

Greenlist Bulletin

From the Toxics Use Reduction Institute
at the University of Massachusetts Lowell

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In This Issue

Disinfecting Surfaces and Asthma

Growing Up With Pesticides

Comprehensive Assessment of a
Chlorinated Drinking Water
Concentrate in a Rat

Multigenerational Reproductive
Toxicity Study

Are you ready to report on conflict
minerals?

Cambridge firm developing
growable plastic

A Green Route to Petroleum
Feedstocks: Photochemistry of Fats
and Oils

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Quick Links

[Greenlist Bulletin Archives](#)

[TURI Website](#)



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This is the weekly bulletin of the TURI Library at the University of Massachusetts Lowell. Greenlist Bulletin provides previews of recent publications and websites relevant to reducing the use of toxic chemicals by industries, businesses, communities, individuals and government. You are welcome to send a message to mary@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.



Disinfecting Surfaces and Asthma

[Source: SENSOR Occupational Lung Disease Bulletin, Massachusetts Department of Public Health, Summer 2013](#)

This issue provides information about cleaning and disinfecting products, the differences between them, and the links to asthma. Cleaning and disinfecting impact work-related asthma in a number of industries – healthcare, school and early education – as well as influence the decisions made in purchasing and using products at home.

[Read more...](#)

TURI's Note: Read ["Asthma-Related Chemicals in Massachusetts: an Analysis of Toxics Use Reduction Data, 2009."](#)

Check out TURI's [2012 Asthmagens Fact Sheet](#) and a [Master List of Asthma-related chemicals](#).

Also read the most recent TURI technical report from an academic research grant, ["Preliminary Research Report: Comparison of Three Methods of Detecting Residual Microorganisms on a Cleaned/Disinfected Surface, 2013."](#)

Growing Up With Pesticides

[Source: Science, August 16, 2013](#)

Author: Amanda Mascarelli

SALINAS VALLEY, CALIFORNIA -- It's a sunny July day, sweltering by midmorning. Fields with meticulously maintained rows of lettuce and bushy, berry-laden strawberry plants stretch to the horizon. Farm workers wearing brightly shaded headscarves and layers of clothing -- most of them low-income Mexican immigrants -- dot the fields. This is "America's salad bowl," a region that grows much of the produce found in grocery stores throughout the country.

At about 3 p.m. in the afternoon, Guillermina Aguilar walks into a small office with her husband and their 12-year-old son Eric, who's about to undergo a series of tests. Aguilar and her family are part of a long-term study into the effects of pesticides and other environmental chemicals at the Center for the Health Assessment of Mothers and Children of Salinas, or CHAMACOS, which is also Mexican

slang for "little kids".

Aguilar enrolled in the study when she was pregnant with Eric. At the time, the family lived two blocks from the fields, where the pungent, sweet odor of pesticides often hung heavy in the air. "Sometimes in the mornings I remember I would ask my husband, 'What's that smell?'" Aguilar recalls. But they became accustomed to it. "That was normal for us at that time", Aguilar says. Today she lives in Arkansas; Eric's 12-year assessment takes place during a family visit.

The program, run by the University of California (UC), Berkeley, is one of three U.S. studies that have followed children since the late 1990s to investigate the impact of chemicals in the environment on their brains. The Berkeley program focuses on an agricultural area in California; studies at Columbia University and Mount Sinai School of Medicine look at multiethnic, low-income inner city families in New York City.

[Read more...](#)

Also read in *Science*, ["The Pesticide Paradox."](#)

The CHAMACOS cohort is also being used to study other substances, ["In Utero and Childhood Polybrominated Diphenyl Ether \(PBDE\) Exposures and Neurodevelopment in the CHAMACOS Study."](#)

Comprehensive Assessment of a Chlorinated Drinking Water Concentrate in a Rat Multigenerational Reproductive Toxicity Study

[Source: *Environmental Science and Technology*, August 2, 2013](#)

Authors: Michael G. Narotsky, Gary Klinefelter, Jerome M. Goldman, Deborah S. Best, Anthony McDonald, Lillian F. Strader, Juan D. Suarez, Ashley S. Murr, Inthirany Thillainadarajah, Sid Hunter, Prof. Susan D. Richardson, Thomas Speth, Richard J. Miltner, Jonathan G. Pressman, Linda Teuschler, Glenn Rice, V Moser, Robert W. Luebke, and Jane Ellen Simmons

