

AGROMEDICINE PROGRAM UPDATE

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Program Notes

➤ Research

The study of hospitalizations and emergency room visits for pesticide poisoning in South Carolina during 1997-2001 has been completed. Although there was a slight increase in morbidity over the previous study period, trends in pesticide poisoning identified in earlier studies were confirmed. This study represents the sixth in a series of pesticide-morbidity surveillance studies undertaken by our office over the past 30 years. A report for publication is in progress.

A Place for DDT?

An editorial¹ published in the *New York Times* last month makes a case for bringing back DDT to control mosquitoes that spread West Nile virus. The author acknowledges that West Nile virus is not yet epidemic, but it is a significant public health threat.

It is suggested that current political correctness pre-

vents public health officials from recommending widespread spraying of insecticides to control mosquitoes. For example, the Centers for Disease Control web site only advises people on how to avoid mosquito bites.

The use of DDT is reviewed in the article along with the events that led to the cancellation of most of its uses by the Environmental Protection Agency in 1972. A leading reason cited for the cancellation was an alleged human cancer risk. The risk was based on high-dosage feeding studies of mice.

Three things are needed to bring DDT back:

1. The U.S. government should reevaluate the scientific data on DDT (especially research after 1972) and make DDT available for mosquito control in the U.S.
2. The U.S. should support the international use of DDT (malaria and dengue fever have spread since the ban).
3. Local officials and the public should be educated on the safety and cost effectiveness of DDT.

"Because DDT has had such a bad rap, it will be politically difficult to resurrect its use. But we should begin the process now. In the meantime, we'll just slather on the insect repellent, slap, scratch — and occasionally become infected with a life-threatening but preventable disease."

¹Miller HI. OpEd. Is there a place for DDT? *New York Times*, August 7, 2003, A23.

Agricultural Trauma

Agriculture is recognized as a leading industry for work-related injuries and fatalities. Farm children are also at risk because they live and play in the agricultural-work environment.

A study¹ designed to elicit the etiology of agricultural injuries among children has provided further insight into the problem. Data was collected in 1999 from farm households in five states representing 16,538 study participants. 51% of the participants were less than age 20 years.

Major findings of the study include the following:

- The annualized injury rate for those under age 20 years was 146 per 1,000 persons and 176 per 1,000 persons for those age 20 years and older.
- Animals were the primary source of injuries: 41% of cases age < 20 years and 32% age 20 and older. Falls respectively accounted for 31% and 23%.
- Those age < 20 years had increased risk of injury for operating/riding in a motor vehicle, riding on or operating a tractor, operating large or small equipment, and working with horses, sheep, and beef cattle.

¹Gerberich SG et al. *Regional rural injury study-II: agricultural household injury experience and etiology of agricultural injuries among children. Abstract for AOHC Session 2301. JOEM 2003; 45(7): 771.*

Agricultural Medicine Research: Useful or Not?

by Dr. Stanley Schuman

Isn't it strange, how many university-funded studies in agromedicine try to find etiologic clues to complex, multifactorial diseases in "agricultural populations", at presumed risk of overexposure to pesticides? The list of computer-driven searches includes: infertility¹, prostate cancer², Parkinson's disease, and childhood neurodevelopment. The results depend on relatively weak statistical associations and much theoretical speculation.

A world-famous epidemiologist at Columbia University, NY shares a lifetime of

fruitful work on nutrition, birth defects, intelligence and human reproduction with her graduate students and colleagues with some simple, but much underutilized advice.³ Like her mentor, Sir Richard Doll of the U.K., she urges them "to spend valuable time in the community", to select relevant problems for biologically plausible causation, and always seek practical applications to promote health in the community. "Logic is more important than sophisticated statistics", she insists. Nutrition and hunger, infectious diseases and their prevention, global outreach to disadvantaged parts of the population are Dr. Stein's lifelong pursuits. For example, she credits the research on folates as a model of applied epidemiology, helping countless mothers and infants in the community.

Hers is a high standard for creativity and a sense of "fun" in conducting problem-centered, meaningful research. Surely, the goal of our scientific efforts, in agriculture and medicine, should be to help the community, not meet the latest guideline for funded research.⁴

¹Greenlee A, Arbuckle T, Chyou P. *Risk factors for female infertility in an agricultural region. Epidemiology 2003; 14:429-436.*

²Ritchie J, et al: *Organochlorines and risk of prostate cancer. JOEM 2003; 45:692-702.*

³Wilcox A: *A conversation with Zena Stein, Epidemiology 2003; 14:498-502.*

⁴Schuman S: *Practice-based agromedicine: The need for client-centered research, Am J. Int. Med 1990; 18:405-408.*

Pollen-Plant Allergy

by Dr. Stanley Schuman

According to Anna Nowak-Wegrzyn, M.D. of the Department of Allergy, Mt. Sinai Medical School, N.Y.¹, patients may become unduly alarmed when oral allergic symptoms (localized to the lips, mouth, and throat) begin after ingesting any of several raw (uncooked) fruits and vegetables.

The professor points out that unlike a true systemic food allergy requiring antihistamines and epinephrine to prevent anaphylactic shock, "these symptoms resolve within minutes without treatment, after the food is swallowed or removed from the mouth." Characteristically, oral syndrome patients have a history of hay fever to typical seasonal pollens. Therefore, allergists prefer the more accurate term, "pollen-plant food allergy."

The symptoms are caused by a chemical cross-reaction in certain patients between certain pollens and certain fruits and vegetables, as follows: birch pollens cross-react with: apple, carrot, peach, plum, cherry, pear, almond, hazelnut; grasses with: tomato; ragweed with: melons, zucchini, cucumber, kiwi, banana. The key to diagnosis is the absence of general symptoms after ingestion, including hives, trouble breathing, shock requiring emergency treatment. Strict avoidance of true food allergens is essential to avoid anaphylaxis.

¹Nowak-Wegrzyn A. *A member asks. Food Allergy News, August-September 2003, 5.*