

# TIPS TO GARDEN ORGANICALLY

## DOWN TO EARTH TIPS FOR GOOD HEALTH AND A SAFE ENVIRONMENT

### WHY NOT USE CHEMICAL PESTICIDES?

I should rephrase the question to **why take unnecessary risks?** Yes unnecessary. Organic gardeners, farmers and landscapers consider pesticides an outdated approach to problems. Alternatives to these poisons exist, are economical and, in many cases, are even more effective than the chemical "solution".

The first thing to remember is that natural controls should not simply consist of replacing a toxic products by a less toxic one, but **first try to eliminate the causes of the problem.**

Natural approaches are based on choosing resistant varieties to common pests or diseases, planting in the right place, appropriate watering and fertilizing, encouraging (or purchasing) predators and parasites and then, if all fails, use a less toxic alternative product. A natural approach also takes advantage of timing of planting, mulches, cover crops, companion crops, grazers, planting distances, and the heat of the sun (solarization), as well as mechanical tools, to prevent and/or get rid of weeds, pests and diseases.

By dealing with the

cause of the problem, these methods provide a long-lasting economical control. In the long run, it's a massive time saving as well as improving the quality and taste of your food if you are a gardener.

The information in this class will empower you to make pest and weed control choices that are healthier for you and for the earth.

### SPECIAL POINTS OF INTEREST:

- *Chemical Pesticides are unnecessary*
- *Natural controls are not simply replacing a toxic products by a less toxic one*
- *Find out about lots of Alternative Approaches and Products in this class.*
- *IPM – mandatory points: the aim to reduce risky pesticide use and using chemicals in last resort.*

### WHAT ARE PESTICIDES?

Pesticides are substances used to kill weeds, insects, fungus and other pests. They can be natural (e.g. pyrethrins, corm gluten) or chemical such as (e.g. 2,4-D or malathion). Under Canadian law, even vinegar or garlic has to

be registered as a pesticide if it is to be sold commercially, and so do living organisms such as nematodes to control Japanese beetles or the bacterium Bt for caterpillar, mosquito and beetle control.

### Types of pesticides

**Herbicides** are applied to control various plants on grass, in gardens and farms, and on hard surfaces (streets and sidewalks). As well as being used by farmers, home

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**PERMACULTURE.** Other related term would be SOIL and SEED SAVING.. Any book by Rodale Press, as well as Organic Gardening magazine (also on line at

<http://www.organicgardening.com/> ). Harrowsmith magazine also had a very strong "organic" natural tendency, reflected in such gardening books as *Harrowsmith Northern Gardener* (now republished as *The*

*New Northern Gardener*)

.f your library does not have a book you are interested in, their interlibrary loan service have worked marvels to get me what I needed. *Book titles p 5*

## WEB RESOURCES

### **Saskatchewan information**

Saskatchewan Agriculture IPM (wrong definition)

<http://www.agriculture.gov.sk.ca/Default.aspx?DN=33e22c55-66f2-49aa-bed6-8d2cc216aaf5>

### **U. of S. garden line**

<http://www.gardenline.usask.ca/master.html> not very organic, but some interesting tips. Covers mainly tree and indoor plant problems.

### **Education**

University of California statewide IPM program

<http://www.ipm.ucdavis.edu/>

### **Landscape**

Canadian Organic landscape providers and supplies, including corn gluten meal:

<http://www.organiclandscape.org/serviceproviders.htm>

<http://www.caps.20m.com/> Canadian site with links to organic landscapers, master gardeners and an extensive list of organic web sites for all needs

Provincial sites: <http://www.caps-quebec.com/> Quebec site- English and French; lawn and yard care, lice; <http://www.cityfarmer.org/grass.html>; Vancouver site; organic landscapers; (IPM) Lawn Care Information in BC; advertises specific IPM manuals for BC

Biological Urban gardening Services (BUGS); the only publication of its kind devoted to natural organic landscape maintenance principles, products and practices.

