

Inside Agromedicine

Partners for Health & Safety in Agriculture, Forestry, and Fisheries

NORTH CAROLINA AGROMEDICINE INSTITUTE / SOUTHERN COASTAL AGROMEDICINE CENTER • WINTER 2007/SPRING 2008

FROM THE DIRECTOR

Kristen Borré, PhD, MPH

North Carolina, a national leader for prevention of agricultural pesticide exposures, relies on the strong commitment of state partners to protect agricultural workers and their families. It was the vision of the NC Department of Agriculture and Consumer Services, the NC Pesticide Board and stakeholders that helped establish the Pesticide Environmental Trust Fund (PETF) in 1993. The PETF was created to enhance efforts to protect the public and environment from toxic exposures, in part through supporting the work of the North Carolina Agromedicine Institute (NCAI) and its partner institutions, North Carolina State University, East Carolina University, and North Carolina Agricultural and Technical State University. The PETF has also supported others in developing resources for outreach to farmers, farmworkers, and their families. Likewise, the NC Department of Health and Human Services has initiated landmark programs to extend health services and outreach to migrant farmworkers and to learn more about the circumstances of pesticide exposure and illness. Despite the vigilant efforts of our State, pesticide exposure resulting in illness and injury does happen. I was honored to take part in the Governor's recent review of pesticide exposure prevention efforts. Prevention of injury and illness requires increased public effort to follow established guidelines when handling all pesticides. Public and private sectors share responsibility to commit resources and reduce barriers for agricultural workers to protect themselves and their families. The NCAI provides a venue where agromedicine partners and stakeholders can transform research and experience into practical solutions. In this issue, we highlight NCAI's research, promising practices and programs that can address the gaps. Together we can make a difference: our future in agriculture depends on it!



Governor's Task Force: Recommendations for Preventing Agricultural Pesticide Exposure

While pesticides are important tools of successful modern agriculture, they can pose serious health risks if not used with appropriate health, safety, and environmental precautions. In January 2008 Governor Mike Easley named the Governor's Task Force on Preventing Agricultural Pesticide Exposure. He charged the group of key government leaders in health and agriculture with making recommendations on how to better protect the health of farmers, pesticide applicators and agricultural workers. Chaired by State Health Director Leah Devlin, the task force examined current regulations and practices and recommended health protection system improvements for North Carolina in an April 2008 report to the Governor. Their recommendations for training, compliance, and healthcare practices are summarized here. The North Carolina legislature is considering these recommendations through House Bill 2460.

TRAINING

1. Expand the Capacity for Agricultural Pesticide Safety Education at Cooperative Extension Service Centers for Growers, Applicators, Crew Leaders, and Farmworkers. Funding: \$352,000 (R)
2. Increase the number of certified Worker Protection Standard (WPS) trainers in the NC Farmworker Health Program to educate farmworkers and their family members. Funding: \$197,152 (R)
3. Make Critical Improvements (information on reproductive, long term and family health risks and on violation reporting; enhanced multiple educational methods) to WPS Training. Funding: \$28,752 Total; \$7,470 (R); \$21,282 (NR); Rulemaking to add new required elements.

4. Establish a Mechanism to Promote Training for Agriculture Crew Leaders Through Coordination between NC Department of Agriculture and NC Employment Security Commission.
5. Promote Community Partnerships for Safe and Healthy Farms to identify and generate support for health-related improvements, including incentives for farmworker access to washing machines, working telephones, emergency medical contact information, adequate showers at the worksite. Funding: \$165,000 (R)

COMPLIANCE

6. Collect additional farm entity information on the Private Pesticide Applicator Certification/Attestation Form to better identify farm entities working in NC.
7. Improve Pesticide Use Recordkeeping by requiring recording the time of day when each pesticide application is completed. Rule making required
8. Extend General Use Pesticide Recordkeeping by increasing record retention time from 30 days to two years. Rule making required
9. Funding to accelerate the Development of a Comprehensive Data Tracking System for Field Inspections in the NC Department of Agriculture. Funding: \$100,000 (NR)
10. Assure the quality and capacity for Monitoring and Compliance Inspections in the NC Department of Agriculture. Funding: \$82,656 Total. \$54,256(R); \$28,400(NR)
11. Enact Laws to Assure Non-retaliation for Individuals Reporting Suspected Violations. Requires an amendment to the NC Labor Law (OSHA).

