



START A FARM IN THE CITY

**LOADS OF
RESOURCES
FOR URBAN
FARMERS**

**TRANSFORM
YOUR HOOD
FOR GOOD**



**CHANGE YOUR COMMUNITY
BY GROWING WHAT YOU EAT**

A Publication of ATTRA – National Sustainable Agriculture Information Service • 1-800-346-9140 • www.attra.ncat.org

ATTRA—National Sustainable Agriculture Information Service is managed by the National Center for Appropriate Technology (NCAT) and is funded under a grant from the United States Department of Agriculture's Rural Business-Cooperative Service. Visit the ATTRA Web site, www.attra.ncat.org, for more information about ATTRA's services and publications.

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Urban Farms Cultivate Food and Community

by Lee Rinehart, NCAT Northeast Regional Director

Urban farming is not a new concept, but it is gaining new support among diverse citizen groups all over the country. Schools, colleges, churches, city councils, government agencies, parks departments, anti-hunger groups, healthcare providers, and nonprofit organizations are coming together to give a fresh new meaning to “greening the city.” Large cities like Philadelphia, Boston, New York, Seattle, and Toronto have initiated substantial programs to foster urban agriculture.

In addition to community gardens and farmers’ markets, urban agriculture involves land use decisions, nutritious meals at schools, employment and job training, food processing and delivery, the creation of clean green working spaces in urban areas, citywide systems of composting waste, and much more. Many of the new urban gardeners grow tons of food on small plots, provisioning farmers’ markets, restaurants, food banks, and community-supported agriculture share boxes.

San Francisco civic center was the site of a large victory garden in summer 2008. The city food policy now promotes urban agriculture on public land, supports local farmers, and calls for healthy local food at schools, jails, shelters, and city events. Photo: Kristin Reynolds.



Urban farmers are often community-minded individuals engaged in urban renewal and economic revitalization. Urban agriculture has the potential to relieve food insecurity, make neighborhoods safer, and improve regional economies. To learn more, contact lee@ncat.org, 570-696-6706.

ATTRA—the National Sustainable Agriculture Information Service—offers hundreds of free publications about specific crops, livestock, pest management, energy, marketing, and other agriculture-related topics. All of these are available to download for free from ATTRA’s Web site, www.attra.ncat.org

Call 1-800-346-9140, 8 a.m. to 8 p.m. Eastern time to order a free paper copy or to speak with one of ATTRA’s sustainable agriculture specialists.

ATTRA is a project of the National Center for Appropriate Technology (NCAT), with offices in Pennsylvania, Louisiana, Iowa, Arkansas, Montana, and California.

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ATTRA Publications for Urban Farmers

Alternative Soil Testing Laboratories (IP105)
Bringing Local Food to Local Institutions (IP242)
Community Supported Agriculture (IP289)
Direct Marketing (IP113)
Enterprise Budgets and Production Costs for Organic Production (RL041)
Farmers’ Markets (IP146)
Organic IPM Field Guides (online & CD only)
Keys to Success in Value-Added Agriculture (IP172)
Market Gardening: A Start-Up Guide (IP195)
Organic Greenhouse Vegetable Production (IP078)
Resource Guide to Organic & Sustainable Vegetable Production (IP188)
Scheduling Vegetable Plantings for Continuous Harvest (IP323)
Selling to Restaurants (IP255)
Sustainable Small-Scale Nursery Production (IP104)
Sustainable Soil Management (IP027)
Worms for Composting: Vermiculture (IP110)
Coming Soon: Urban Ag Start-Up Guide

START A FARM IN THE CITY

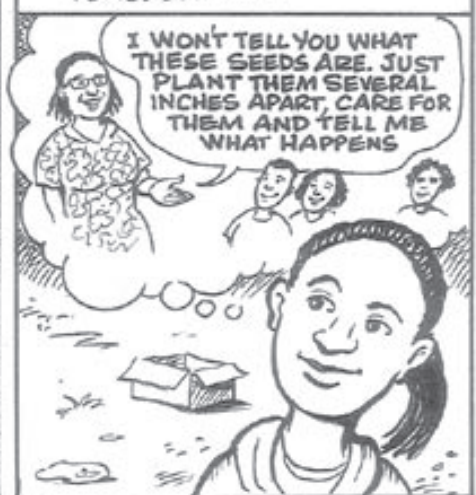
OUR STORY OPENS WITH A HANDFUL OF SEEDS



DESEA STANDS LOOKING AT AN OLD VACANT LOT



SHE REMEMBERS WHAT HER TEACHER SAID



OH, HERE'S AN OLD SPOON I CAN USE TO DIG WITH



IF YOU GROW... I'LL TAKE CARE OF YOU



DESEA RUNS BACK TO HER APARTMENT NEXT DOOR TO THE EMPTY LOT TO GET SOME WATER



EVERYDAY AFTER SCHOOL DESEA RUNS TO CHECK ON THE PLANTED SEEDS IN THE ABANDONED LOT



FINALLY, FIVE DAYS AFTER SHE PLANTED THE SEEDS, THE FIRST SEEDLINGS EMERGE



DESEA'S MOTHER SHARES HER EXCITEMENT



BEFORE DESEA AND HER MOM BUY SEEDS, THEY NEED TO CLEAR THE LOT. RETIRED NEIGHBOR, BILL, SEES THEM WORKING AND COMES BY

WHAT ARE YOU FOLKS UP TO?

HI BILL, WE'RE CLEANING UP THIS JUNK SO THAT WE CAN START A GARDEN



I DON'T HAVE ANYTHING ELSE TO DO, SO HOW ABOUT IF I HELP OUT?



HOURS LATER A CORNER OF THE LOT IS CLEAR OF JUNK

YOU HAVE A CLEAR PATCH, BUT THIS SOIL NEEDS LOOSENING UP. YOU NEED TO MAKE SOME BEDS

BEDS FOR PLANTS?



PLANTS NEED LOOSE SOIL TO GROW THEIR ROOTS AND TO ABSORB WATER. LET'S MAKE A BED TO SEE WHAT THE SOIL'S LIKE. I GOT SOME OLD SHOVELS BACK AT MY PLACE



THEY START DIGGING A BED TURNING UP BRICKS, NAILS, OLD BOTTLES AND CANS, WHICH THEY REMOVE. SOON, THEIR FIRST BED IS DONE



NOW WE'RE READY TO PLANT SOME SEEDS

YOU KNOW YOU'RE GOING TO HAVE TO WATER THE SEEDS



SIX WEEKS LATER, WITH BILL'S HELP, THE GARDEN HAS GROWN IN MANY WAYS



NEIGHBORS START TAKING AN INTEREST IN DESEA'S GARDEN

DESEA WITH HER TEACHER...

