Safer Alternatives to Pest Control in Agriculture – Making the Public Health Case for Change

UC Davis
28 May 2009

Margaret Reeves
Pesticide Action Network North America (PANNA)
49 Powell St.
San Francisco, CA 94102
415-981-1771
merreves@panna.org

Title: Convergence of Sustainable Agriculture and Public Health for a Safe and Health Food Economy

INTRODUCTION

For over 25 years Pesticide Action Network (PAN) has worked to replace the use of hazardous pesticides with ecologically sound and socially just alternatives. As one of five PAN Regional Centers worldwide, PAN North America (PANNA, (www.panna.org) links local and international consumer, labor, health, environment and agriculture groups into an international citizens' action network. This network challenges the global proliferation of pesticides, defends basic rights to health and environmental quality, and works to ensure the transition to a just and viable society.

PANNA focus has been on documenting the **need** for safer alternatives. We NOW have a real opportunity, some new opportunities, to address the solutions.

A) The problems of **negative impacts of pesticide exposure** on human health and the environment remain severe, and will likely – under conventional agricultural production – become worse with changing climate
B) The **solutions** we've been promoting are urgently needed for all the old reasons such as protecting human health and the environment, and supporting viable rural economies; but are even more urgently needed in that they also reduce and/or mitigate many effects of climate change
C) Problems of conventional agricultural production and the US system of food and agriculture are receiving **increased attention from the public health sector** including at the state and national policy level = a huge opportunity for powerful collaboration to push for progressive **policies** for sustainable, healthy food and agriculture.

PROBLEMS OF CONVENTIONAL AG – PESTICIDES, DIET, CLIMATE

Am Public Health Assoc (APHA) (November 2007):

> In the US, obesity and diet-related chronic disease rates are escalating, while the public's health is further threatened by rising antibiotic resistance; chemicals and pathogens

contaminating our food, air, soil and water; depletion of natural resources; and climate change. These threats have enormous human, social, and economic costs that are growing, cumulative, and unequally distributed. These issues are all related to food—what we eat and how it is produced. The US industrial food system provides plentiful, relatively inexpensive food, but much of it is unhealthy, and the system is not sustainable. Although most US food consumption occurs within this industrial system, healthier and more sustainable alternatives are increasingly available.

APHA defines a sustainable food system as one that provides healthy food to meet current food needs while maintaining healthy ecosystems that can also provide food for generations to come with minimal negative impact to the environment. A sustainable food system also encourages local production and distribution infrastructures and makes nutritious food available, accessible, and affordable to all. Further, it is humane and just, protecting farmers and other workers, consumers, and communities.

1. Pesticide effects on health and environment – a LOT of data (see resources handout – at end of presentation).
   (A) Pesticides can cause harm to humans, animals, or the environment because they are designed to kill living organisms. Scientific research demonstrates that exposure to pesticides is strongly linked to the incidence of certain types of cancer, Parkinson's disease and other neurological effects, asthma and other respiratory illnesses, birth defects, miscarriages, sterility, and endocrine disruption. Recent research also indicates that pesticides may be implicated in autism spectrum disorder (DPH article), and pervasive developmental disorders. (Estimated costs at $1.1billion/yr for acute poisonings and assoc illnesses & some cancers.)

   (B) Environmental Threats to Healthy Aging report (Boston PSR & Sci & Env Health Network): early chemical exposures (including pesticides) may result in a range of diseases in childhood and throughout the lifespan, including diseases of the central nervous system such as reductions in intelligence, shortening of attention span, and disruptive behavior. Animal studies suggest that early exposure to a combination of two herbicides—maneb and paraquat—may accelerate development of Parkinson’s disease. An analysis of the science of Alzheimer’s and Parkinson’s diseases shows they are related to a number of features of modern society and that Alzheimer’s disease especially is linked to other serious health problems of modern times, which we call the “Western disease cluster” that include type 2 diabetes, insulin resistance, and metabolic syndrome – all strongly correlated with exposure to PCBs, dioxin, and several pesticides.