[www.organiclandscape.com](http://www.organiclandscape.com)

Mother Earth News:

<http://www.motherearthnews.com/>

click on organic gardening in the left column

Natural Garden Care

[http://www.chechnet.org/healthhouse/education/articles-detail.asp?main\\_ID=433](http://www.chechnet.org/healthhouse/education/articles-detail.asp?main_ID=433)

### **Lawn care**

Organic Land Care Course

<http://www.organic-land-care.com>

Natural Lawn Care:

[http://www.chechnet.org/healthhouse/education/articles-detail.asp?main\\_id=432](http://www.chechnet.org/healthhouse/education/articles-detail.asp?main_id=432)

<http://www.gardenguides.com/articles/lawnqa1.htm>

<http://www.gardenguides.com/articles/lawnqa2.htm>

Nontoxic Fertilizers

[http://www.chechnet.org/healthhouse/education/articles-detail.asp?main\\_ID=173](http://www.chechnet.org/healthhouse/education/articles-detail.asp?main_ID=173)

Canadian organic landscape providers and supplies

<http://www.organiclandscape.org/serviceproviders.htm> .

Dandelions: [www.chemfree-weedcontrol.com](http://www.chemfree-weedcontrol.com) and various types of dandelion weeders;

### **Insect control indoors and out:**

- (Ontario) Natural Insect Control:

<http://www.natural-insect-control.com/>

insect ,mammal and bird traps, parasites and predators for most indoor and outdoors pest problems; bee condos; natural fertilizers including corn gluten for weeds; books; Reemay row cover; Safer's soap products; Bt H-14 [mosquitoes], bird feeders, houses, and accessories.

### **Bio-Integral Resource Center** (the bible):

<http://www.birc.org> publishes 2 journals: *The IPM Practitioner* for professionals and *Common Sense Pest Control* for everyone.

- **Steve Twevden's site.** Free download of *The Bug Stops Here + enzyme cleaner:*  
<http://www.getipm.com/>

U.S. sources of advice and products: [www.Victorpest.com](http://www.Victorpest.com) non-toxic or least toxic pest and weed control; **Warning:** he does carry a few products with pesticides, read the labels

### **Integrated Pest Management**

**Schools**, indoors and out:

<http://www.epa.gov/pesticides/ipm>

/Expelling Pesticides from Schools

*Adopting School Integrated Pest Management; Beyond Pesticides; 2002; has a very large section on alternative pest control; get from <http://www.beyondpesticides.org/index.html> or google title*

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owners, and gardeners, they are widely used by golf courses, power companies (around transformer stations and under power lines), highway departments and rural municipalities, farmers, ranchers and foresters in most provinces as well as in water, usually to get rid of algi or other unwanted vegetation.

**Insecticides** kill insects. They are applied:

- indoors for problems varying from ants,

cockroaches and spiders to termites in residences, and for plant pests ( includes the greenhouse industry).

- outdoors in lawns and gardens, as well as in the countryside by agriculture, municipalities, forestry, and on golf courses.
- for mosquito control and control of other biting insects
- for lice and other parasites in people

and pets

- in Stored food
- to kill unwanted fish in lakes

**Fungicides** are used indoors and outdoors for control of fungal diseases on plants and surfaces.

**Disinfectants** are used mostly indoors to sanitize.

**Rodenticides** are used indoors and out to control rodents. They include strychnine used in the Prairies for ground squirrel control on farm and range land.

**Avicides** are used to kill birds such as Pigeons or House Sparrows, but also to get rid of blackbirds or other "pest" birds, especially in the US, when they congregate on their wintering grounds.

SEARCH THE LIBRARY

SEARCH THE INTERNET

SEARCH CATALOGS

## WHERE TO GET PESTICIDE ALTERNATIVES INFORMATION AND PRODUCTS

### Internet

The amount of information available is huge. [www.google.ca](http://www.google.ca) makes it easy to look up anything. You will find some hits for "goats for weed management" to "propane weeders" to whatever. Comparative studies of various methods have also been found that way. Organic Gardening and Rodale Press have been around for more than 50 years and most libraries carry several of their publications.