THANKS TO THE SEEDS YOU GAVE ME, WE NOW HAVE A GARDEN! WE HAVE SOME FLOWERS AND VEGETABLES



THAT'S WONDERFUL! WHY DON'T YOU READ THIS PAMPHLET. IT HAS SOME USEFUL GARDENING INFO

LATER THAT DAY, DESEA SHOWS HER MOM THE PAMPHLET

HMM... INTERESTING

YOU KNOW, MOM, WE SHOULD USE THIS INFORMATION TO MAKE A BIGGER GARDEN FOR THE WHOLE NEIGHBORHOOD



WOW, THERE ARE A LOT OF BENEFITS TO HAVING AN URBAN GARDEN



- SAVES FOOD DOLLARS
- PROVIDES FRESH, LOW CALORIE, NUTRITIOUS FOOD
- CAN CHANGE DIET OF GARDENERS
- GARDENING IS GOOD FOR PHYSICAL AND MENTAL HEALTH
- PROVIDES LEARNING OPPORTUNITIES FOR ALL AGES
- BRINGS PEOPLE OF THE NEIGHBORHOOD TOGETHER
- BEAUTIFIES THE NEIGHBORHOOD
- PROVIDES BIRD AND BUTTERFLY HABITAT

IT SAYS HERE THAT EVERY \$1 INVESTED IN A COMMUNITY GARDEN PLOT YIELDS APPROXIMATELY \$6 WORTH OF VEGETABLES*

THAT SURE SOUNDS GOOD ON A TIGHT BUDGET



DESEA SEES THAT THE NEXT PAGE HAS A LIST OF CHALLENGES TO URBAN GARDENERS

IN OLDER CITIES ESPECIALLY, YOU SHOULD TEST THE SOILS FOR LEAD BEFORE GROWING FOOD OR EVEN BEFORE ALLOWING SMALL CHILDREN TO ENTER AND PLAY IN THE GARDEN SPACES

TO REDUCE RISK OF HEAVY METAL CONTAMINATION IN URBAN SOILS:

- RESEARCH THE HISTORY OF THE GARDEN SITE EVEN IF SITE DOESN'T HAVE AN INDUSTRIAL PAST, LEAD CONTAMINATION FROM LEAD PAINT AND LEADED GAS IS STILL A POSSIBILITY
- ADD LOTS OF COMPOST TO THE SOIL
- TEST FOR LEAD OR OTHER LIKELY HEAVY METAL CONTAMINATION



SOUNDS PRETTY SERIOUS!

I DIDN'T REALIZE THE SOIL MIGHT BE A PROBLEM...



MOM, LET'S TAKE SOME SAMPLES AND SEND THEM TO THE SOIL LAB AT THE UNIVERSITY ** AND I'LL FIND OUT ABOUT THE HISTORY OF THE PLOT

DESEA AND HER MOM TAKE SOME SOIL SAMPLES



AS THEY'RE WAITING FOR THE SOIL SAMPLE RESULTS, DESEA VISITS THE LOCAL LIBRARY AND GETS HELP FROM THE LIBRARIAN

HMM... ACCORDING TO THESE OLD RECORDS, THE CITY OWNS THE LOT FOR BACK TAXES... USED TO BE A SMALL BUILDING THERE THAT WAS TORN DOWN



* Hynes, H. Patricia. 1996. A Patch of Eden: America's Inner City Gardeners
Chelsea White River Jct., VT: Green Publishing Company
** See info on pg. 9-12

WHEN THE SOIL TEST RESULTS COME IN...

MOM, IT SAYS HERE THAT THE SOIL BY THE STREET IS 290PPM LEAD (PPM = PARTS PER MILLION) BUT THAT THE SOIL AWAY FROM THE STREET IS ONLY 60 PPM!*



WELL THEN, LET'S PLANT OUR FLOWERS BY THE STREET AND EDIBLES AWAY FROM THE STREET

DESEA AND HER MOM ORGANIZE A PLANTING PARTY TO GET THE SITE READY FOR PLANTING AND THEY MAKE A PLANTING MAP FOR THE AREA

SO, LET'S EXPAND THIS AREA FOR PLANTING THE DIFFERENT VEGETABLES

AND WE'LL PUT THE FLOWER BEDS OVER THERE



THE NEIGHBORS SHOW UP FOR THE PLANTING PARTY AND START IN BY CLEANING UP THE PLANTING AREA



IT TAKES 2 SATURDAYS, BUT FINALLY ALL THE TRASH IS REMOVED AND THE SOIL IS READY FOR PLANTING



AFTER THE SEEDS ARE PLANTED THE NEIGHBORHOOD STARTS SEEING RESULTS:

WEEK #1



WEEK #3



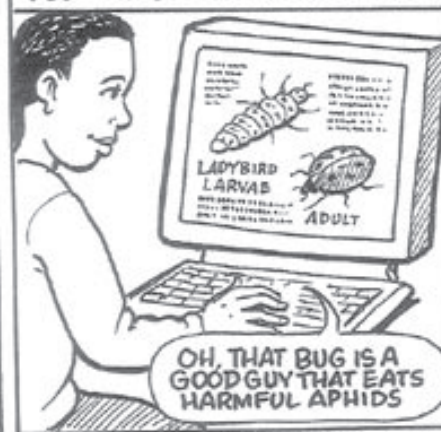
WEEK #6



THERE ARE A FEW BUGS IN THE PROGRAM (OR THE GARDEN, ACTUALLY) DISCOVERED BY DESEA



DESEA HEADS BACK TO THE LIBRARY COMPUTER AND RESEARCHES A PUBLICATION, "ORGANIC IPM FIELD GUIDE" ** WITH PICTURES OF THE "PEST" SHE JUST SAW IN THE GARDEN

