

family
Vegetable
Garden
series

EXTENSION BULLETIN E-824 (25)

Organic Gardening

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Organic gardening is growing vegetables without using chemical (man-made) fertilizers or pesticides. Organic means "from living things". Anything that was part of or produced by a plant or animal is organic.

FERTILIZERS AND SOIL CONDITIONERS



FERTILIZERS

Fertilizer is plant food, usually a combination of the three major nutrients needed by plants — nitrogen (N), phosphorus (P), and potassium (K).

- Inorganic (chemical) fertilizers supply these nutrients in a form plants can use right away.
- Organic materials must be broken down into chemicals before plants can use them. Fresh manure, leaves, straw, etc. will not supply many nutrients to plants until they are well rotted. They will help improve the soil by making clay soils drain better and sandy soils hold moisture better.

You'll need a lot more organic fertilizer than chemical fertilizer to get the same amount of nutrients. For example, 2 pounds of commercial fertilizer (5-20-20) equals about 25 pounds of manure plus 5 pounds of rock phosphate.

SOME ORGANIC FERTILIZERS

	Analysis (N-P-K)	Pounds needed per 100 sq. ft. of soil		Analysis	Pounds needed
Nitrogen					
dried bloodmeal	13-15-0	3	cattle and horse manure	5-3-5	20-30
hoof & bonemeal	14-0-0	2	sheep and chicken manure (never use fresh)	7-5-8	10-20
Phosphorus			compost	—	20-80
rock phosphate	0-5-0	25-25			
steamed bonemeal	.8-30-0	3-6			
Potassium					
green sand (glauconite)	0-1-6	25-75			
unleached wood ashes	0-2-6	5-15 (if soil pH is less than 6.5, use half as much.)			

(You will need to combine N sources with suppliers of P and K.)

COMPOST

Compost is a mixture of decayed materials such as leaves, sawdust, animal droppings and so on. It improves soil drainage and air space. It is weak fertilizer, though. It would take 20 to 80 pounds of compost to give enough N, P and K to grow good vegetables in a 100 square foot garden.

What to use for compost: leaves, grass clippings, sawdust, wood chips, healthy plants, straw, hay, pea pods, manure, kitchen garbage (except meat scraps)

What not to use: diseased plants, weeds with seeds, fruit pits or seeds or meat scraps (They attract rats and mice.), bones or fat, man-made things like plastic, bottles or cans.

Mix with fertilizer and leave it to rot. Keep the pile moist. When ready, mix it into soil. (See No. 2 in this series: Start with Soil, or Extension Bulletin E-727.)



GREEN MANURE AND COVER CROPS

You can add organic matter to your garden by growing a crop on the garden site when not using it for vegetables.

Green manure: soybeans, rye, ryegrass, sweet clover. Grow on garden site for 1 or 2 years and then plow under. This is good if you don't plant your garden in the same spot every year.

Cover crop: rye or wheat. Plant in fall after destroying old plants. Plow cover crop under in spring before planting.

Green manure and cover crops give the same results as compost when worked into soil, with a lot less time and effort.

START RIGHT



- 1 Don't grow vegetables commonly attacked by insects, such as cabbage, cauliflower, broccoli and potatoes.
- 2 Use disease-resistant varieties. (See Extension Bulletin E-760 (a).)
- 3 Do not use plants with diseases or insects for compost.
- 4 Plant only pest-free seeds and plants.
- 5 Rotate crops. Crops hurt by the same pests should be planted in a different part of the garden each year. This keeps pests from building up in soil. Groups of vegetables injured by the same pests are:

Mustard family (cole crops)
broccoli, Brussels sprouts, cabbage,
cauliflower, collards, kale, mustard,
radishes

Nightshade family
eggplant, peppers, potatoes,
tomatoes

Parsley family
carrots, celery, parsley

Cucumber family
cucumbers, melons, pumpkins,
squash

Pea family — beans, peas

- 6 If any plants look diseased, remove and destroy them right away.
- 7 Keep weeds down — harmful insects hide in them.

ORGANIC OR NATURAL PESTICIDES



Most organic pesticides can be used up to day of harvest. However, some are more toxic (poisonous) than man-made ones.

- Petroleum oils (1 to 3% spray concentration) — Controls scale insects, aphids and spider mites.
- Pyrethrum (from plants) — A lot is needed to kill insects. It paralyzes insects quickly. Low toxicity.
- Rotenone (from plants) — Slower acting than pyrethrum, but more poisonous. Kills sucking and chewing insects. Highly toxic — more poisonous than common inorganic pesticides used in home gardens, such as malathion and sevin.
- *Bacillus thuringiensis* (trade names: Dipel, Thuricide and others) — A bacteria which kills many leaf-chewing caterpillars.

CONTROLLING PESTS

INSECT POLICE



Some insects eat the insects that harm plants. Ladybird beetles, damsel flies, assassin bugs and praying mantises are some of these.



THINGS TO TRY

- 1 Put collars of paper or cardboard around plants when transplanting to stop cutworms.
- 2 Handpick insects as they appear.
- 3 Use ashes around plants where slugs are a problem.
- 4 Put a few drops of mineral oil at base of corn silks (at tip of ear) when their tips start to turn brown, to prevent damage from corn earworms.
- 5 Drown slugs by placing a shallow pan of beer (sunk to ground level) in garden.
- 6 Place boards in garden. Sawash bugs, etc. will gather underneath. Check early each morning and destroy.



Although some organic fertilizers and pesticides are available at garden stores or through seed catalogs, many are not. To find them, contact your County Extension Agent for information.



KEYS
TO
SUCCESS

- Apply enough organic material to supply enough nutrients for your garden.
- Use recommended and disease-resistant varieties.
- Keep weeded and remove diseased plants.

Other bulletins in this series provide additional information on vegetable gardening.

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