Middle East Agricultural Health Study

An agreement to study the human health effects of pesticides in the Middle East was enthusiastically adopted by foreign ministers and other officials from several Middle East countries, the West Bank, Gaza Strip, the European Community, Canada, and the United States. The Middle East Agricultural Health Study, conceived by the NIEHS and the Fogarty International Center at the National Institutes of Health, was approved at a meeting in Manama, Bahrain, in October 1994. The next step took place in December, when technical experts from the Middle East and North America met at a workshop in Cairo to iron out the details of the NIH initiative.

The Agricultural Health Study is part of the broader Middle East Peace Initiative. While the meeting of foreign ministers in Bahrain set the NIH proposal in motion, the regional workshop in Egypt addressed logistical issues related to gathering data, current collaborations on pesticide use, and implementing the study.

Scientific experts from academic institutions and government agencies from the Middle East region expressed concern and frustration that dramatic environmental impacts of population changes and agricultural, technological, and industrial advances in the region have not been adequately studied and are often unrecognized by government officials and the general public. Participants proposed collaborative research, communication, and education strategies to address these environmental concerns. Studies on the health effects of agricultural chemicals were identified as a top priority.

Agricultural chemicals are usually mixtures of chemicals, some of which can damage the environment and accumulate in ecosystems, including ground- and surface water, and contaminate the food supply. Many agricultural chemicals can cause a range of adverse human health effects. Children may be particularly vulnerable. The NIH proposal attempts to better define the extent of adverse health effects in the Middle East region, promote the safe use of pesticides, and ensure the applications of the most effective pesticide-management guidelines.

In densely populated areas, large quantities of pesticides are used annually. In addition to pesticides, fertilizers, growth regulators, food additives, synthetic dyes, detergents, and dusts are sources of pollution in the environment. There is an urgent need to address acute and long-term health effects caused by agricultural chemicals by initiating collaborative research programs among Middle East and U.S. scientists. Data must be generated on human exposures, nature and extent of health effects, and mechanisms of toxic action.

One of the major components of the NIH proposal is a research program to assess the non-cancer consequences of agricultural chemical exposures in Mid-Eastern populations. Potential collaborators for these health effects studies have been identified in Egypt, Israel, Jordan, the West Bank and the Gaza Strip, and the United States. Scientists from other nations in the region will also be invited to participate.

The experimental plan will address neurological deficits, childhood development, birth defects, and hypertension as health endpoints. Specific measurements will assess nerve conduction velocity, acetylcholinesterase inhibition, balance, visual assessments, speech impairment, hearing, blood pressure, birth weight and gross birth defects.

Another exciting component of the NIH proposal is the Peace Fellowships training program designed to bring junior-level scientists from each participating country to the United States to gain experience in research methods that will be used in their home countries. The training initiative would expand a cadre of young research scientists dedicated to environmental and occupational health in established mentorships and enhance the working relationship among scientists in the United States and the Middle East.

The proposed collaborative studies among scientists within the region will allow new intervention and prevention approaches to better manage the risks of agricultural chemical use. Furthermore, communication and health education strategies involving the NIH proposal will assist national policymakers and local authorities in devising mitigation plans on the use of agricultural chemicals.

Components of the Middle East Agricultural Health Study

- Communications, Information, and Health Education Strategies
- Assessment of Available Data
- Training Peace Fellowships
- Human Health Effects Research
- Experimental Approaches

Environmental Justice: Partnerships for Communication

Prominent among the goals of the NIEHS is support of research aimed at achieving environmental justice for all populations. Assays of the health effects of environmental pollution, as well as regulations based on such assays, are often performed with little or no input from affected communities. The purpose of the communication program is to institute mechanisms to bridge this communication gap so that the communities involved have a role in identifying and defining problems and risks related to environmental health and in shaping future research approaches to such problems.

A Request for Applications was initially issued in January 1994. Applications were evaluated by a Special Review Committee composed of environmental health researchers, health care providers, and community representatives. Three awards, two of which address Native American issues, were made in September 1994.

Environmental investigators at Clark University, in collaboration with Native Americans for a Clean Environment and Citizen Alert Native American Program, are seeking to increase the awareness of Native American communities exposed to radiation contamination. These communities bear a disproportionate burden of risk from nuclear activities, ranging from uranium mining to waste disposal. Members of the affected communities are ill prepared to understand and deal with the hazards of radiation contamination. The grantee will design and implement a plan for risk management and prevention activities at the Western Shoshone Nation near the Nevada Test Site and at the Cherokee Nation at Sequoyah Fuels, Oklahoma, a uranium processing facility in operation for 23 years. Education modules of two types will be implemented: community modules, created exclusively by Native American collaborators; and health education modules, created by scientists and health care provider trainers. Each of these components involves the community in learning about health risks and in sharing their perspectives of this risk with scientists and health professionals. Relevant materials and strategies will be shared with other Native American communities.