control. This small investment in time will help avoid injuring applicator, harming the environment, or breaking the law by misusing the pesticide.**

- Proper use of Personal Protection Equipment (PPE) per the label
- Following the instructions on the label
- Proper cleaning, maintenance and disposal of all equipment per Department of Agriculture

3.2 – PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

1. Long-sleeved shirt and long pants,
2. Shoes plus socks.

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Environmental Sensitivity

- Identify meteorological and climatic factors affecting application (drift, runoff, etc.).
- Identify the influence of terrain, soil, and substrata on possible groundwater contamination.
- Trained to be able to recognize sensitive areas and organisms that could be affected by application, drift, and runoff.
- Understand precautions for the protection of endangered and threatened species.
- Understand methods of spill prevention, control, and cleanup.

Agents Classified by the International Agency got Research (IARC)

There are four levels for classification according to IARC's system. They look like this:

- Group 1: Carcinogenic to humans
- Group 2A: Probably carcinogenic to humans
- Group 2B: Possibly carcinogenic to humans
- Group 3: Unclassifiable as to carcinogenicity in humans
- Group 4: Probably not carcinogenic to humans

Agents Classified by the IARC Monographs, Volumes 1–124

Agent	Group	Volume	Year
Alcoholic beverages	1	44, 96, 100E	2012
Aluminium production	1	34, Sup 7, 92, 100F	2012
Coke production	1	Sup 7, 92, 100F	2012
Engine exhaust, diesel	1	46, 105	2014
Estrogen therapy, postmenopausal	1	72, 100A	2012
Estrogen-progestogen menopausal therapy (combined)	1	72, 91, 100A	2012
Estrogen-progestogen oral contraceptives (combined)	1	72, 91, 100A	2012
Leather dust	1	100C	2012
Outdoor air pollution	1	109	2016
Outdoor air pollution, particulate matter in	1	109	2016
Painter (occupational exposure as a)	1	47, 98, 100F	2012
Processed meat (consumption of)	1	114	2018
Rubber manufacturing industry	1	28, Sup 7, 100F	2012
Salted fish, Chinese-style	1	56, 100E	2012
Solar radiation	1	55, 100D	2012
Tobacco smoke, second-hand	1	83, 100E	2012
Tobacco smoking	1	83, 100E	2012
Tobacco, smokeless	1	Sup 7, 89, 100E	2012
Ultraviolet-emitting tanning devices	1	100D	2012
Wood dust	1	62, 100C	2012
X- and Gamma-Radiation	1	75, 100D	2012
Art glass, glass containers and pressed ware (manufacture of)	2A	58	1993
Frying, emissions from high-temperature	2A	95	2010
Hairdresser or barber (occupational exposure as a)	2A	57, 99	2010
Night shift work	2A	98, 124	In prep.
Glyphosate	2A	112	2017

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Most common

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Reentry Period

- Many herbicide state the following for the Reentry Period:

  "Reentry for treated areas allowed once product is dry."

- See product label for specific reentry period of any specific product.

- Please note, Vargas Property Services remains on-site throughout this period of time.

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