

Arizona Cooperative Extension Proposal Requests - Working Group Award

Title: Children's Environmental Health Program
Program Area(s): Family, Consumer and Health Sciences
County affiliate(s): Maricopa - Patty Merk
 Pinal - Cathy Martinez
 Santa Cruz - Darcy Dixon
On-campus or Experiment Station affiliate(s): Entomology - Al Fournier
 Entomology - Dawn Gouge
Lead Faculty: Entomology - Dawn Gouge
This Working Group was previously funded: Yes
University fiscal year: FY2006

Report of Working Group accomplishments (Outputs and Outcomes) from 2006 – 2007:

Two Arizona Children's Environmental Health Coalition meetings (June 2006 and December 2006)

Education tools: (7) Pest Press newsletters; (5) posters; a reduced-risk pesticide "Green Products "List"; calendar pest matrix; (1) fact sheet;(14) working group updates; various informational documents to facilitate school IPM implementation

This Working Group is connected to a state- wide initiative: No

Which one?

Budget amount requested (up to \$2,000.00): \$2,000.00

Budget amount approved (up to \$2,000.00): \$2,000.00

Situation/issue:

Pesticide contamination of the environment is often thought to be caused by agricultural practices. However, municipalities often have widespread contamination of surface waters due to urban pesticide use. Overuse and misuse of pesticides by municipal workers, professional pest managers, and residential populations lead to storm water runoff events resulting in contamination. Many urban areas draw their drinking water from surface sources, and concerns about the environmental fate and potential long-term health effects of pesticides have increasingly led city and government groups to adopt Integrated Pest Management (IPM) policies, e.g. the City of San Francisco. Community groups adopting IPM policies and procedures, in conjunction with targeted training programs for pest managers, have demonstrated more effective pest management, significant reduction in pesticide use, substitution of reduced-risk pesticides and/or formulations and significant risk-reduction (Gouge et al. 2006).

Children face unique hazards from exposure to both pests and pesticides. Children take in more pesticides relative to their body weight than adults in the food they eat, and air they breathe. Their developing organ systems make them more sensitive to toxic exposure and less able to metabolize absorbed toxins. The U.S. EPA, National Academy of Sciences, and American Public Health Association, among others, have stated concerns about the danger that pesticides pose to children. The body of evidence in scientific literature shows that pesticide exposure can adversely affect a child's neurological, respiratory, immune, and endocrine system, even at legally allowable application levels. Several pesticides, such as pyrethrins and pyrethroids, organophosphates and carbamates, are also known to cause or exacerbate asthma symptoms. Thus, child care facilities and schools are considered sensitive environments of top priority, but the vast majority of institutions (e.g. state schools, corporate child care facilities) do not practice good environmental stewardship / risk-reduction IPM. Strangely some entities have recognized the benefits of IPM and practically exercised urban IPM for many years e.g. IPM is mandated on Federal property by Section 303 of the Food Quality Protection Act of 1996; PL 104-170.

More than 1,000 registered pesticidal products are marketed as over-the-counter residential pesticides. Although heavily marketed and readily available, household pesticides are not generally understood to have potential toxic effects; nor are they always safely handled, used, stored, or disposed of properly by the public. In fact, pesticide application throughout indoor and outdoor environments, creates significant non-point source (NPS) pollution and untold

numbers of direct exposure events via skin, lungs, eyes and mouth.

While the bulk of pesticide use is in agriculture, roughly 20% by volume of active ingredient applied annually is non-agricultural. Furthermore, urban applications are arguably made by, or on behalf of, the least knowledgeable “consumers”, since little education and no training programs have been required of this group of users. As uninformed consumers, everyone from a residential customer to a school facility manager may fail to recognize IPM as an environmental health choice.

In low-income urban communities, exposure to both pests and pesticides is a common, health threat inside homes, schools, and child care facilities. High levels of pests in aging buildings drive people to extreme measures with the only tools they can access at the local pharmacy or hardware store – pesticides. Questionnaire data show that pesticide labels are not consulted or followed by a large percentage of users. Pesticides are often not properly stored, resulting in child and pet poisonings. Finally, correct disposal is poorly understood. Many times, pesticides go, literally, down the storm drains to the rivers or down home drains and back into the municipal waste water stream, a system ill-equipped to remove such contamination. Hazardous waste removal programs are unevenly implemented around the country, resulting in pesticide container disposal in landfills.

Asthma is one of the nation’s most significant and fastest-growing chronic health threats to children under 18. Asthma is the leading cause of school truancy and accounts for a high percentage of pediatric emergency room visits. Asthma is also a leading cause of death in the elderly. Many asthma programs do not identify the negative effects of either pests or pesticide use indoors. Pesticides themselves can be asthma triggers and/or cause other serious health problems. Pesticide formulation type (i.e. aerosols) can be an equally important risk factor but often this is not stressed in asthma outreach.

Hospitals contain compromised individuals; they are institutions designed to care for people with debilitating conditions, and yet most hospital administrators have little to no knowledge of IPM. Even those informed enough to request IPM services of industry partners, often do not know enough about the process, to determine if they are indeed receiving a high quality IPM service. To date there is no accepted industry standard for IPM, but there is well established criterion for consumers to gage service quality (e.g. STAR Certification, IPM Institute of North America).

Inputs including budget:

In-state travel (fuel, etc.) for school IPM presentations and inspections in Maricopa, Santa Cruz and Pinal counties:
\$1,500

Budget conferencing (as-needed) with county agents and members of the ACE Health Coalition: **\$500**

ACE Health Coalition meeting followed by a half-day school IPM training: 3,000.00 (covered by Arizona Department of Environmental Quality grant funds)

Coordination of activities and writing extension bulletin by UA Research Specialist: 0.7 FTE

TOTAL: \$2,000

Outputs:

Peer-reviewed extension bulletin. This will be posted on the University of Arizona Urban IPM website and shared with stakeholders via the Arizona Children's Environmental Health Coalition meetings and announcements. Monthly (12 or more) program updates for Working Group

Peer-reviewed extension bulletin

School IPM certification tool will be developed in both English and Spanish languages. It will be appropriate for use in verifying quality IPM in both school and child care facility settings.

State at least one educational product:

Peer-reviewed extension bulletin. This will be posted on the University of Arizona Urban IPM website and shared with stakeholders via the Arizona Children’s Environmental Health Coalition meetings and announcements.

Short-term outcomes:

Expansion of school IPM Implementation tools to include information and resources needed by child care facilities.

Medium-term outcomes:

Improved awareness of pests and pesticide related risks to children.