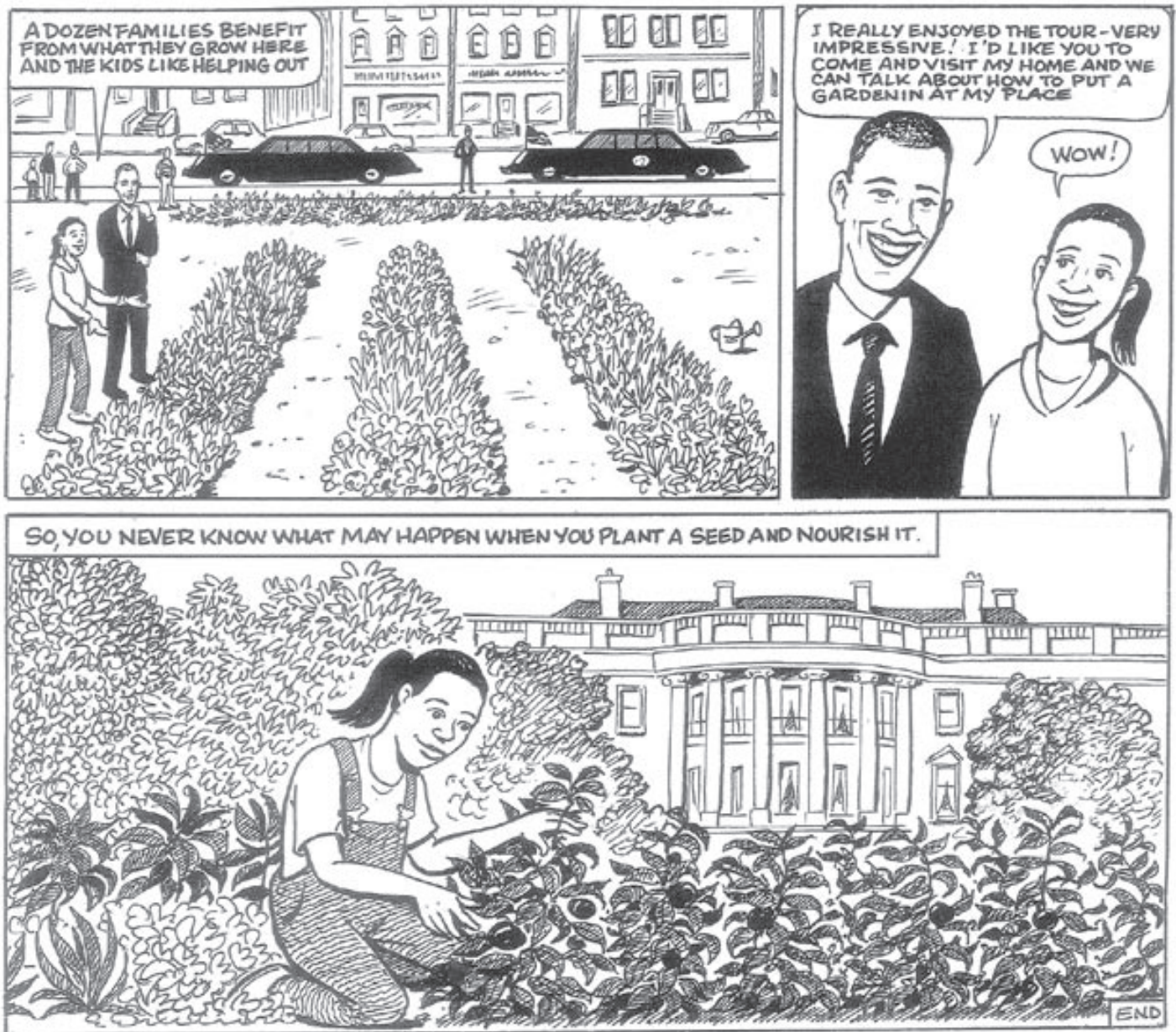


THE NEXT SATURDAY MORNING DESEA IS SHOCKED TO FIND THAT THE GARDEN HAS BEEN VANDALIZED!



* See pg 9 for information on lead levels in soils
** more info @ http://www.attra.org/attra-pub/summaries/organic_ipm.html





Selected International Resources for Urban Agriculture

City Farmer—Canada's Office of Urban Ag maintains an outstanding Web site with interesting commentaries and links from all over the world. Web site: www.cityfarmer.info

Food for the Cities is a project of the United Nations focused on improving nutrition, and food production systems in the world's cities. Web site: www.fao.org/fcit

Guerilla Gardeners started in London growing gardens on unused land. Members now farm neglected "orphan" land internationally. Web site: www.guerrillagardening.org

Heifer Project International's Urban Initiative supports and sponsors many community urban farming programs in U.S. cities and abroad. Web site: www.heifer.org

Journey to Forever provides an extensive resource list on urban agriculture, nutrition and community develop-

ment. Web: www.journeytoforever.org/cityfarm_link.html

Sustain began in the U.K. to promote food and farm practices that enhance the health and welfare of people and the environment. Web site: www.sustainweb.org

RUAF Foundation provides extensive resources such as *Urban Agriculture Magazine*, available in English, Spanish, French, Arabic, Chinese, Portuguese, Turkish. www.ruaf.org

Urban Chicken Wiki for North America lists laws and info about keeping chickens in urban zones. Web site: www.urbanchickens.pbwiki.com/North-American-Chicken-Laws

Urban Harvest works to enhance food security for poor urban families in Africa and South America. They offer practical resources as well as statistics and databases to monitor global urban trends. Web site: www.uharvest.org

Urban Soils and Soil Testing: Avoiding Lead & Other Heavy Metals

Before you plant any food crops in an urban area, it's important to assess the risk of soil contamination by heavy metals. The most commonly found metals are lead (from lead paint), cadmium, nickel, and mercury. Pregnant mothers and young children should avoid exposure to these heavy metals. The effects of these metals on the body and the brain are many, varied, and should be avoided. Strategies to reduce risk of heavy metal contamination include the following:

- Improve soil stability through crop plantings and soil amendments like mulch, which reduce wind-borne dust and the tracking of contaminated soils into residences by human feet and household pets.
- Emphasize fruiting plants—including vegetables like peppers and eggplants—in the garden, rather than green leafy vegetables and root vegetables that absorb heavy metals about ten times faster than do fruiting plants.
- Add compost and/or calcium to the soil to lower soil acidity and reduce the metal “uptake” by plants. The more acidic the soil, the easier it is for plant roots to take in high levels of heavy metals such as lead. People and animals who eat those plants can be poisoned by the metals.
- In highly contaminated soils, grow ornamental plants rather than edible plants. You will still reap the rewards of beauty, exercise, and healthy cities.
- Use phytoremediation. Cultivate highly absorptive plants to “take up” heavy metals from the soils. Do not eat these contaminated plants and be careful where you dispose of them.
- Use raised beds, container gardens, and hydroponics to avoid many contamination problems.

Background lead levels in U.S. agricultural soils range from 7 to 40 parts per million (ppm—this is the same as milligrams per kilogram). In most cases, levels higher than this are the result of lead contamination of some sort (Holmgren, et.al., 1993). Plants



Residents of Wilkes-Barre, Pennsylvania create a garden at an intersection on the edge of the Wilkes University campus. The project is co-sponsored by NCAT and SPIN (Small Plot Intensive) Farming. Photo: Lee Rinehart, NCAT

do not generally take up lead in significant concentrations unless there are very high levels of lead in the soil. Keeping the soil pH level—the relative acidity of the soil—at 6.5 or higher will help minimize lead contamination of produce.

The standards for “safe” lead levels are 100 ppm if there are small children who may eat the soil, or 300 ppm for simply growing produce (Rosen, 2002). The most practical approaches for dealing with lead in soils are the following:

- Immobilize the lead by reducing the soil acidity and adding organic matter followed by planting of sod.
- Mix or cover the high-lead soil with clean, low-lead soil.

Locations adjacent to busy streets, and right next door to old buildings may be more likely to have lead pollu-

Soil Lead Levels		
Lead Level	Extracted Lead (ppm)	Estimated Total Lead (ppm)
Low	less than 43	less than 500*
Medium	43 to 126	500 to 1,000
High	126 to 480	1,000 to 3,000
Very High	greater than 480	greater than 3,000
*At present, total soil lead levels less than 200 ppm have not been associated with elevated blood lead levels in young children. If estimated soil lead levels are above 300 ppm however, young children and pregnant women should avoid soil contact.		
Table from Earthworks website. “Soil Lead Levels—Interpretations and Recommendations,” www.earthworksboston.org/replicate/A_Soil_Lead_Levels.htm		

tion from leaded gas and lead paint, respectively. Metals also may have been deposited by past industrial activities, such as battery production, brass and steel manufacturing, mining, and many different processes involving nickel, cadmium, copper, and lead. Lead is especially evident near roadways because of automobile emissions before the availability of unleaded gasoline, and automobile demolition areas may contain a variety of metals that were commonly used in older cars. As lead paints and some window blinds and soldered pipes used in houses before 1978 wear out and deteriorate, they add lead to nearby soils.

Metal contamination on a site may be shown by poor plant growth, odd animal behavior, or paint flecks containing lead from older buildings. Many plants simply cannot grow where the level of certain metals is high. Other plants grow well in contaminated soil but fail to set seed or do not grow as well as expected. Absence of any plant growth is a warning sign that a site may be severely contaminated. Caution during sampling is needed. Total lead levels higher than 1,000 ppm are legally hazardous. Contact your state's Department of Environmental Protection regarding removal of contaminated soil materials.

Be sure to consult the references on urban soil contamination, testing and remediation here and on page 13. These will give you a better understanding of how to avoid problems in urban gardens.

Soil Testing Resources

Growing Gardens in Portland, Oregon conducts free soil testing for low-income families and provides resources for low-income families who want to have gardens at their homes.

Web site: www.growing-gardens.org

Soil and Plant Tissue Testing Lab at University of Massachusetts, Amherst welcomes samples from anywhere in the country.

Mailing address:

Soil and Plant Tissue Testing Lab

682 North Pleasant Street

University of Massachusetts

Amherst, MA 01003

413-545-2311, Fax: 413-545-1931

E-mail: soiltest@psis.umass.edu.

Web site: www.umass.edu/plsoils/soiltest

An order form and soil sampling instructions from the U Mass Amherst Testing Lab is supplied on pages 11 and 12 of this publication.

