

Richard Greco
M.A. Simon Fraser University

Urban Biodiversity and Agroterrorism

Abstract

Urban-based food supplies are a step away from the several decade long trend of the increasing industrialization of food. And it is a step in the right direction, considering that industrial food production as we know it has been systematically increasing food vulnerability.

There are three main components to food vulnerability, as defined by Evan D.G. Fraser¹: Low Biodiversity, High Biomass, and High Connectivity. Each of these attributes affects how at risk a crop is to dangers such as natural infestations and molds, as well as contaminations contrived by man. Having such vulnerabilities invites the risk of large crop loss and a massively disrupted economy. The larger the size of any given crop, in absolute terms as well as relative to other crops in the economy, the more impact any single contamination could have. In addition, the more geographically connected those crop lands are, the more likely molds and pests are to spread and propagate.

Having such vulnerabilities in a food supply leaves a country's economy and population at risk for major market shocks, as opposed to smaller and less volatile ones. Whether introduced by accident or intentionally, monoculture is especially problematic when considering invasive species. Identified by Jim Monke in his book on Agroterrorism², he mentions several molds found in India that are known to be especially virulent and are able to wipe out up to 70% of the crop they infect. In this example, it is how the Brown Downy Mildew can decimate a corn crop, which is one of the largest monocultures in the world³. So long as crops are grown in such dense monocultures, there are increased risks of large and unexpected collapses in the food markets.

Considering how urban agriculture fundamentally operates to increase biodiversity, and is decentralized, at least two of the factors of food vulnerability are impeded by this growing practice. Additionally, the urban food supply chain is shortened and goes through a greater variety of direct paths than the industrial methods. This means no single supply chain is vital to the plate-bound food and that there are fewer opportunities to disrupt the food supply since the locations of growth and consumption are in extremely close proximity.

As such, any support of urban biodiversity would begin to reduce the risk taken when food growth is concentrated in area, devoid of biodiversity, and extremely dense with production.

Bio
Richard Greco

¹ Fraser, Evan D.G. "Food System Vulnerability: Using past Famines to Help Understand How Food Systems May Adapt to Climate Change." *Ecological Complexity* 3.4 (2006): 328-35. Print.

² Monke, Jim. *Agroterrorism: Threats and Preparedness*. N.p.: BiblioGov, 2007. Print.

³ Putnam, Melodie. Brown Stripe Downy Mildew of Corn. *PlantManagementNetwork.org*. Oregon State Univesity Plant Clinic, 2007. Web. 8 May 2012.

<<http://www.plantmanagementnetwork.org/proceedings/npdn/2007/posters/02BrownStripeDowneyMildew.pdf>>.