   (C) A more obscure, newer example of environmental effects of pesticide use includes inhibition legume-associated rhizobia bacteria to fix atmospheric N. This leads to an increased dependence on N fertilizers—a huge source of NOx contaminants.

2. Serious, extensive health problems related to CAFOs (e.g. antibiotic resistance and MRSA) – not pesticides *per se*, but part of the industrial agriculture of which pesticides are a key element (see Union of Concerned Scientists). 2005 more deaths in the US from MRSA than due to AIDS.

3. Industrial agricultural production is a significant contributor to climate change (and the associated health and environmental effects). 60% of ag GHGs are from production; transportation is important—argument for support of regional food systems—but not nearly as much as production. (Contact: Jim Kleinschmidt, IATP)

OPPORTUNITIES/SOLUTIONS
Successful introduction and implementation of solutions will require broad, multi-sector support.

There is some encouraging evidence of the convergence of sustainable agriculture & public health – e.g. National Campaign for Sustainable Agriculture conference (Nov 2008 in Excelsior Springs, MO), and Am. Assoc. of Public Health conference (Oct 2008 in San Diego, CA).

1. Support environmentally sound agricultural practices to reduce contamination (air, water, soil), reduce resource use (water, fuel), mitigate climate change (C sequestration, reduce NOx emissions, NO3- losses), and reduce work-related injury/illness, decrease associated healthcare costs (APHA Nov'07). Also, increase biodiversity, soil physical properties, water infiltration and retention, and other ecosystem services.

2. Support organic production and consumption.
   (A) According to the Organic Trade Association, U.S. sales of organic food and beverages have grown from $1 billion in 1990 to an estimated $20 billion in 2007, and are projected to reach nearly $23.6 billion in 2008. Although organics represented only about 2.8 % of overall food and beverage sales in 2006, the organic food industry continues to be a fast growing sector at 20.9% in 2006 (see Organic Center May '09 report)

   (B) (Benbrook Mar'08) For domestically grown fruits and vegetables, consumption of organic would reduce risk of dietary pesticide exposure 97%. While effect for healthy adults isn't clear, it is for 4 million pregnant women, the four million fathers-to-be, and the nearly 40 million children age 12 and under, there will almost certainly be significant health benefits following a substantial reduction in pesticide residues in food.

   (C) Benefits of organic food (Benbrook Mar'09). Also focused on fetal development and children: (1) Promote healthy patterns of cell division and di erentiation, and lay the groundwork for normal endocrine system regulation of blood sugars, lipids, energy intake, and immune system functions. (2) Establish and help sustain taste-based preferences in the child for familiar nutrient- dense, flavorful foods (story of the positive impact of an organic produce stand and garden program at my daughter's Oakland public school). (3) Largely eliminate dietary exposures to approximately 180 pesticides known to disrupt the development or functioning of the endocrine system. And (4) for adolescence and adulthood, and as we age, nutrient- dense, organic foods high in phytochemicals can contribute to weight management and prevention of diabetes, while also lessening or delaying the complications linked to both. Ex's: (1) increase flavanoids in tomatoes with less yld variability – prob due to the ability of soils under organic management to take in and store water more effectively than conventionally managed soils (UCD '07 pub); (2)

breast-feeding mothers on organic dairy & meat had higher levels of one particular Conjugated Linoleic Acid – associated with health benefits to child

3. Support: (1) governmental food procurement programs (including school food programs and the Special Supplemental Nutrition Program for Women, Infants and Children); (2) support reauthorization of the Child Nutrition Act; and (3) encourage institutional food providers to recognize benefits of locally and sustainably produced, healthy and fair trade foods and incorporate these into their programs (in part from APHA '07) (e.g. Kaiser and Hlth Care without Harm)

4. Support Local Family Farmers, Promote Regional Food System Policies (NSAC Dec'08). The Obama-Biden platform promised to emphasize the need for Americans to Buy Fresh and Buy Local, and to implement USDA policies that promote local and regional food systems.

