

EPIDEMIOLOGY

PERINATAL EPIDEMIOLOGY

- 591 **Beta Approach for Risk Summarization: An Empirical Bayes Method for Summarizing Pregnancy History to Predict Later Health Outcomes**

DOI Mary V. Diaz-Santana, Molly Rogers, and Clarice R. Weinberg

- 599 **Use of Health Administrative Data to Identify Migraine in Individuals With a Recognized Pregnancy: A Validation Study in Ontario, Canada**

DOI Carmela Melina Albanese, Susan J. Bondy, Christine Lay, Zhen Li, Jun Guan, and Hilary K. Brown

ENVIRONMENTAL EPIDEMIOLOGY

- 606 **Medium-term Exposure to Wildfire Smoke $PM_{2.5}$ and Cardiorespiratory Hospitalization Risks**

DOI Yaping Wei, Edgar Castro, Kishor Yin, Alexandra Stein, Bryan N. Vu, Mahdiq Danesh Yazdi, Longgang Li, Yuesi Liu, Adam A. Peruba, and Joel D. Schwartz

- 616 **Spatial Variability and Clustering of Life Expectancy in the United States: 1992–2019**

DOI Isabel P. De Ramos, Tara P. McAlexander, and Usama Bilal

- 625 **Potential Impact of Maternal Nighttime Light Exposure and Its Interaction With Sociodemographic Characteristics on the Risk of Various Congenital Heart Diseases**

DOI Shanikeshwar Thiruvanan, Yang Qiu, Philip K. Hopfe, Kai Zhang, Ying Liu, Shao Liu, Huiqiao Gu, Ximeng Wang, Sam S. S. Lau, Xian Liu, Xiangmin Guo, Yong Wu, Xindi Zhou, Ziqiang Liu, Man Zhang, Yongping Sun, Xiaoping Liu, Jimei Chen, and Wenguan Zhang

INFECTIOUS DISEASES

- 636 **Early Detection of Dengue Outbreaks: Transmission Model Analysis of a Dengue Outbreak in a Remote Setting in Ecuador**

DOI Hannah Van Wyk, Andrew F. Brauer, Guanyah O. Lee, Sally Mungu, Paulina Andrade, Edward L. Snider, Josefina Coloma, and Joseph N. S. Eisenberg

contents continued inside

Indicators of Health Risks to Promote Sustainability in Agro-Food Chains

Bravo V; Partanen, T; Pelupessy, W; Wesseling, C

Epidemiology. 18:p S152-S153, September 2007.

doi: 10.1097/01.ede.0000276797.92968.6a

Author Information

*Instituto Regional de Estudios en Sustancias Tóxicas, Universidad Nacional (IRET-UNA), Costa Rica; and
†Development Research Institute (IVO), Tilburg University, Netherlands.

ISEE-642

[Back to Top](#)

Objective:

Techniques to identify potential health risks of pesticide use are useful to promote and follow up sustainability in export agro-food chains, especially in production segment in developing countries. The aim of the study was to differentiate crop production technologies, based on the quantity of pesticides applied, grouped by toxicity criteria as health risk indicators.

[Back to Top](#)

Materials and Methods:

Surveys were carried out on pesticide use among 161 producers of export crops in Costa Rica (coffee, melon, chayote) and Guatemala (coffee, snow peas) using convenience samples. Active ingredients were classified and grouped by acute, topical, and chronic toxicity. Risk indicators were quantities of pesticides used by different toxicity criteria for kg of product on the consumer table. The ratio between indicators pointed towards the sustainability of different technologies as selected by agricultural economists. For the consumer segment of the chain, EPA and EU residues on the export crops were analyzed according to toxicity criteria.

[Back to Top](#)

Results:

In Costa Rica, all risk indicators were lower for coffee from Santa Maria de Dota than San Marcos de Dota; acute and topical risks were lower for independent chayote growers than for organized growers; acute and chronic risks were higher and topical risks lower for melon produced with methyl bromide as compared to metam sodium. In Guatemala, risks for certified coffee were lower than for conventionally grown coffee; topical risks were lower for snow peas exported to the US than to the EU. Residues suggest some potential risks for consumers for (1) snow peas: acute (methamidophos) and chronic (chlorothalonil and methamidophos), and (2) melon: acute (endosulfan and methomyl) and chronic (endosulfan, methomyl, tiabendazol).

[Back to Top](#)

Conclusions:

Quantities applied of pesticides grouped by toxicity indicators may help identify and promote sustainability in

export food chains. Pesticide residues in imported foods are not promising as sustainability indicators for the consumer segment of agro-food chains.

© 2007 Lippincott Williams & Wilkins, Inc.