### Regina Garden Centers:

Several local garden centers and mail order companies carry safer alternative pest control products such as Safer's Soap products for every home landscape need, from dandelions to insects. Demand alternative products, and that garden center employees be trained in a natural approach and how to use alternative products.

- **Dutch Growers**; 3320 Pasqua Street

- **Home Depot** had a press release in 2001 or 2002 promising safer pesticide alternatives in their stores

- **Canadian Tire** apparently has Reemay type row cover, cheap rat traps for ground squirrel control, N store: Turf Maize

- **Compost tea starter**: Stan: 586-8580

### Some Gardening Catalogs selling alternatives:

**T & T Seeds**: [www.ttseeds.mb.ca](http://www.ttseeds.mb.ca); live traps, sticky traps for insects, natural fertilizers, lots of Safer's soap and sulfur and copper based products, diatomaceous earth based insect "food", rodent repellent.

**William Dam Seeds**: [www.damseeds.com/](http://www.damseeds.com/); eco-lawn seed mix; natural fertilizers; Safer's soap and sulfur and copper based prod-

ucts; books; some organic seeds; cheapest Agribon floating row cover (wider)

**Stokes**: [www.stokeseeds.com](http://www.stokeseeds.com); second cheapest Reemay row cover insect barrier. Other than that, I order very little from them as most seeds are treated.

### West Coast Seeds:

[www.westcoastseeds.com/index3.cfm](http://www.westcoastseeds.com/index3.cfm); Sivatex row cover insect barrier; natural fertilizers; BtK; predatory nematodes for soil pests; traps; books

### Prairie Grown Garden Seeds:

[www.prseeds.ca](http://www.prseeds.ca); organic vegetable and flower seeds

**Vesey Seeds**: [www.veseys.com](http://www.veseys.com)

### Regina Public Library Resources

Searching the library catalog for ORGANIC gave 97 references a few years ago. Other terms that could be searched would be ORGANIC FERTILIZER, ORGANIC FOOD, COMPANION PLANTING, ORGANIC

### **Insects, lawns, excellent pesticide fact sheet**

Northwest Coalition for Alternatives to Pesticides

<http://www.pesticide.org/>

pesticide fact sheets and alternatives fact sheet from fleas, lice, termites, to wasps to weeds to mosquito control.

<http://www.panna.org/resources/advisor.html> PANNA - good resources on pesticides, alternatives, organic growing and farming. Also subscribe to PANUPS is a free international news service on pesticides, their health effects, politics and alternatives.

<http://www.spcpweb.org/> IPM for yards, gardens, schools, homes

<http://www.organiclandscape.com/>; California; BUGS Flyer is the only publication of its kind devoted to natural organic landscape maintenance principles, products and practices.

### **Mosquitos:**

Canadian Coalition for Health and Environment (CCHHE)

<http://www.cche-info.com/>

Public Health Mosquito Management Strategy,  
[http://www.beyondpesticides.org/info-services/pesticidesandyou/Summer%2002/mosquito\\_policy.pdf](http://www.beyondpesticides.org/info-services/pesticidesandyou/Summer%2002/mosquito_policy.pdf)

backyard mosquito management  
[http://www.beyondpesticides.org/info-services/pesticidesandyou/Summer%2002/backyard\\_mosquito\\_management.pdf](http://www.beyondpesticides.org/info-services/pesticidesandyou/Summer%2002/backyard_mosquito_management.pdf)

Organic Farming Research Foundation; kaolin-based particle film coatings to reduce insect and fungus damage, as well as heat stress  
[www.ofrf.org](http://www.ofrf.org)

### **Disease Control**

**Enzyme Cleaner:** Steve Twevden's site. Free download of

*The Bug Stops Here:*

<http://www.getipm.com/>

Ecochem: natural controls for fungus, algae; lawn and gardening resources <http://www.ecochem.com/>

Choose resistant plants and varieties (see handout for a start);

Copper or sulfur based fungicides; (see catalogs)

Safer's products;

**Baking soda recipe** works better than any chemical **fungicide** on mildews and several other fungi. (See recipe 4).

### **Fertilizer**

International Compost Tea Council

<http://www.intlctc.org/theboard.htm>

### **Weeds**

**on Hard Surfaces** such as: Several non-specific alternatives exist for streets, sidewalks and transformer stations:

### **commercial water and steam weeders (on left side)**

Waipuna <http://www.waipuna.co.nz/>

Aquacide commercial steam weeder. Canadian.