References on Urban Soil Contamination, Testing & Remediation

Urban Soil Primer for Homeowners and Renters, Local Planning Boards, Property Managers, Students, and Educators. J.M. Scheyer and K.W. Hipple, 2005. USDA-Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska. Provides information important in planning and managing land resources in a manner that helps to prevent or mitigate problems associated with sedimentation, contamination, runoff, and structural failure. www.soils.usda.gov/use

Overview of Public Health and Urban Agriculture: Water, Soil and Crop Contamination & Emerging Urban Zoonoses. Kathleen Flynn, 1999. Published by International Development Research Centre (IDRC). This report addresses the potential health hazards of farming and raising livestock in cities. www.cipotato.org/urbanharvest/documents/bibl_UA&publichealth.doc

Cadmium, Lead, Copper, and Nickel in Agricultural Soils of the United States of America. G.G. Holmgren, M.W. Meyer, R.L. Chaney, and R.B. Daniels, 1993. *Journal of Environmental Quality* 22:335-348. <http://jeq.scijournals.org/cgi/content/abstract/22/2/335>

Lead in the Home Garden and Urban Soil Environment. C.J. Rosen, 2002. University of Minnesota Extension Service. www.extension.umn.edu/distribution/horticulture/DG2543.html

Soil Contamination and Urban Agriculture: A practical guide to soil contamination issues for individuals and groups

By Alexandra Heinegg, Patricia Maragos, Edmund Mason, Jane Rabinowicz, Gloria Straccini, and Heather Walsh. 2002. McGill School of Environment, McGill University.

This is an illustrated primer on soil contamination for gardeners and community groups. It discusses the dangers of gardening in contaminated soil, the sources of contamination, how to evaluate the level of contamination, and your various options for addressing the problem. Written for Montreal and Canada, but also useful in other cities and countries.

Download at www.ruaf.org/index.php?q=node/1003

Soil Sampling Instructions

- Sampling can be done at any time; but if pH adjustments are necessary, test as early as possible prior to planting.
- Avoid sampling soils that have very recently been fertilized.

Soil Sampling Procedure

1. Soils that are distinctly different as judged by appearance, crop growth or past treatment should be sampled separately.
2. Each Sample submitted for testing should be a composite or mixture of approximately 12 separate scattered subsamples taken over a well-defined area.
3. Look your field or property over. Define a sample area based on uniformity of texture, slope, drainage, color, and past pest and fertility management.
4. Avoid sampling very wet soils. In soils where fertilizer has been placed in bands (rows), do not sample directly in a band. Try **not** to obtain samples very near the edge of the field or plot.
5. Using a clean spade, auger, or sampling tube **obtain soil from the surface through the primary rooting zone of the crop. Rooting depth will vary with crop type.** For most plants the top 6-8 inches is appropriate. For established grasses sample the top 3-4 inches.
6. Place each of the 12 randomly spaced samplings in a clean container (pail or bag) and mix thoroughly. Spread the mixture out on a clean paper to air-dry (do not place soil in an oven).
7. Mix the soil again. Obtain a one cup measure of the soil mixture add place it in a zip-lock type bag. **Label the outside of the bag clearly with your name, address, and your name for the sample (ID).**

Why Test Your Soil?

- to optimize crop production.
- to protect the environment from contamination by runoff and leaching of excess fertilizers.
- to aid in the diagnosis of plant culture problems.
- to improve the soil's nutritional balance.
- to save money and conserve energy by applying only the amount of fertilizer needed.
- to identify soils contaminated with lead or other heavy metals.

****** A soil test can be a valuable tool in assessing and preventing horticultural, agronomic, and some environmental problems. The tests listed above do not identify plant growth problems associated with soil drainage, insects, plant diseases (whether soil-borne or not), weeds, winter injury and the misuse of pesticides.

****** Pesticide residues and petroleum contaminants are not identified by these tests. Analyses for these are expensive, but may be obtained through the private sector.



UMass Extension Newsletters

Garden Clippings... for home gardeners; Provides a checklist of monthly gardening activities; Monthly March through October; \$10.00/year, check payable to UMass; **Send to:** Garden Clippings, French Hall, 230 Stockbridge Road, UMass, Amherst, MA 01003.

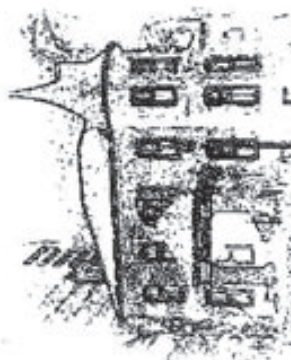
Hort Notes... for professional landscapers and grounds managers; Alerts reader to emerging landscape pests and timely plant health care problems; Bi-weekly from March through October; \$20.00/year, check payable to UMass; **Send to:** Hort Notes, French Hall, 230 Stockbridge Road, UMass, Amherst, MA 01003.

This form and more information on soil testing are available online at:
<http://www.umass.edu/soiltest>

UMassAmherst



Soil Testing



West Experiment Station

2009

UMASS Extension offers educational programs, materials and employment without regard to race, color, religion, creed, sex, age, national origin, and mental or physical handicap. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture.

Name _____

Address _____

City, State _____ Zip _____

Telephone _____

Please print clearly. Use one box per sample submitted

Sample Name: _____					Crop Code _____
A	B	C	D	E	Fee \$ _____
Sample Name: _____					Crop Code _____
A	B	C	D	E	Fee \$ _____
Sample Name: _____					Crop Code _____
A	B	C	D	E	Fee \$ _____
Sample Name: _____					Crop Code _____
A	B	C	D	E	Fee \$ _____
Sample Name: _____					Crop Code _____
A	B	C	D	E	Fee \$ _____
Make checks payable to: UMass Order Total \$ _____					

Comments: _____

Method of receiving results
(Choose one or include \$2 fee for additional format)

☐ US Mail (address above)

☐ Fax (_____) _____ - _____

☐ E-mail _____ @ _____

Office Use Only	
Received	Date
City	Bank
Cash	PO#

Mail samples, questionnaire and check payable to UMass to:

Soil and Plant Tissue Testing Laboratory
West Experiment Station
682 North Pleasant St.
University of Massachusetts
Amherst, MA 01003

Web: <http://www.umass.edu/soiltest>

*Sampling
Instructions
on Reverse
Side*

Crop Recommendation Codes

Home Landscape		Commercial Grower - Field Crops	
Crop	Code	Crop	Code
Vegetables	HV	Alfalfa	AL
Flowers, Herbs & Roses	HF	Field Corn	FC
Existing Lawn	HEL	Hay & Pasture	HP
New Lawn (unplanted)	HNL		
Needleleaf Trees & Shrubs	HN	Commercial Grower - Vegetables	
Deciduous Trees & Shrubs	HD	Crop	Code
Acid-loving Trees & Shrubs	HA	Asparagus	AS
Strawberries	HS	Beets, Swiss Chard	BE
Blueberries	HB	Cauliflower, Cabbage	CO
Raspberries	HR	Carrots, Parsnip	CA
Grapes	HG	Celery	CE
		Eggplant	EG
Commercial Grower - Fruit		Gourds (ornamental)	GO
Crop	Code	Lettuce, Endive, Escarole	LE
Tree Fruit	TF	Melons, Cucumbers	CU
Blueberries	BL	Onions, Leeks	ON
Brambles	BR	Peas	PE
Cranberries	CR	Peppers	PP
Grapes	GR	Potatoes	PO
Strawberries	ST	Pumpkins, Squash	PU
		Radishes	RA
Commercial Grower - Ornamentals		Rutabagas, Turnips	TU
Crop	Code	Snap Beans	BE
Commercial Turf	CT	Sweet Corn	SW
Golf Fairways	GF	Spinach	SP
Golf Greens & Tees	GG	Tomatoes	TO
Nursery Deciduous	ND	Other	UNK
Nursery Needleleaf	NN	(explain)	
Nursery Acid-loving	NA		