12. Consider Appointing a Farmworker as an At-Large member of the NC Pesticide Board. Governor's Appointment as Vacancy Occurs.
13. Charge the NC Department of Agriculture to establish an Inter-agency Pesticide Workgroup to meet regularly to improve interagency communication and coordination between government agencies with an annual report to the NC Pesticide Board and the Governor. Governor's Executive Order
14. Evaluate on an ongoing basis as new science and technology emerges, the need for additional enhancements or changes in regulations using the data from health surveillance, compliance monitoring, and the annual report to the NC Pesticide Board and the Governor. Includes establishing crew leader registration/licensing, pesticide violation structure, enhanced record-keeping of time of worker re-entry, requiring annual WPS training.
15. Restore funding to the Pesticide Disposal Assistance Program. Funding: \$197,570 Total. \$162,570 (R); \$35,000 (NR)

HEALTHCARE

16. Strengthen the Acute Pesticide Illness and Injury Reporting, Surveillance, and Follow up Including Training for Healthcare Providers in Occupational and Environmental Illness and Screening for Pesticide Exposure in Clinical Settings. Funding: \$278,360 Total. \$110,000 (R); \$168,360 (NR)
17. Implement a Community Education and Awareness Campaign Regarding Pesticide Exposure Prevention. Funding: \$247,576 (NR)

R = recurring

NR = non-recurring

Agromedicine Partnerships Explore Opportunities for Pesticide Safety and Health

Pesticide Applicator Training Offered in Spanish

In April 2008, Dr. Wayne Buhler, Director of North Carolina Cooperative Extension's Pesticide Safety Education Program, and Cesar Asuaje of Florida Cooperative Extension partnered with the NC Department of Agriculture and Consumer Services (NCDA) to offer pesticide training in Spanish. Two-day classes were offered in Forsyth and Johnston Counties to prepare 40 aspiring commercial applicators for the Ornamental and Turfgrass Pesticide Certification Exam, also offered in Spanish. Registration fees funded the program. Asuaje said: "I saw a great potential in all participants and, as in Florida, most of them were looking to improve their knowledge and job skills. There was no doubt about their good field experience; with proper training and time they will accomplish a lot more." NCDA's Sergio Morales said: "We already have requests for more programs like this one; we have a great potential for Spanish speaking applicators to obtain certification." Buhler commented: "This program was conducted at the request of many Spanish speakers who previously either fared poorly on the exam or were intimidated by it. Johana Furr, currently of NC DOL, deserves much of the credit for initiating the training. Inviting Cesar to lead the instruction was the best thing that we did. He related well to the audience and understood the education and testing process. The exam results indicated that the training was very helpful. We intend to repeat the program next year."



Molecular Advances Enable Human Pesticide Metabolism Research

Research in NC State University's Department of Environmental and Molecular Toxicology is continuing to explore the role of specific genes and the related enzymes that regulate the metabolism of agricultural pesticides such as fipronil, endosulfan, chlorpyrifos and permethrin in humans. Using human liver cells, Drs. Rose (deceased), Hodgson, and Wallace, have discovered important information about

genes that put some people at greater health risk. Their research examines pesticide-pesticide interactions that limit our ability to detoxify pesticides, for example the disruption of the metabolism of permethrin by chlorpyrifos. They have also learned that the metabolism of some pesticides and hormones such as testosterone is linked. These studies are important to unraveling the connections between exposure to pesticides, genetic factors and the development of pesticide toxic effects and diseases such as cancer. This research is funded by the Southern Coastal Agromedicine Center.

Hispanic Farmworkers Test Pesticide Training Toolkit

The majority of farmworkers in North Carolina who work in tobacco, Christmas trees, sweet potatoes and other fruit and vegetable crops, are Spanish-speaking men from Mexico. NC State University Extension specialists Cope, Storm and LePrevost are teaming with designers and others to update the 1998 Pesticides and Human Health crop sheets. The new Pesticides and Farmworker Health toolkit includes one-page, low literacy, illustrated pesticide safety crop sheets in Spanish for 11 crops and lesson plans for trainers. Crop sheets will feature updated pesticide use information and illustrations of pesticide symptoms and toxicity levels. Training guides will use dialogue learning and practical exercises. Staff will be in the field this summer getting feedback from tobacco farmworkers. The 3-year project started in January 2008 with funding from the NCDA Pesticide Environmental Trust Fund.