5. Kellogg funded School Food FOCUS. A national initiative to enable meal programs in large, urban school districts (6 targeted) to redirect food purchasing toward healthy, local and sustainable vendors. It addresses a critical need to surround children where they learn and play with the food they need to thrive, while playing a pivotal role in anchoring regional food systems. (Contact: Thomas Forster)

   Includes an outreach campaign to diverse audiences to better understand the operating realities of big city school meal programs, the current state of school district reform efforts, and the nexus of school-food-health-agriculture-environment and economic issues.

POLICY EXAMPLES

Some primary opportunities:

1. Farm to School legislation in 18 states including CA (handout)
2. IL – March 09, legislation filed for a farm-and-food development plan– that could trigger $20 to $30 billion in new economic activity every year. A recent report shows that even small increases in the amount of food grown for local consumption can generate an enormous amount of new economic activity within the state.
3. ME – several efforts including legislative; also a great journeyperson program to train the next generation of organic farmers (MOFGA). Similar program exist in CA and elsewhere.
4. MN – MOU among several state agencies to direct programs of the department [of Agriculture] to work toward the promotion of organic agriculture.
5. Food policy councils in various states, counties, cites around the country.
6. Farm Bill 2008 highlights: (1) Certification Cost-Sharing (16 states), (2) Organic Conversion Cost-Sharing (EQIP grants), (3) Research (to be at least commensurate with the percentage that organic products represent of the U.S. food market), (4) Data Collection and Analysis (focus organic production and marketing), (5) Crop Insurance (Federal Crop Insurance Corporation will work to reduce or eliminate premium

surcharges on policies for organic producers “unless …) (6) Support for NOP Administration, (7) Other Provisions.

Appendix A. SEE Resources Handout

Appendix B. Additional Resources

Prevention Institute (http://www.preventioninstitute.org) [By linking practices from public health, education, urban planning, social work, and other fields, communities can create conditions for healthier living.]

1. BUILDING BRIDGES: LINKING PUBLIC HEALTH AND THE SUSTAINABLE AGRICULTURE MOVEMENT

Funded by: Clarence E. Heller Charitable Foundation and the Columbia Foundation

The Building Bridges project was developed to create opportunities for strengthening the momentum for a just, sustainable, health-promoting food system by joining the forces of public health and the sustainable agriculture movement. Elements of the public health community have been involved in promoting environmental causes related to food production. With rising concerns about obesity, a symptom of poor eating and activity habits, there is a chance to engage a broader group of health professionals. Similarly, the growth of interest in sustainable agriculture issues can make a stronger public health case for the importance of healthy food.

Some potentially overlapping goals of the sustainable agriculture movement and public health include reducing exposure to toxic chemicals in food and its production, increasing production and access to affordable, fresh, high quality farm products, ensuring a clean water supply, and altering the elements of the food system which favor the production and distribution of highly-processed, high-fat and high-sugar food products. Achieving these goals requires a multi-faceted strategy that includes public education, media advocacy, and changes in organizational practices and policies related to food production, distribution, and marketing.

Cultivating Common Ground: Linking Health and Sustainable Agriculture (PDF)
Findings and recommendations to build a collaborative movement for a just, sustainable, health-promoting food system.

Downloaded 34 p 9/04 document.

2. **Environmental Nutrition and Activity Community Tool (ENACT)**
They have a huge list of organizations across the country. Areas include: school, after school, childcare, neighborhood, workplace, healthcare, government.

See: ENACT Work Environment: Nutrition Standards
Elements of sustainably produced foods can include local/regional foods, organic and/or food produced without pesticides, hormones, or chemicals, ...
www.preventioninstitute.org/SA/enact/workplace/nutrition_4a.php