

# Student Farm Studies Soil Remediation

By Tina Wright

The current rage for urban agriculture and its promise of lush, green renewal in blighted cities often runs up against the reality of questionable soil health. Cornell's Dilmun Hill Farm, the student-run organic farm on the fringe of the East Hill campus, is researching methods of mitigating heavy metal contamination of farming and gardening soils.

In a way, they had no choice. In 1996, when Dilmun Hill was split off from Cornell orchards, the student farm inherited land that had been treated with lead arsenic fungicide during the 1960s and '70s. Since 2008 the farm has been researching mitigation strategies to lessen the impact of lead and arsenic in food-producing soil. (Dilmun Hill's market garden is in an uncontaminated area that was not former orchard land.)

At their first outreach program on soil-remediation, Dilmun Hill folks educated around 25 people last Tuesday about their own projects and research that the Cornell Waste Management Institute (CWMI) is conducting with a grant from the National Institute of Health (NIH). Hannah Shayler of CWMI said the grant is funding a study of contaminated urban soil and strategies for dealing with contamination.

In this "Healthy Food, Healthy Communities" project, they are collaborating with the Department of Health in New York State, Cooperative Extension in New York City and the Green Thumb division of the New York City Parks Department, among others, in their

study that involves community gardens from New York City to Ithaca.

When soil samples taken in 2008 revealed high levels of lead and arsenic in some spots on the student farm, Melissa Madden, Organic Research Farm Coordinator, said there was at first a sense of panic. Should they move the student farm to a new location or cover the soil? The student managers and Dilmun Hill's steering committee took a deep breath and began a science-based risk assessment, focusing first on the health of workers at the farm. Safety courses emphasized that workers should minimize dust exposure and frequently wash off dirt when coming in from the fields.

On a warm, humid day, the student managers led visitors up the hill to their raised beds growing vegetables and explained the thinking behind the agriculture. As part of the National Institute of Health study, Dilmun Hill is conducting research to help establish Best Management Practices (BMP) for farming contaminated soil.

Student Manager Bonnie Cherner pointed out three raised beds and their differences: one was built on top of a tough fabric barrier, one has a layer of compost mixed with native soil at the bottom and then topsoil added, one bed has a cardboard base with raised bed built on top and the control raised bed has no barrier between native soil.

The key word of the day was "mitigation," not necessarily "remediation." For example, lead is an element and you can't break it down into something benign.



Photo by Tina Wright

Jonathan Russell-Anelli, left, of Cornell's Crops and Soil Science Department, looks on as student manager Elizabeth Goodwin describes research at Dilmun Hill Farm.

Strategies for dealing with lead generally involve testing soils and then avoiding exposure; in a way working around contamination rather than removing it. In general, most crops do not take up very much lead from the soils. Leafy vegetables show the most effect, followed by root crops. Fruiting plants of all kinds, whether tomatoes, peppers or apples, show the least contamination.

Best practices for healthy gardens include using clean materials such as uncontaminated soil, compost, manure or peat moss. Getting the soil's PH level near neutral not only helps create healthy plants, but metals are less bioavailable when acidity is reduced in soil.

Raised beds are the best bet in contaminated areas, and mulching walkways or planting grass in walkways can reduce soil-splashing and dust. Also, areas next to buildings tend to be the highest in lead, so flowers and ornamentals are recommended there.

Murray McBride, director of CWMI, is working on improved methods of testing contaminated soils. He showed workshop participants a field test for lead contamination in an outdoor laboratory, noting that testing protocols are a problem. EPA-approved labs can be expensive, and many home gardeners do not take enough samples to truly represent the soil quality.

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# Greens

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"Education is a national security issue," Clark said, explaining that education needs to be democratized. "An ignorant nation is an insecure nation, she added. "We need students in medicine, agriculture, energy and engineering."

Clark then pondered why New York state can't feed, clothe and house its citizens. "It's because our curriculum excluded agriculture," she said, adding that agriculture cuts across every aspect of our lives. "Our educational system must incorporate [courses focusing on] self-sufficiency.

"We must begin to talk about the wars," Clark said, listing numerous conflicts in which the U.S. has been and continues to be involved. "Cut the defense budget by 60 to 70 percent," Clark demanded, "and end the wars at home: poverty, injustice ... rebuilding infrastructure and funding programs that benefit children."

Both Clark and Lawrence adamantly oppose the "for-profit" healthcare system currently embraced by both major parties; they want to see a single-payer system that gives every person in the country access to medical care.