AgriSafe-NC Offers PPE Services

Health providers and outreach staff at Carolina Oaks Family Health Center will begin screening farmers, farm families, and non-

migrant farmworkers for pesticide exposure this summer as part of the Institute's AgriSafe-NC initiative. In addition to being educated about pesticide exposure health risks, clients may purchase personal protective equipment (PPE) at the clinic and community outreach events. Staff, who have already received training on the recognition and



management of pesticide exposure through a collaborative project between Tri-County Community Health Council and Migrant Clinician's Network, will receive additional training from Dr. Wayne Buhler, NCSU Pesticide Safety Education Coordinator. Buhler's training will include commonly used pesticides, NC pesticide regulations, and hands-on learning about PPE selection and fit. AgriSafe-NC staff will work with local Cooperative Extension agents to meet the community's pesticide exposure prevention needs. [SEE AGRISAFE-NC ARTICLE ON PAGE 3.]

Survey of African-American Farmers Reveals Safety Strengths and Needs

Drs. Ibrahim, Thompson, and Okafor at North Carolina Agricultural and Technical University (NC A&T), working with partners in Georgia, South Carolina, Virginia, Florida, Mississippi, and Alabama, have assessed the occupational safety and health of African American farmers in the southern coastal states. They surveyed 1005 African American farmers about farm-related injuries and illness, safety practices and factors affecting health and safety. The most common injuries were cuts, heat stress, and burns with most injuries occurring during farm or equipment maintenance. Less than twenty-one percent of farmers reported consistently using personal protective equipment (PPE) during chemical/pesticide handling activities. Farmers who were more likely to do so had higher education levels, were more concerned about their health, and were 45-54 years of age. As a result of study findings, safety training and increased awareness are strongly recommended for African American farmers. The study was funded by the Southern Coastal Agromedicine Center.

Remembering Ron Hudler: A Positive Force for Safety

Ronald Frederick Hudler, 73, a state and national leader in the Christmas tree industry, passed away on January 24, 2008 at the family farm in Grassy Creek, North Carolina. His son Fred Hudler, 44, and employee John S. Miller, 25, were also tragically murdered in the robbery at Ron's home on that day.

Ron Hudler was a positive force in the world of agricultural safety and health in North Carolina and beyond. Ron served as Chair of the Agricultural Safety & Health Council of the NC Department of Labor (NCDOL) from December 2001 until his death. Regina Luginbuhl, NCDOL Agricultural Safety and Health Bureau Chief, remembers Ron not only for his service, but as "a happy, generous man who loved to grow roses and vegetables and canned his own tomatoes."

In 2006 Ron and his son Dale collaborated with other growers, NCDOL, the NC Cooperative Extension Ashe County Center, the NC Agromedicine Institute and many others to host an agricultural workplace safety training day at their farm, Hudler Carolina Tree Farms. More than 175 workers from several farms attended and were trained in the safe use of pesticides, tree balers, PTO shafts, and motor vehicles.

The Hudler operation was one of three farms featured in a video on safe farming practices of Gold Star Growers, developed by the NC Department of Labor, produced by NC State University and funded by the NC Agromedicine Institute.

Hudler Farms provided the White House Christmas tree in 1995 and numerous trees free of charge to military families.

Memorial donations for Ron and Fred Hudler may be made to benefit Fred's children Tate and Cole Hudler with checks to: AF Bank, PO Box 26, West Jefferson, NC 28694, Attention: Tate and Cole Hudler Fund. Donations in memory of Miller may be made to Amanda Miller, P.O. Box 1452, West Jefferson, NC 28694.



Regina Luginbuhl and Ron Hudler

A Glimpse of AgriSafe at the 2008 Southern Farm Show

Attendees at the 2008 Southern Farm Show held at the State Fairgrounds in February received a glimpse of the Institute's (NCAI) new AgriSafe-NC initiative. AgriSafe-NC is scheduled to begin operations in mid-July at Carolina Oaks Family Health Center in Four Oaks.

