

AGROMEDICINE PROGRAM UPDATE

MUSC DEPARTMENT OF FAMILY MEDICINE – DIVISION OF PUBLIC HEALTH AND PUBLIC SERVICE
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Previous issues are available at www.musc.edu/oem/apunews.html

Program Notes

➤ APCP Survey Results

Only 15% of our Agromedicine Program Consulting Physicians responded to our fax survey, but 80% of those preferred a mailed, paper copy of the *Agromedicine Program Update*. 20% preferred email for communication from us. Further budget reductions in the future may require a change in our operations, but for now, we will continue to mail the APU to in-state subscribers and post it on our website for those outside South Carolina. Thanks very much for your feedback!

➤ National Recognition

The May-June 2002 issue of *Progressive Farmer* magazine features the article "Facing Up to Farming's Health Risks."¹ Dr. Gene Cornett, a cattle rancher, was interviewed in the article. He discussed the effects of dust from large animal operations on the respiratory system. As a retired surgeon, Dr. Cornett

serves as an Agromedicine Program Consulting Physician for Greenville County.

The article acknowledged "... South Carolina's Agromedicine Program, an early effort to unravel the sometimes unique medical problems farmers encounter." Readers are referred to the Agromedicine Program's web site for further information.

¹Miller D and Hillyer G. Facing up to farming's health risks. *Progressive Farmer* 2002; 117(7): 20-25.

➤ Medical Education

Dr. William M. Simpson, Jr. was one of three nationally recognized leaders in agromedicine who called for improved medical education in agricultural health and safety in an article² published in the *Journal of Agromedicine*. The lead authors were Dr. John Wheat of the University of Alabama - Tuscaloosa and Dr. Kelley Donham of the University of Iowa.

They proposed five steps for improvement:

1. the commitment of

- medical schools to recruit students interested in rural practice,
- the promotion of family medicine as the basic discipline upon which to build,
- special training in agricultural medicine and the agromedicine process,
- the allocation of federal resources to regional medical centers to develop and implement agricultural medicine educational models, and
- reimbursement for preventive agricultural medicine services.

²Wheat JR, Donham KJ, Simpson WM. Medical education for agricultural health and safety. *J Agromed* 2001; 8(1):77-92.

Agricultural-Related Injuries in South Carolina

Agriculture has long been recognized as one of the leading industries for injuries and fatalities among its workers. A study,³ by Charles V. Privette, M.S., published in the *Journal of Agromedicine* provides insight into the extent farm

injuries requiring treatment at South Carolina hospitals.

Data was obtained from the Office of Research and Statistics of the South Carolina State Budget and Control Board. This office maintains a database of emergency room visits and admissions to the state's hospitals. Agricultural-related injuries in the database were identified by two event codes; one for farm machinery related injuries and the other for injuries that occurred on a farm (but excluded farm homes). The database was searched for the three-year period 1996-1998.

Major findings of the study include the following items:

- There were 827 farm-related injuries reported by South Carolina hospitals during the period of study.
- The hospital-treated injury rate was 5 per 1,000 farm workers.
- 79% of the cases were male and 70% were white.
- 16% of the cases were younger than eighteen years, 27% aged 18-34 years, 42% aged 35-64 years, and 15% were 65 years old and older.
- Injuries to the lower limbs accounted for 22% of the cases, upper limbs - 20%, chest - 10%, head - 8%, back - 4%, and eyes - 2%.



- Greenwood led all counties with an injury rate of 12.5 per 100 farms followed by Beaufort County with 12.1 and Florence County with 11.2
- Hospital charges for the 827 injuries totaled \$2.5 million dollars and averaged about \$3,000 per injury.
- The average hospital charge for patients aged 65 years and older was \$7,829 — 2.5 times the average charge for the next highest age group (adults, 35-64 years old).

This study provides details on the nature and severity of agricultural-related injuries treated in hospitals. The database used in this study cannot explain how and why the accidents occurred.

The Clemson University author states that the farm-related injuries treated in hospitals represent only a small portion of all farm injuries. "Based on the Bureau of Labor Statistics agricultural injury numbers and the estimated cases of agricultural injuries in South Carolina, hospital reported agricultural injuries would only account for 10% of the total number of agricultural injuries occurring in the state for a given year."

³Privette CV. Analysis of hospital records on farm injuries over three years in South Carolina. *J Agromed* 2001;8(1):63-76.

Another Inconclusive Organophosphate Pesticide Study

by
Dr. Stanley Schuman

Another inconclusive study⁴ of possible neural damage due to farmers' exposure to organophosphate (OP) pesticides is reported from Sri Lanka by a team of medical scientists. Although the study design seemed rigorous comparing 30 male farmers with 30 male fishermen, before and during pesticide application, the results of red blood cell cholinesterase levels and nerve conduction tests were not as one would expect.

Despite an average of 20 hours OP exposure during banana and paddy cultivation season, the farmers differed very little from the presumably non-exposed fishermen "controls." The authors conclude that more study is indicated, as well as tightened control on pesticide use by all segments of this rural population.

Without specific results from this study, the authors still warn, "sensory and motor nerves are affected by long term, low grade exposure to organophosphate pesticides." Such a statement could have been promoted as an argument for integrated pest management, without doing another inconclusive study.

⁴Peiris-John RJ et al. Effects of occupational exposure to organophosphate pesticides on nerve and neuromuscular function. *JOEM* 2002; 44(4):352-357.