Soil Test Types & Price List

A. Soil pH	\$5.00
Provides a simple soil pH test and an estimate of how much lime, sulfur, or other additive is needed to correct soil pH.	
B. Standard Soil Test	\$9.00
Provides pH, Buffer pH, Extractable Nutrients, Extractable Heavy Metals (e.g. Lead), Cation Exchange Capacity, and Percent Base Saturation. Recommendations for nutrient and pH adjustment are included with results.	
C. Standard Soil Test w/ Organic Matter	\$13.00
Same as Standard Soil Test plus a determination and interpretation of the Percent Organic Matter in the soil sample.	
D. Soil Texture (only)	\$60.00
Provides a determination of the USDA Textural Classification by combined Hydrometer Analysis of silts and clays and Dry Sieving of sands. Results presented in tabular format. This test does not include the Standard Soil Test.	
E. Soluble Salts	\$5.00
Provides a measure of Electrical Conductivity of a 1:2 (soil:water) water extract.	

Creating Barriers to Protect Raised Beds on Urban Soils

Ideas, methods and sources compiled from the Comfood listserv, <https://elist.tufts.edu/www/subscribe/comfood>
by Justin Freiberg, justin.freiberg@gmail.com

- Try landscape fabric, which allows moisture to pass through while suppressing weeds (and in this case, plant roots from growing through). www.FarmTek.com
- You could put wood chips down before building the beds and adding soil. Wood chips can be obtained for free. Gravel also works but it costs money.
- Cedar beds lined with mesh screen, filled with non-bio-degradable packing peanuts, and covered with durable, permeable landscape barrier fabric, then soil.
- For heavy metals like lead your job is really to keep plant roots from penetrating downwards through your barrier (and earthworms, etc. coming upwards)—both so that plants don't scavenge lead from the contaminated soil, and so that you don't mechanically mix the bad soil in with your good soil when the plants+roots+soil get pulled up at the end of the season. The chemistry of most garden soils keeps heavy metals in a fairly immobile, water-insoluble state (unless you start to get into seriously acidic sites—which is bad for growing most food crops anyway) so you don't have to worry about lead making its way upwards on its own like other sorts of chemical contaminants might.
- Our co-op uses boxes about 3 feet high. The top 18 inches are filled with soil. Underneath is heavy plastic mesh that allows water to seep through, but retains the soil. I grow annuals and vegetables in the boxes.
- For our GIFT Gardens program, we build 8x2x10 inch elevated beds up off the ground using concrete blocks to elevate it, hardware cloth as a bottom reinforced by slats of lumber, and cypress or cedar lumber to build the raised bed. This method seems to work well for folks with physical disabilities.
- Another thing to keep in mind is that lead contamination typically drops off rapidly with depth (again, due to its relative immobility in the soil environment). This means that you could conceivably do some systematic testing of your soil at different depths, decide that soil below xx inches depth is safe for growing, and then remove the upper soil to another location on site. We used to do this on really contaminated sites by digging a deep pit and effectively flipping the soil. You could dump your contaminated horizons from each garden bed on site into a single big pit that you dig. And you can use the “clean” diggings to start refilling your beds. You will

need an in-ground edging or an actual raised bed structure to keep adjacent soil from migrating in laterally.

Using Various Containers as Beds

- Austin just switched recycling from large plastic curbside bins to rollable dumpsters. All those old bins would make great gardening containers, due to their size. Deep and big enough but not too big, easily moveable.
- I was involved in a project in Chicago that uses hard plastic kiddie wading pools with good soil placed on urban lots with high lead soil. Punch holes in the bottom for water permeability. This was in the Austin neighborhood of Chicago.
- I'd suggest an EarthBox type thing. I've just helped a Brooklyn homeowner install almost 70 on her rooftop that we hand-made because the cost was prohibitive.

Keeping Dust Down on Paths

- Contaminated soil on paths should be covered with something like woodchips, about 6 inches deep.
- To keep dust down consider sheet mulching with cardboard and covering with wood chip mulch.
- Throwing seeds of a durable plant like chamomile or clover will root the dust in place. Otherwise, use rocks.

For More Information

- <http://cwmi.css.cornell.edu/soilquality.htm>, includes information about soil testing, interpreting test results, and best practices for healthy soils. Check out the three fact sheets listed under “Resources for Healthy Soils”.
- www.nybg.org/green_up
- Bob Hyland, a champion of the sub-irrigated world, has a blog with links to groups working with Earth Boxes and directions for making your own sub-irrigation containers: www.insideurbangreen.org/2009/06/earthbox-organic-gardening-award-winner.html
- American Community Garden Association listserv has a good discussion thread on this topic: www.communitygarden.org
- <http://outrageousgardens.com>

Urban Agriculture Resources

Selected City Farming Businesses

All Edibles landscaping company in Berkeley/Oakland installs food gardens for clients. E-mail all.edibles@gmail.com. Web site: www.alledibles.com

My Farm is a decentralized urban farm whose members grow and exchange organic vegetables throughout San Francisco, transporting themselves and delivering the produce by bicycle. Web site: www.myfarmsf.com

Seattle Urban Farm Company establishes productive organic vegetable plots for clients in their yards. Web site: www.seattleurbanfarmco.com

SPIN Farming is a commercial vegetable farming system for areas of less than an acre. The group offers courses in intensive food production for small areas. Their curriculum provides very detailed information about what growers need, including layout, equipment, marketing, and costs. Contact rchristensen@infocommercegroup.com. Web site: www.spinfarming.com

Your Backyard Farmer in Portland, Oregon creates small sustainable organic backyard farms for clients. Call Robyn, 971-506-6508 or Donna, 503-449-2402, or e-mail farmers@yourbackyardfarmer.com. Web site: www.yourbackyardfarmer.com

Selected Nationwide Urban Agriculture Organizations

USDA Cooperative State Research, Education and Extension Service (CSREES) has offices in almost every county in the United States. They provide technical assistance and research for agriculture and community development.

Web site: www.csrees.usda.gov/Extension/index.html

Alternative Farming Systems Information Center (AFSIC) is a program of the USDA's National Agriculture Library, www.nal.usda.gov/afsic. They maintain a comprehensive section of their website called Farms and Community: Urban Agriculture and Community Gardening. 301-504-6559, afsic@nal.usda.gov. Web site: <http://tinyurl.com/http-afsic-nal-usda-gov-nal>

American Horticultural Therapy Association offers a great list of publications regarding urban gardening for people with physical or mental disabilities. 800-634-1603. Web site: www.abta.org

ATTRA—National Sustainable Agriculture Information Service offers free in-depth publications and technical assistance on production practices, innovative marketing, organic certification, and alternative crop and livestock enterprises. ATTRA's newsletters feature sustainable agriculture and organic farming news, events and funding opportunities. 800-346-9140 (English) or 800-411-3222 (Spanish), Web site: www.attra.ncat.org

American Community Gardening Association (ACGA) maintains an online search tool to find community gardens in neighborhoods across the country. Staff and volunteers answer requests for information about community gardening and networking. Toll-free 877-275-2242, vgarrett@communitygarden.org. Web site: <http://acga.localharvest.org>

Biological Urban Gardening Services (BUGS) is a California-based membership organization devoted to reducing reliance on toxic agricultural chemicals in highly populated urban landscapes. 916-726-5377, bugslrc@cwia.com. Web site: www.organiclandscape.com