They invited Rebecca Elgie and Bernie Fetterly, of the Tompkins County Health Care Task Force, to talk about the current state of healthcare reform.

The recently-passed legislation is simply an extension of the for-profit health industry, said Elgie, noting that the task force is disappointed in the outcome of the healthcare debate. She called for Medicare for all, "something that expands and improves the current system." After criticizing the current administration, Elgie pointed out that one of the proposed bills (HR 676) would provide comprehensive care for everyone while saving about \$400 billion in administrative costs.

To learn more about Lawrence and Clark and their stand on the issues, visit [www.cecilelawrence.org](http://www.cecilelawrence.org) and [www.coliaclark.org](http://www.coliaclark.org).

## Oil Spill

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in helping in the Gulf area may contact the Deepwater Horizon response team at (866) 448-5816.

Another department at Cornell, the Lab of Ornithology, has also weighed in on the subject. They are asking, via the website [NestWatch.org](http://NestWatch.org), that birdwatchers report any evidence of the effects of

birds coming in contact with oil directly or by eating contaminated animals in the gulf area.

Again, Tompkins County residents can be of help, even without leaving home. Pat Leonard at the lab notes, "Many of the bird species that migrate into or through Tompkins County, including Red Winged Blackbirds and Tree Swallows, spend their winters in the gulf area. Making detailed notes of the number of birds that arrived and nested successfully this year and keeping track of the changes in those numbers over the next several years is important."

It's also possible that a bird directly affected by contact with oil, or having eaten oil-contaminated animals, will reach Tompkins County before it becomes sick or dies, she adds, noting that the oil and the aftermath of the spill will be with us for many years to come.

There may be a few birds that have started a second family this summer, so check nest locations in your yard and register that activity. If you notice a bird with oiled feathers, or a bird behaving abnormally next spring, or find a dead bird with no obvious explanation in your yard, follow the nest watchers code of conduct and the nest monitoring protocol and register your information on line at

[www.ebird.org](http://www.ebird.org).

You may also contact Leonard at 254-2137.

## Principal

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planning to do all of the normal things like attend student athletics and theater and musical performances," he says. "I'm also really interested in getting involved with the local chamber of commerce because I feel like that's an important role for a principal to take on. The school is a powerful force in the Trumansburg economy and also a key factor that relocators take into consideration."

He and his wife plan to live in the Trumansburg area and their two children will be entering fifth and second grade in September.

TCSO Superintendent Paula Hurley believes that Koeng will be an excellent addition to the district's administrative team and will bring consistency, vision, and a sense of community to the Charles O. Dickerson High School.

## Student Farm

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There is also no agreement on safe levels of lead. Dilmun Hill has adopted the level of 400 parts per million as a safe mark, given that is EPA's level for children's playgrounds.

Emma Landau, a junior in natural resources at Cornell's College of Agriculture and Life Sciences, is one of the student managers running the Best Management Practices study. Hoping that people will realize that there are strategies to cope with less-than-perfect soils, she says, "You are able to build these beds. These are the barriers you can use. We hope people will be encouraged."

Dilmun Hill will hold an open house on Thursday, Sept. 2, from 5-7:30 p.m. at the farm on Route 366 just east of the intersection with Pine Tree Road.

## Summer Cypher Event Announced

Unity Studio at the Southside Community Center will hold its second annual Summer CIPHER freestyle competition on Friday, Aug. 27. Registration begins at 4 p.m. with the competition starting at 4:30 p.m.

DJ Split Image will be spinning tracks and a panel of five judges will provide constructive feedback to contestants and award the prizes. Grand prizes include five free hours of recording time at Rep Studio, interviews on Hits 103.3, a 160 gig iPod, studio headphones, cash and lots more.

Contestants will be broken down into three age categories: 10-15, 16-21 and 21-plus.

Summer CIPHER will take place during the Congo Square Market. It will also be the culminating event in Southside's commemoration of Black August, which seeks to educate our community about injustices in history while focusing on the principles of unity, self-sacrifice, political education, physical fitness, resistance and spiritual renewal.

All who get on the mic must be registered. Rules of the event will be posted during registration. The Southside Community Center is located at 305 S. Plain St.

Contact Dani at Southside with questions at 273.4190 or [ddiacio@sscc-ithaca.org](mailto:ddiacio@sscc-ithaca.org).



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