<http://www.eco-environmental.com/aquacide.shtml>

### **Propane torches:**

[www.flameeng.com](http://www.flameeng.com),

[www.mantank.com](http://www.mantank.com),

### **Radiant-heat weeders:**

[www.chemfree-weedcontrol.com](http://www.chemfree-weedcontrol.com) several models and sizes of weeding machines that can be used for landscapes, agriculture, building maintenance, market gardening, hospital, retirement homes and sports fields: for all kinds of paving, gravel, earth and gravel paths, car parks, terraces, etc. and excellent for disinfecting cement or tile surfaces; also a model for tap rooted plants.

**Noxious Weeds control** everywhere:

Graze with goats, or some say sheep. Look up "Lani Lamming" or "goats for weed management" on [www.google.ca](http://www.google.ca) or go to

<http://www.webspawner.com/users/goatsweeds/>

<http://www.swcoloradohome.com/articles/gardening/goats.asp>

### **Shrub Removal:** Weed Wrench:

[www.weedwrench.com](http://www.weedwrench.com)

### **Farming**

The Canadian Organic Growers

<http://cog.ca>

The New Farm, published on line by Rodale Press:

<http://www.newfarm.org/>

Organic Agricultural Center of Canada <http://www.organicagcentre.ca/>

Organic Farming Research Foundation <http://www.ofrf.org/> sponsor a lot of research in US; have excellent info bulletins available free online

Compact disc containing proceedings of the four session organic symposium of the 2003 tri-society meeting (Agronomy, Soil, and Crop Science) – order free copies from the Minnesota Institute of Sustainable Agriculture, ph: 612-625-8235, email: [misamail@umn.edu](mailto:misamail@umn.edu); [www.misa.umn.edu](http://www.misa.umn.edu) click on Forum, then 2003 Organic Ag Symposium.

Organic AgInfo.org

<http://www.organicaginfo.org>

### **Rodents**

[www.havahart.com](http://www.havahart.com) for live traps

ground squirrels Lee's Trapworks: humane guillotine trap. Swift Current. <http://www.leestrapworks.com/>

AC Greenfix – variety of chickling vetch (*Lathyrus sativum*). From Prairie Garden Seeds or Buffalo Coulee Farms Ltd, Cadillac.

## BOOKS

## Library search list plus:

**Building a healthy Garden**

Building Healthy Gardens; 1989; Catherine Osgood Foster; Garden Way Publishing Book; Alpine Press

The New Organic Manifesto; 1986; Lee Fryer; Earth Foods Associates

The Bio-Gardener's Bible How to Build a Super-Fertile Garden; 1982; Lee Fryer; Chilton Books

Permaculture Two; 1979; Bill Mollison; Tagari Community Book

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**Insect and Weed control**

Rodale Press publications including

Rodale's Garden Problem Solver Vegetables, Fruits and Herbs, by Jeff Ball

600 Garden Answers.

A Gardener's Guide to Common Insect Pests

Common Sense Pest Control: Least Toxic Solutions for Your Home, Garden, Pets and Community; William Oltrowski et al; 1991; Taunton Press; Newton, Ct; the bible for least toxic pest control (available at RPL)

The Healthy Garden Handbook; 1989; Editors of Mother Earth News; Fireside book

The New Northern Gardener; 1996; revised and expanded; Jennifer Bennett; Camden House

Organic Gardening in Alberta; 2000; Garden Institute of Alberta

BugBuster: Poison Free Pest Controls for Your House and Garden; Bernice Lifton; 1991; Avery Publishing

2008 Directory of Least-Toxic Pest control Products; William Quarles, ed; 2007; The IPM Practitioner XXIX(11/12); 52 pp; from BIRC <http://www.keyed.com/birc/descjrnl.htm>

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## INSECT AND DISEASE RESISTANCE

There are 3 main aspects to resistance:

1. the Plant does not produce the attractant
2. The attractant is hidden by another smell or color
3. The plant produces repellent substance or contains outcompeting microbes or substance

In better seed catalogs such as Johnny's, West Coast, Territorial, the known disease resistance is indicated in code after the name of each variety. For instance, most peas varieties are resistant to some diseases.