Community Food Security Coalition's Urban Agriculture Committee offers an urban agriculture primer as well as urban agriculture courses, workshops, conferences, and an Urban Agriculture listserv. Contact Betsy Johnson, betsy@bgjohnson.com, 617-536-1711. Web site: www.foodsecurity.org/ua_home.html

MetroAg Alliance for Urban Agriculture brings together culturally diverse stakeholders to share best practices. Toll free 888-395-8528, info@metroagalliance.org. Web site: www.metroagalliance.org

Heifer International's Urban Agriculture supports grassroots organizations that help communities reclaim and support local food systems. Web site: www.heifer.org/site/c.edJRKQNiFiG/b.734893

Urban Chicken, based in Albuquerque, New Mexico, is dedicated to promoting backyard chickens in urban residential landscapes. We support chicken keepers in all urban environments across the U.S. and abroad. Web site: www.urbanchickens.org

Urban Farming creates an abundance of food for people in need by planting environmentally sustainable gardens on unused land, increasing diversity, educating youth, adults, seniors, and strengthening communities. Toll-free 877-679-8300, info@urbanfarming.org. Web site: www.urbanfarming.org

World Hunger Year (WHY) helps grassroots organizations and students fight hunger and poverty.

Web site: www.worldhungeryear.org

Selected State Urban Agriculture Organizations

California

California Food and Justice Coalition organizes workshops to help secure land, write leases, engage the community, conduct policy work, start up urban ag projects, and market produce to people who need it most.

Web site: www.foodsecurity.org/california/index.html

San Francisco

Aleman Farm produces food for the neighborhood and workshops on topics such as mushroom cultivation and perennial vegetables. An ecological horticultural training program offers apprenticeships. The farm's environmental education program introduces children and adults to the wonders of the natural world and the importance of local food production. Web site: www.alemanfarm.org

The Garden Project provides job training and support to former offenders. Apprentices learn how to grow organic vegetables for seniors and families, cultivate plants for schools, establish and maintain gardens at police stations and housing developments, and carry out community clean-ups. 650-588-8253, feedback@gardenproject.org. Web site: www.gardenproject.org

Literacy for Environmental Justice—a coalition of youth, educators, and community leaders—addresses the ecological and health concerns of southeast San Francisco. Youth are planting gardens, restoring wetlands, operating a native plant nursery, and working with neighborhood stores to increase their stock of fresh produce. Web site: www.lejyouth.org

San Francisco Garden Resource Organization (SFGRO) links local community gardeners, school gardeners, and other open space and urban agriculture groups. They also provide links to community garden groups all across the country. Web site: www.sfgro.org

Oakland

City Slicker Farms grows and distributes affordable fresh food for West Oakland. They help the community grow with a weekly farm stand, workshops, and backyard gardens all over the Bay Area. 510-763-4241. Web site: www.cityslickerfarms.org

Mo' Better Food uses agriculture as an educational tool to empower low-income neighborhoods to increase ownership and self-sufficiency within the community. Contact David Roach, info@mobetterfood.com.

Web site: www.mobetterfood.com

People's Grocery is building a local food system to improve the health and economy of West Oakland. Their Urban Agriculture program supplies fresh food through a network of urban gardens and a suburban farm. 510-652-7607. Web site: www.peoplesgrocery.org

Southern California

Center for Urban Agriculture at Fairview Gardens in Santa Barbara is a 12-acre farm that feeds approximately 500 families. The center runs an education program to teach the community about the connections between food, land and well-being. They offer farm-to-school programs, cooking and gardening classes, farm festivals, guided tours, and apprenticeships. 805-967-7369. Web site: www.fairviewgardens.org

The Learning Garden at Venice High School is a joint effort with the UCLA horticulture department and various community groups. In the garden, volunteers and students learn to grow food for the neighborhood. The garden is also a community center with classes about yoga, cooking, tai chi, and other health-related subjects. 310-722-3656. Web site: www.thelearninggarden.org

UC Cooperative Extension's Common Ground Program makes gardening possible for Los Angeles County's low-income and traditionally underrepresented families. Families learn to grow and prepare their own food. The program trains community volunteers and Master Gardeners, and publishes a school garden set-up guide and a community garden set-up guide in English and Spanish. Web site: http://celosangeles.ucdavis.edu/Common_Ground_Garden_Program

Seeds at City Urban Farm is a partnership between San Diego City College, Roots Sustainable Food Project, and two local high schools. Students and community volunteers learn and work together with professional organic farmers. They grow food for themselves and for those who have no access to fresh organic produce. Contact Karon Klipple, kklipple@sdccd.edu, 619-388-3638. Web site: www.seedsatcity.com

Colorado

Growing Gardens runs gardening programs in Boulder County. They manage community gardens, youth programs, neighborhood compost and greenhouse proj-

ects, and a community food project. Contact Ramona Clark, 303-413-7248 ext. 2, info@growinggardens.org. Web site: www.growinggardens.org

Denver Urban Gardens runs and helps recruit volunteers for nearly 100 community gardens and their outreach and education programs. They provide classes, free seeds and seedlings from their nursery to thousands of gardeners every year. Web site: www.dug.org

Connecticut

Grow Hartford, a project of the Hartford Food System, promotes a sustainable and equitable food system by cultivating youth leadership and civic participation through agriculture. 860-296-9325. Web site: www.hartfordfood.org

Delaware

Delaware Center for Horticulture cultivates a greener community through horticulture, education and conservation. Programs include greening initiatives such as community gardens, public landscaping, and tree planting. Contact Ann L. Mattingly, community gardens manager, 302-658-6262. Web site: www.dehort.org

Georgia

The Funny Farm: Organic gardener Duane Marcus maintains an informative blog on his urban agriculture experiments at <http://happyfood-funnyfarm.blogspot.com>, and also offers workshops on intensive gardening. Web site: <http://web.mac.com/duanemarcus/Happyfoodfromthefunnyfarm/HOME.html>

Georgia Center for Urban Agriculture is a Cooperative Extension website with information about home gardening, landscaping, water resources, research gardens, Spanish language resources, and maps to community gardens. Web site: <http://apps.caes.uga.edu/urbanag/index.cfm>

HABESHA Gardens in Atlanta is a community garden project of Black to Our Roots. They raise food for the neighborhood, teach about organic gardening and healthy living, train youth leaders, sponsor the annual Organic Fest, and promote communities that are sustainable and environmentally sound. Web site: www.habeshainc.org

Illinois

Growing Home provides job training through a nonprofit organic agriculture business in Chicago. The job training program lasts seven months so interns have a

chance to participate in the entire growing season from seed to harvest. Interns market produce through a CSA, a farmers' market and a farm stand. 773-549-1336. Web site: www.growinghomeinc.org

Kansas

Kansas City Center for Urban Agriculture is working toward a vision of small, community-based farms that provide fresh food, work opportunities, and productive use for vacant urban spaces. The Center develops training and research programs for new and experienced farmers and operates the Kansas City Community Farm, a certified organic vegetable farm. 913-831-2444, info@kccua.org. Web site: www.kccua.org

Massachusetts

The Food Project's mission is to create a thoughtful and productive community of youth and adults from diverse backgrounds who work together to build a sustainable food system. They produce healthy food, provide youth leadership opportunities, and inspire people to create change in their own communities. 781-259-8621, info@thefoodproject.org. Web site: www.thefoodproject.org

Nuestras Raíces manages community gardens and youth gardens. Tierra de Oportunidades is a beginning farmer training project with a farm stand in Holyoke. The environmental conservation and stewardship project includes a youth development initiative, cultural activities, and nature trails. 413-535-1789, info@nuestras-raices.org. Web site: www.nuestras-raices.org

Michigan

Garden for Growth—a project of the Michigan Land Bank Fast Track Authority—encourages interested individuals and nonprofit organizations to lease vacant parcels of land for \$50 per year to create an agricultural space in their community. 517-636-5149. Web site: www.michigan.gov/landbank.