Some epidemiological studies report associations between drinking water disinfection by-products (DBPs) and adverse reproductive/developmental effects, e.g., low birth weight, spontaneous abortion, stillbirth, and birth defects. Using a multigenerational rat bioassay, we evaluated an environmentally relevant "whole" mixture of DBPs representative of chlorinated drinking water, including unidentified DBPs as well as realistic proportions of known DBPs at low-toxicity concentrations. Source water from a water utility was concentrated 136 fold, chlorinated, and provided as drinking water to Sprague-Dawley rats. Timed-pregnant females (P₀ generation) were exposed during gestation and lactation. Weanlings (F₁ generation) continued exposures and were bred to produce an F₂ generation. Large sample sizes enhanced statistical power, particularly for pup weight and prenatal loss. No adverse effects were observed for pup weight, prenatal loss, pregnancy rate, gestation length, puberty onset in males, growth, estrous cycles, hormone levels, immunological endpoints, and most neurobehavioral endpoints. Significant, albeit slight, effects included delayed puberty for F₁ females, reduced caput epididymal sperm counts in F₁ adult males, and increased incidences of thyroid follicular cell hypertrophy in adult females. These results highlight areas for future research while the largely negative findings, particularly for pup weight and prenatal loss, ease concerns raised by some epidemiological studies.

[Read more...](#)

Read article in *Chemical & Engineering News*, ["Study In Rats Finds No Reproductive Health Effects From Water Disinfection Byproducts."](#)

Are you ready to report on conflict minerals?

[Source: *GreenBiz.com*, August 14, 2013](#)

Author: Tanya Bolden

Is the issue of conflict minerals on your radar? If not, it probably should be -- especially if you're in the electronics, automotive or a number of other manufacturing-related industries. Chances are, you'll be looking for (and reporting on) conflict minerals in your supply chain soon, if you haven't started already.

You may not recognize conflict minerals in raw form, but you're certainly familiar with the products they can turn up in: everything from your TV and cell phone to your car's sound system and air bags. Conflict minerals currently include cassiterite (the metal ore from which tin is extracted),

columbite-tantalite (the metal ore from which tantalum is extracted), wolframite (the metal ore used to produce tungsten) and gold. The common names of these conflict minerals - tin, tantalum, tungsten and gold - are often referred to as 3TG.

Companies should care about this issue for several reasons. First, there's a moral imperative: The intent of reporting requirements is to eliminate an important stream of funding for armed conflict in the Democratic Republic of Congo (DRC) and surrounding countries, where some of the world's supply of conflict minerals is mined.

If that's not reason enough, it's also the law: The 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act and the 2012 final rule from the U.S. Securities and Exchange Commission (SEC), require most companies subject to SEC filing rules to report to the SEC by May 31, 2014, if any of their products produced in calendar year 2013 contain conflict minerals. In July, a federal judge ruled against a challenge to new conflict mineral rules and upheld the law. Translation: there's less than 10 months for the affected companies to report on conflict minerals in any product they make this year.

[Read more...](#)

Also read Automotive Industry Action Group (AIAG) August 2013 report, "[Automotive Industry Approaches to Conflict Minerals Reporting: A Case Study of Automakers and Suppliers.](#)"

TURI's Note: We currently have a copy of the [IPC Conflict Minerals Due Diligence Guide](#) available in the library for review.

Cambridge firm developing growable plastic

[Source: Boston Globe, August 13, 2013](#)

Author: Callum Borchers

The plants growing in a greenhouse on Erie Street in Cambridge bear neither flower nor fruit and, in truth, are downright homely. Tall plumes of switchgrass, once the dominant species of the North American prairie, are domesticated here, sprouting from black pots under skylights and heat lamps.

Underappreciated switchgrass is experiencing second life as a major science project; it is widely used to make alternative fuels and, on Erie Street, to make plastic. In July, the Cambridge company Metabolix Bioplastics received a US patent for its method of supercharging production of the molecule in switchgrass that is used to make biodegradable plastic, and is now working to produce the polymer in high enough concentrations to make the technique commercially viable.

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A Green Route to Petroleum Feedstocks: Photochemistry of Fats and Oils

[Source: ACS Sustainable Chemistry & Engineering, July 18, 2013](#)

Authors: Maria L. Muro-Small and Douglas C. Neckers

[The authors] demonstrate that it is possible to generate long chain olefins from different fat sources, i.e., animal fat, vegetable oils/fats, and waste cooking oil. [Their] results show that, independent of the source of fat, irradiation using UV-C light produces 1-tetradecene, 1-hexadecene, 1,7-hexadecadiene, and 1,7,10-hexadecatriene. Fats undergo transesterification with primary alcohols rendering the corresponding esters. These, following irradiation, produce the olefins described, in addition to lower molecular weight esters.

[Read more...](#)

Please send a message to mary@turi.org if you would like more information on any of these resources. Also, please tell us what topics you are particularly interested in monitoring, and who else should see Greenlist. An online search of the TURI Library catalog can be done at <http://library.turi.org> for greater topic coverage.

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