PM: Powdery mildew

F: Fusarium wilt

BYMV: bean yellow mosaic virus

E: Enation mosaic virus

PLR: Pea leaf roll virus

W: common wilt

e.g. Dakota pea: (PM, F)

e.g. Apparently, red cabbages do not attract cabbage butterflies as much as green ones.

e.g. a plant is hairy or produces more leaves than other varieties

Rodale's Encyclopedia of Natural Insect and Disease Control has a list

**Lawn and Weeds**

The Chemical-Free Lawn: The Newest Varieties and Techniques to Grow Lush, Hardy Grass; Warren Schultz; 1996; Rodale Press

How to Get Your Lawn and Garden Off Drugs; Carole Rubin; Friends of the Earth

Redesigning the American Lawn; 1993; F. Herbert Bormann et al; Yale Univ. Press

How to Get Your Lawn Off Grass; Carole Rubin.

The New Ontario Naturalized Garden; Lorraine Johnson; Whitecap Books

Weeds and What They Tell; Ehrenfried E Pfeiffer; Biodynamic Farming and Gardening Association; reprinted

Other not strictly organic books have a lot of good common sense advice:

Gardening on the Prairies; 1987; Roger Vick; Western Producer Prairie Books

Pests of the West Prevention and control for Today's Garden and Small Farm; 1998- revised; Whitney Cranshaw; Fulcrum Publishing

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Agriculture Canada used to have a number of publications available for free such as:

Manures and Composts; Ag Canada public. # 868

Beneficial Insects and Common Pests on Strawberry and raspberry crops; Ag Canada; public # 1863/E

Turf Grass Problems in the Prairie Provinces; Ag Canada; Public 1767 E

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Finally, **if you can't beat them, eat them:**

Edible Garden Weeds of Canada; 1978; National Museum of Science

## NATURAL HOME-MADE SOLUTIONS

### Recipe 1 - Insecticide

4 quarts (4L) water  
5 rhubarb leaves  
2tsp (30 ml) chili peppers  
¼ cup (60 ml) pure soap  
Blend and strain.

#### Uses:

works very efficiently, even for pear slugs (Ken Beattie – Trowel Tips)

### Recipe 2 - Steve Tvevden's Enzyme Cleaner with (and without) Peppermint

1 oz Enzyme Cleaner  
1 quart water

#### Uses:

- Quickly and safely controls even resistant lice, ants, insects, mites, fungus, mildew and mold (within seconds).

- Aphids and spider mites can be controlled at a rate of only 1 part Enzyme Cleaner to 500 parts water.

- with peppermint often gives up to 4 weeks residual control

- Also use for stains, dirt, odors, athlete's foot, fungi, bacteria, viruses, plant diseases, ticks, etc

- Helps wounds heal quickly, quick relief to skin rashes and irritation from burns, bites, stings, poison ivy, etc.

- Has also used the formula with peppermint as insect repellent

NOTE: - *Enzyme Cleaner is a registered trademark and made strictly of GRAS (Generally Recognized as Safe) ingredients.*

- *With Peppermint is better*

*for insect control*

### Recipe 3 - "Hot Pepper Anyone?"

Add 2 teaspoons cayenne pepper flakes, 2 cloves of garlic into the blender. Blend together with a dash of liquid soap and 1 quart of water, then strain.

#### Uses

Spray on soft-bodied insects such as aphids and they go running. It also repels critters such as rabbits. Reapply this mixture after a rain."