Garden Resource Program Collaborative is a team effort of Detroit Agriculture Network, Greening of Detroit, Capuchin Soup Kitchen's Earthworks Garden, and Michigan State University. Programs include Urban Roots Community Garden Training, Detroit Urban Garden Education Series, Sweet On Detroit beekeeping, and Keep Growing Detroit season extension. Contact Ashley Atkinson, 313-237-8736, aatkinso@umich.edu. Web site: www.detroitagriculture.org

Seeds of Solidarity Education Center is a nonprofit organization that provides people of all ages with inspiration and practical tools to use renewable energy and grow food in their communities. The organization is based at a farm that grows and markets specialty greens, garlic and flowers. Solar greenhouses extend the growing season and renewable energy powers the center. 978-544-9023. Web site: www.seedsofsolidarity.org

Minnesota

Minnesota Food Association leases a 200-acre farm as an agricultural training center for immigrant farmers. They market their produce wholesale as well as through a CSA, a farmers' market, and direct to local stores and restaurants. The program strengthens the local food system and creates opportunities for farmers. 651-433-3676. Web site: www.mnfoodassociation.org

New York

East New York Farms! is a collaborative project that promotes local and regional sustainable agriculture and community-based economic development. They grow food for the community and engage youth in leadership training. 718-649-7979 x14. Web site: www.eastnewyorkfarms.org

Green Guerillas uses a unique mix of education, organizing, and advocacy to help people cultivate community gardens, sustain grassroots groups and coalitions, engage youth, paint colorful murals, and address issues critical to the future of their gardens. 212-594-2155, info@nycgreen.org. Web site: www.greenguerillas.org

Just Food hosts the **City Farms** project, which works to increase food production, marketing and distribution via community gardens throughout New York City. Available for purchase on the Just Food site is *The City Farms Toolkit*, a comprehensive guide to urban agriculture in NYC. Contact Emily Gunther, farmer outreach associate, 212-645-9880 x 231, emily@justfood.org or info@justfood.org. Web site: www.justfood.org

Ohio

Cleveland's **City Fresh** Market Garden Training Program is a learning network that promotes urban agriculture in Northeast Ohio. The program provides education on business planning and growing techniques, organizes youth entrepreneurship through summer employment opportunities, provides start-up funding for urban agricultural enterprises, and promotes sharing of tools, equipment, knowledge, and marketing. 216-220-5532. Web site: www.cityfresh.org

Pennsylvania

Greensgrow Farms is a nationally recognized leader in urban farming, selling fresh produce to local restaurant. They run a premier farm stand stocked with the very best the region has to offer, a well-stocked nursery offering a variety of great locally grown plants and if that wasn't enough, a CSA. Web site: www.greengrow.org

West Philadelphia's **Mill Creek Farm** is a collectively run urban education farm that grows and distributes produce and demonstrates ecological methods of living. The farm offers field trips, skill-sharing workshops, and job training for youth. E-mail millcreekfarm@resist.ca. Web site: www.millcreekurbanfarm.org

Texas

Sustainable Food Center's Grow Local program in Austin believes it's important that everyone have the opportunity to reap the benefits of growing their own food. They provide support for community and youth gardens in backyards, churchyards, office building lawns, etc. 512-236-0074, info@sustainablefoodcenter.org. Web site: www.sustainablefoodcenter.org

Urban Harvest in Houston has a network of urban gardens, farms and orchards that inspire and empower people of diverse backgrounds to grow food in the city. Programs include organic gardening classes, school & youth gardens, an after-school program, the Bayou City Farmers' Market, community gardens, and an organic horticulture business-education alliance. 713-880-5540, info@urbanharvest.org. Web site: www.urbanharvest.org

Vermont

Intervale Center's Healthy City Program provides job and life skills training for at-risk youth ages 13 to 16, to ensure better education about food—and better nutrition—in schools, and to address the needs of low-income families for fresh produce. Healthy City is creating a community of teens and adults dedicated to growing healthy food for themselves, their families, and others in the community. The program does this through the complimentary Healthy City Youth Farm, Gleaning Project and Burlington School Food Project. 802-660-0440. Web site: www.intervale.org

Washington

Seattle Youth Garden Works empowers homeless and under-served youth through garden-based education and employment. It is a market gardening program for youth ages 14 to 22 in the University District and South Park



Photo: Kristin Reynolds

Growing Power barn and sheep pens, Milwaukee, Wisc.

neighborhoods. The program goals are to connect youth to housing, health care, education, jobs, and community. 206-632-0352. Web site: www.sygw.org

Seattle P-Patch community gardens began in 1973 when the city bought a family farm for the public to use. Now there are 1,900 plots on 12 acres, with vibrant programs for new farmers, youth and seniors. Web site: www.cityofseattle.net/Neighborhoods/ppatch/history.htm

Washington, DC

Common Good City Farm is an urban farm and education center that grows food for low-income city residents. The group provides educational opportunities for all people to increase food security, community health, and environmental sustainability. 202-330-5945, info@CommonGoodCityFarm.org. Web site: www.commongoodcityfarm.org

Wisconsin

Growing Power's Commercial Urban Agriculture Training Program helps people manage their own farming business by practicing skills needed to profitably farm in the city. Begun in Milwaukee, they now have sites in Chicago and elsewhere. Training facilities include greenhouses, gardens, aquaponics, large-scale vermicompost and composting operations, anaerobic digestion, and a food distribution facility. Contact Jay Salinas, 414-527-1546, jay@growingpower.org. Web site: www.growingpower.org/commercial_urban_agriculture.htm

Milwaukee Urban Agriculture Network is a collaborative effort of local individuals and organizations interested in urban agriculture in Milwaukee. Projects include community gardens, ecology centers, youth training, school garden and lunch programs, planning groups, and city farms. Web site: www.MkeUrbanAg.org

Selected Urban Farm Publications

Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture. L.J.A. Mougeot. Earthscan, 2005. Reports on field projects funded by International Development Research Centre's Agropolis urban agriculture grants in Argentina, Botswana, Côte d'Ivoire, Cuba, France, Togo, Tunisia, UK, and Zimbabwe. www.idrc.ca/en/ev-84289-201-1-DO_TOPIC.html

Cities Farming for the Future—Urban Agriculture for Green and Productive Cities. Edited by René van Veenhuizen, 2006. Published by RUAF Foundation, IDRC and IIRR. www.ruaf.org/node/961

City Bountiful: A Century of Community Gardening in America. Laura J. Lawson, 2005. University of California Press. This book reviews the history of the greening of urban communities in the U.S. Web site: www.ucpress.edu/books/pages/9533.php

Civic Agriculture and Community Problem Solving. Thomas A. Lyson. Culture and Agriculture, Vol. 27, No. 2, pp. 92–98. 2005. American Anthropological Association. Civic agriculture embeds local food production in the community. http://colfa.utsa.edu/organization/culture&agriculture/04.CAG.27.2_092-098.pdf

Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities. A. Viljoen. Architectural Press, 2005. Viljoen extends and develops the widely accepted “compact city.” He provides a design proposal for sustainable urban agriculture. www.elsevier.com/wps/find/bookdescription.cws_home/703919/description#description

