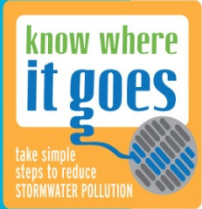


Homeowner Approaches to Reduce & Eliminate Use of Pesticides, Herbicides, and Fertilizers



Hal Hultgren, Conservation Commission

12 April 2010



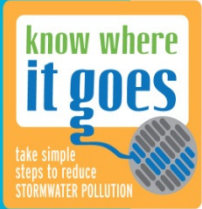
A New Perspective: Improving the Environment from your Back Yard



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Watershed System



**How do we reduce and eliminate
contaminants?**



Soil Test

- **Have your lawn and garden soil tested**
 - **Both UMASS & UCONN have testing programs**
 - **Test will provide pH & nutrient deficiencies**
- **Why pay the chemical companies if your soil is just fine?**

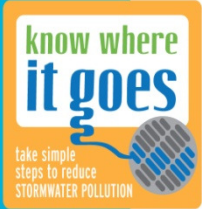
UMass Amherst



Soil Testing



West Experiment Station



Mow High



- **3 inches or higher**
- **Grass roots are as long as the grass is high**
 - **Healthier grass with fewer weeds**
 - **Less water required**
- **Keep mower blades sharp**
 - **Better recovery**
 - **Less moisture loss**

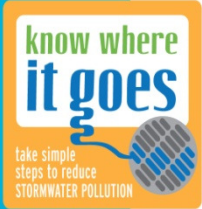
know where
it goes

take simple
steps to reduce
STORMWATER POLLUTION



Leave Grass Clippings on Lawn

- **Provides a source of slow release nitrogen**
- **Reduces fertilizer needs by up to 50%**
- **Less work**
- **If you must bag clippings, compost them**
- **Sweep grass clippings (and any fertilizer, herbicides, or pesticides) back onto lawn**

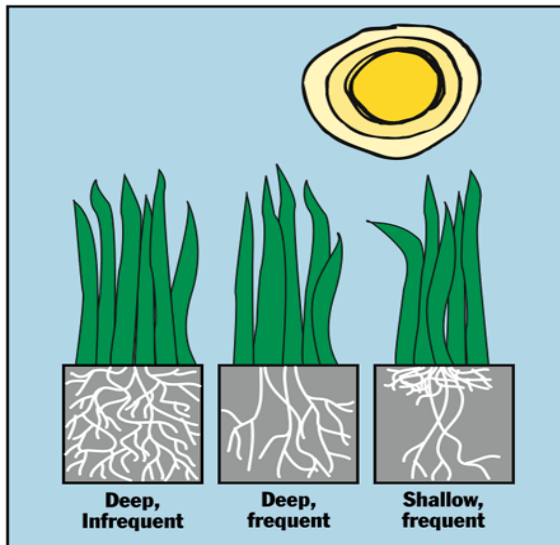


Use Low Input Grasses

- **Overseed lawn with fescue grasses**
 - **Drought tolerant**
 - **Some are shade tolerant**
 - **Overseeding helps to ensure dense lawn**
- **Look for endophyte-enhanced grasses for lawns (naturally pest resistance)**
- **Consider adding white clover (fixes nitrogen for plant use)**



Water Wisely



- Lawns need only 1 inch of water per week
 - Combination of rain and watering
 - If watering, water deeply and in the morning
 - Rain gauges are inexpensive
- Overwatering causes many problems
 - Shallow roots
 - Increased susceptibility to disease
- Grasses go naturally dormant in hot & dry weather - *they will come back!*

Fertilizer Use



If lawn looks healthy, don't fertilize

Go really organic

- Lawn clippings
 - Lime
- ➔ **This should be sufficient for mature lawns**

If you must fertilize (soil test will provide info)

- Use organic fertilizers (lower in nitrogen)
- Make sure fertilizer is slow release (more than 50% water insoluble nitrogen)
- *Remember that more is not better*

Avoid combination fertilizer and pesticide products



Minimize Lawn Area

- **Trees, shrubs, and groundcover absorb up to 14 times more rainwater than a lawn**
- **Keep shoreline edges naturally vegetated**
 - **Discourages geese**
 - **Filters pollutants, sediments and nutrients**
- **Consider a rain garden to capture stormwater runoff from gutters and allow water to soak into soil**



Herbicide & Pesticide Use

Goal: control the problem with minimal impact to the environment

- **Mechanical** – handpick insects and weeds, remove infected leaves
- **Organic controls**
 - Insecticidal soaps
 - Natural ingredient based, eg, Neem, Rotenone
 - Biological controls, e.g., nematodes, parasites
 - *But they can have negative implications*
- **Chemical controls**
 - Some more toxic than others



Major Problems with Lawns - Crabgrass



Instead of Chemicals

Dithiopyr - Dimension

Siduron – Tupersan

Benefin/triflur - Team



Use Organic Approaches

Corn Gluton

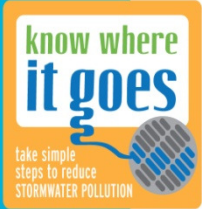
Or ...

Really Organic

Hand pull

Re-seed bare spots

Maintain dense lawn



Major Problems with Lawns - Grubs

Survey first – you may save yourself a lot of money!

Instead of Chemicals

Imidicloprid

Trichlorfon

4F Carbaryl



Use Organic Approaches

Milky spores

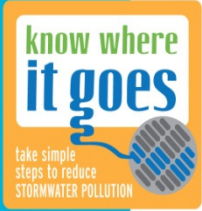
Nematodes

Or ...

Really Organic - Hand pick
adult beetles



JAN FEB MAR APRIL MAY JUNE JULY AUG SEPT OCT NOV DEC



Major Problems with Lawns – Broadleaf Weeds



Instead of Chemicals

2,4-D dimethylamine salt

Mecoprop

Dicamba



Use Organic Approaches

Hand pull

Re-seed bare spots

Maintain dense lawn

What the weeds say ...



Read the Labels!

- **Know what fertilizers, herbicides, and pesticides you are using**
- **Know the active ingredients**
- **Apply only the amount directed**
 - *More is not better!*
- **Read the warnings**
 - **Toxicity – humans, animals, birds, insects**
 - **Shelf life and half life**

Pesticide Label

Directions

For proper mixing, the spray tank should be at least $\frac{3}{4}$ filled with water before this product is added. Shake sprayer occasionally or agitate to keep spray particles in suspension during application. Follow spray schedule given in **SPRAY CHART**.

Do not apply this product through any type of irrigation system. For home garden use only.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, and aquatic life stages of amphibians. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in areas near the application site. Do not contaminate water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.