With the assistance of staff from Tri-County Community Health Center, Carolina Oaks' parent organization, more than eighty attendees received free blood pressure and blood glucose screenings. Individuals with elevated readings were encouraged to make an appointment with their local physician for follow-up.

In addition to information about the importance of tractor safety for children and adults, noise reduction, prevention of pesticide exposure, the NC Farm Bureau Safety Program, and prevention of suffocation in grain bins, the NCAI booth also featured a display of personal protective and other safety equipment including goggles, safety glasses, fire extinguisher, ear plugs, and tractor/combine first aid kits. Much of the equipment, which will be available for customized fit and purchase through AgriSafe-NC, was provided by Agri-Supply Company of Garner.

AgriSafe-NC staff fielded many inquiries on proper selection of PPE, along with questions about farm machinery, safety education

for youth and clinic services. Attendees were treated to free brochures, DVD's, videos, brochures, decals, and ear plugs. Two lucky attendees won door prizes: a PPE bucket donated by Agri-Supply Company and a tractor first aid kit provided by the NCAI.

The AgriSafe-NC pilot project, funded by the Kate B. Reynolds Charitable Trust, will provide health assessments that include both routine items (i.e., blood pressure, blood glucose, height/weight) and conditions for which growers, their families, and their workers are most at risk (i.e., lung function, skin cancer, hearing). Health education, selection/fit of PPE, and assistance with personal health and safety goal development will be provided. In addition to clinic services, staff will also be conducting outreach activities in conjunction with community partners to provide the same services on farms and at community events. For more information, contact Robin Tutor by phone at 252.744.1045 or by email: tutorr@ecu.edu.



Tri-County nurse checks a grower's BP.

CALENDAR

June 22-26, 2008: National Institute for Farm Safety (NIFS) Annual Conference and North American Agromedicine Consortium Annual Meeting. Eden Resort Inn, Lancaster, PA. <http://www.ag.ohio-state.edu/~agsafety/NIFS/nifs.htm> and <http://www.agromedicine.org/>.

June 30, 2008: Deadline for public comment: National Occupational Research Agenda (NORA) for Agriculture, Forestry and Fishing Sector. <http://www.cdc.gov/niosh/nora/comment/public/AgForFishDraftMar2008/>.

July 13-17, 2008: National Association of County Agricultural Agents Annual Meeting & Professional Improvement Conference. Greensboro, NC. <http://www.ncacaa.org/2008ampic/>.

July 29, 2008: NORA Symposium 2008: Public Market for Ideas and Partnerships. Sheraton Denver West Hotel. Lakewood, Colorado. <http://www.cdc.gov/niosh/nora/symp08/>

August 1, 2008: Manuscript Submission Deadline, American Journal of Public Health Call for Papers: Environmental and Occupational Justice. <http://www.ajph.org>.

August 10-16, 2008: National Health Center Week. America's Health Centers: Home of America's Health Care Heroes. <http://www.healthcenterweek.org/>

September 15-19, 2008: Galaxy III: Celebrating the Extension System: Strengths, Diversity, and Unique Qualities. Indianapolis, IN. <https://sharepoint.agriculture.purdue.edu/ces/galaxy/default.aspx>.

September 20, 2008: 4th Annual Day at the Docks: A Celebration of Hatteras Island Watermen. Hatteras, NC.

September 21-27, 2008: National Farm Safety and Health Week. Farm Safety-Protect YOUR Investment. <http://www2.nsc.org/necas/>.

October 1-3, 2008: NC Forestry Association Annual Meeting, Hickory, NC. <http://www.ncforestry.org>.

October 19-23, 2008: Sixth International Symposium: Public Health and the Agricultural Rural Ecosystem, Saskatchewan, Saskatchewan, Canada. <http://pharesymposium2008.usask.ca>.

October 23-25, 2008: 21st Annual East Coast Migrant Stream Forum, Providence, Rhode Island. <http://www.ncchca.org/165228.ihtml>.

November 11-13, 2008: Health and Safety in Western Agriculture: New Paths. Cle Elum, Washington. <http://depts.washington.edu/ehce/NWcenter/courses/AGCONF-08.html>.



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