Cultivating Havana: Urban Agriculture and Food Security in the Years of Crisis. Catherine Murphy, 1999. Food First Development Report No. 12. After the break up of the Soviet Bloc in 1989, Cuba lost 85 percent of its trade, including food and agricultural inputs. This led to a 50 percent reduction in caloric intake in the early 1990s. Cuba restructured agriculture with local, low-cost and environmentally safe inputs. www.foodfirst.org/dr12

Edible Schoolyard: A Universal Idea. Alice Waters. Chronicle Books, 2008. A pioneering school garden, Berkeley, California's Edible Schoolyard is a visionary model for sustainable farming and childhood nutrition. This book is a call to action for schools across the country. www.chroniclebooks.com/index/main,book-info/store,books/products_id,7928/title,Edible-Schoolyard

For Hunger-Proof Cities: Sustainable Urban Food Systems. Edited by M. Koc, R. MacRae, L.J.A. Mougeot,

and J. Welsh. IDRC, 1999. The 20th century has witnessed a massive growth in urban populations. In 1990, one-third of the world's people lived in cities of one million or more. How do we build lasting urban food systems? www.idrc.ca/en/ev-9394-201-1-DO_TOPIC.html

General Plans and Zoning: Toolkit on Land Use & Health, L.M. Feldstein. Calif. Dept of. Health Services, 2006. Nutrition and other public health advocates now recognize the link between land use and food access. Here is an explanation of how land use decisions are made and how to effectively participate in those decisions. www.healthyplanning.org/toolkit/finalbook.pdf

Green Urbanism: Learning From European Cities. Timothy Beatley. Island Press, 2000. To find examples of a holistic approach to dealing with sprawl, one must turn to models outside the U.S. www.islandpress.org/bookstore/details.php?isbn=9781559636827

Growing Better Cities: Urban Agriculture for Sustainable Development. Luc J.A. Mougeot. IDRC, 2006. Over the next 25 years nearly all population growth will be in the cities of the developing world. 60% of the world's population will live in cities by 2030. More and more people in cities are growing some of their own food. But urban farming is often seen by cities as a problem to be eradicated rather than as a part of the solution. www.idrc.org.sg/en/ev-95297-201-1-DO_TOPIC.html

How Urban Farms Could Feed the World. An article in *Earth Island Journal* by Michael Ableman of Fairview Gardens. www.fieldsofplenty.com/writings/frontier.php

MetroFarm online magazine of metropolitan agriculture, and **MetroFarm: The Guide to Growing for Big Profit on a Small Parcel of Land.** By Michael Olson, who also produces a weekly radio show, Food Chain. Learn about Olson's projects at www.metrofarm.com

On Good Land: The Autobiography of an Urban Farm. Michael Ableman. 1998. Chronicle Books. Fairview Garden is a 12-acre farm now completely surrounded by suburban housing tracts. Ableman describes his 30+ year tenure and how he turned the farm into a valued community asset. www.chroniclebooks.com/index/main,book-info/store,books/products_id,814/title,On-Good-Land

On Guerilla Gardening: A Handbook for Gardening without Boundaries. Richard Reynolds, 2008. Bloomsbury USA. Started in London by gardeners who had no land to plant, this movement has spread around the world. Participants grow plants in street medians, parks and other private and public lands where they do not have permission to do so. www.guerrillagardening.org

A Patch of Eden: America's Inner City Gardens. H. Patricia Hynes. Chelsea Green, 1996. Interviews with founders of urban ag projects in Harlem, San Francisco, Philadelphia, and Chicago.

Planting for the Planet: The Cool Foods Garden Guide. Published by Center for Food Safety. The Guide is a how-to on everything from container gardening to composting, seed purchases, and home canning techniques. Contact: Meredith Niles, 202-547-9359. <http://coolfoodscampaign.org/your-tools/garden-guide>

Rural-Urban Migration and the Stabilization of Cuban Agriculture. Lisa Reynolds Wolfe, 2004. Global Exchange. Cuba's agriculture transformed from a system based on the "green revolution" to an agroecological system. How has this affected food security in the island's cities? www.foodfirst.org/cuba/cubaruralurban.html

Sustainable Agriculture and Resistance: Transforming Food Production in Cuba. F. Funes, L. García, M. Bourque, N. Pérez, P. Rosset. Food First Books. The story of Cuba's remarkable achievements in organic farming, urban gardens, smaller farms, animal traction, and biological pest control. www.foodfirst.org/node/361

Urban Agriculture: Food, Jobs and Sustainable Cities. United Nations Development Programme, 1996. J. Smit, A. Ratta, J. Nasr. Urban Agriculture Network. Reports on projects of the Urban Agriculture Initiative of the UNDP in Asia, Africa, and Latin America. Includes extensive research from diverse sources over many years. 202-362-5095. www.cityfarmer.org/smitbook90.html

Urban Agriculture Magazine. Resource Centres on Urban Agriculture & Food Security (RUAF). Platform for exchange and discussion of grounded information: research, project experiences, critical analyses of conventional & innovative policies. www.ruaf.org/node/100

The Urban Homestead. K. Coyne, E. Knutzen, 2008. Process Media. Filled with tips and details from experienced urban food producers. The authors' blog: homegrownevolution.com. Book: www.processmediainc.com

Urban Soil Primer for Homeowners and Renters, Local Planning Boards, Property Managers, Students, and Educators. J.M. Scheyer and K.W. Hipple, 2005. USDA-Natural Resources Conservation Service. Important information on how to prevent sedimentation, contamination and runoff. Free at www.soils.usda.gov/use

Vitalizing the Vacant. Annie Meyers, 2008. Describes six urban farms that each have different arrangements with the city where they are located. www.thoughtsonthetable.wordpress.com/2008/05/07/vitalizing-the-vacant

Social Justice and Urban Agriculture

By Kristin Reynolds, University of California, Davis

Urban agriculture can create ownership and leadership in food production among low-income urban residents, many of whom are people of color. Members of social justice movements may have different views of food system problems, but urban agriculture projects that are motivated by community food security, food justice, and food sovereignty have at least one common goal. They are working to make it possible for city people to grow, harvest, and consume culturally appropriate, fresh, healthy foods.

Three Food System Movements

Community food security (CFS) refers to a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice. (Community Food Security Coalition: www.foodsecurity.org)

Food justice reframes CFS and considers the social and economic inequities that give rise to food insecurity, emphasizing democracy and local community control. (Peoples' Grocery: www.peoplesgrocery.org)

Food sovereignty considers it a human right for people to be able to define their own food and agriculture systems and have access to healthy and culturally appropriate food produced through ecologically sound and sustainable methods. (Food First Institute for Food and Development Policy: www.foodfirst.org)



Photo courtesy of Kansas City Center for Urban Agriculture, www.kccua.org

Members of each of these movements who grow food in urban areas also cultivate leadership and community connections. While urban agriculture may not always be the central focus of food-system social justice movements, there is a possibility for urban food production to be a part of each movement's vision. Urban agriculture programs are diverse—ranging from youth development to food production and marketing—but they convey a common message that speaks to the relationship between agriculture and nutrition, food access, and community empowerment.

To learn more, contact Kristin Reynolds, karfireynolds@gmail.com. She would like to thank members of the Growing Food and Justice for All Initiative for providing comments on social justice and urban agriculture. GFJ is a national network aimed at dismantling racism and empowering low-income and communities of color through sustainable local agriculture: www.growingfoodandjustice.org



Photo courtesy of Seattle Urban Farm Company
www.seattleurbanfarmco.com

Start a Farm in the City: Change Your Community by Growing What You Eat

By Rex Dufour, NCAT Agriculture Specialist

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