(from **Alternative Pest Sprays**  
<http://www.listrak.com/c.asp?ltk=22476441863> by Charlie Nardozzi)

### Recipe 4 - "Baking Soda Fungicide"

3 teaspoons baking soda  
2 tablespoons horticultural or summer oil  
1 gallon of water .

Mix.

#### Uses

Stops powdery mildew and Black Spot Disease. Use as a preventive spray every 10 to 14 days."

(from **Alternative Pest Sprays**  
<http://www.listrak.com/c.asp?ltk=22476441863> by Charlie Nardozzi)

### Recipe 5 - All purpose spray

A few peeled garlic bulbs  
1 small onion  
1 tbsp cayenne pepper  
1 quart of water

Can add pungent herbs such as peppermint, cedar leaves, wormwood or coriander.

Blend and let sit for one hour or more.

Strain through cloth and add a tbsp pure liquid soap or cooking oil to help the spray stick to leaves. Store in a cool place.

- Spray full strength to repel aphids, flea beetles, thrips, and others.

- To make a "solar tea", chop the same ingredients and steep in water in a clear glass and set in the sun for a few days.

(The Kitchen Garden by Patrick Lima)

### Recipe 6. Garlic Spray (for Diseases and mosquitoes)

Press 4-5 big garlic cloves into as many tsp mineral oil.

Let steep for 1 day.

Add 2 cups of water and a tsp of pure liquid soap and whisk together. Strain through a square of cotton and store the concentrate in a glass (not metal) container. Use 2 tsp in 1 quart (or liter) spray bottle.

#### Uses

For downy mildew on cucumbers and melons, rust, anthracnose and bacterial blight on beans, and early blight on tomatoes.

(The Kitchen Garden by Patrick Lima)

### Recipe 7 - Cedar Leaf Spray or Cedar Mulch

Simmer a couple of double handfuls of cedar chips, bark or sawdust in a big pot of water. Strain and store for use as a foliar spray. Cedar mulch should keep the potato patch beetle free.

#### Uses

Deters cucumber, bean and potato beetles, red spider mites and squash bugs from susceptible plants

### Recipe 8 - Vinegar Herbicide

1 gal red or white vinegar + 2 cups table salt + 8 drops dishwashing liquid: remove 2 cups of vinegar.



## Good Gardening and

### RECIPES

To the remaining vinegar, add salt and shake mixture until all salt dissolved. Then add dishwashing liquid and pour back the rest of vinegar. Put in spray bottle.

#### Uses

This solution sterilizes the soil it touches so wait a few weeks before planting. *(NOTE: There is so much salt in this recipe that I am not sure the vinegar adds anything! Too much salt could damage the environment. I would not use it with so much salt)*

**9. Disinfectants** 2 spray bottles: one with hydrogen peroxide 3 % and one with vinegar. Spray surface with each in turn, then wipe.

### CONTINUED

#### Uses

Mostly indoors to sanitize.

Several lawn care companies such as OrganoLawn, Boulder, Colorado, use

- Nature Weed Control: sugar beet molasses + trimethylglycine for weed control on lawns

- blood and bone meal for cure of chronic ring-spots, as well as other natural products.

New research is showing very promising results in using properly made compost enriched with good micro-organisms for disease control of any kind as well as soil improvement.

### LAST MINUTE TIPS

#### **Think Outside the Box**

#### **Grow Many Varieties**

I very rarely grow only one variety of anything I grow large quantities of. My usual is

Beans, peas and potatoes: 8-12 varieties of each

Carrots, cucumbers, radishes, cole crops: 4-8 varieties of each

Squash: 3 varieties each of summer and winter

This allows me, like with the 2003 grasshopper damage, to determine which variety, if any, did better than others.

I select both for earliness, taste,

and yield and, in the case of potatoes, good storage under my poor conditions! For some crops, size, uniformity and intended use are also important, as well as disease resistance.

#### **Choose Early Varieties**

#### **Choose Varieties Resistant to Local Diseases, conditions, or/and Insects**

#### **Never Quit Trying New Varieties that appeal to you**

unless you really feel that you cannot improve on your yield or taste now, or run out of space!.



## a Bountiful Harvest to you

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