Risk Mitigation Measures

Project Summary

May 31, 2012

As described in the original application for funding to the NC Tobacco Trust Fund Commission, the purpose of the Risk Mitigation Measures (RMM) project was to help farms across NC implement stringent risk mitigation measures required by the U.S. Environmental Protection Agency (EPA) beginning 2010. At least 25 interactive workshops were planned to train individuals on risk mitigation measures including development of a Fumigant Management Plan and requirements for buffer zones. Required medical clearance for respirator use, respirator fit testing, and a full face respirator was also to be provided at a reduced cost. Educational materials including a directory of occupational health services and respiratory protection suppliers were to be widely disseminated via partner websites, commodity association meetings, production meetings, and other means.

Work of the project was guided by a Soil Fumigant Workgroup that included representatives from NC Department of Agriculture, NC State University, NC Division of Public Health, chemical vendors, a private occupational health group, the NC Strawberry Association, NC Farmworker Health Program, and NC Agromedicine Institute. Work was accomplished through thirteen group face-to-face meetings as well as through email, phone calls, and individual meetings. The success of the project is directly attributable to the collaborative commitments of these agencies and their staff.

The RMM project participated in 46 interactive workshops and/or respirator fit test events across the state in conjunction with local Cooperative Extension offices, commodity groups, chemical vendors, and members of the NC Soil Fumigant Workgroup. Workshops addressed Phase I RMM measures released by the US EPA in December 2010 including: 1) development of fumigant management plans; 2) reclassification of fumigants to restructured use pesticides; 3) worker protection measures including medical clearance, respirator fit tests; 4) required handler training; and 6) re-entry restrictions. Workshop participants included growers, Cooperative Extension agents, chemical vendors, pesticide inspectors, and agronomists with two regional workshops held specifically for Cooperative Extension agents, pesticide inspectors, and agronomists to ensure that all individuals providing information to farms were ‘on the same page’. Approximately 1200 individuals received education relative to RMM through these events with at least 1016 being current or former tobacco farmers and at least 152 reporting that they were former quota holders.
In addition to information disseminated via community events, information on RMM was also distributed through a variety of other channels including NC Crop Protection School, Tobacco News Quarterly, Ag Carolina Financial, newspapers, NCDA ‘Pesticides Update’, tobacco tours, websites, face book, newsletters and list serves. The project developed a number of educational documents for farmers including: 1) a statewide resource list of medical clearance and respirator fit test providers; 2) a list of vendors providing respirators, cartridges, and air monitoring devices, 3) a frequently asked questions document; and 4) an informational sheet on respirator care and maintenance. For farms interested in learning how to perform qualitative fit tests for their own employees, an informational sheet on qualitative fit test training and supplies was also generated.

The project conducted medical clearance and respirator fit tests for 733 individuals at community events or through private farm visits. To expand the availability of medical clearance and respirator fit test services to farms across the state, the RMM project provided technical assistance to occupational health companies, chemical vendors, and local Cooperative Extension offices across the state. Five occupational health companies, Henderson & Associates (Elizabeth City), EI Group (Morrisville), HazRisk Management (Clayton), Occumed (Greensboro), and Mission Hospital (Asheville) were provided with a kit containing samples of different manufacturers respirators in different sizes so that farmers could ensure they were fitted with the respirator that fit them correctly before purchasing. Occupational health companies were also provided with fit test adapters on an as needed basis to use with quantitative fit test machines. Adapters are different for each manufacturer’s respirators and respirators cannot be quantitatively fit tested without them. While the total number of individuals served by these sources is not fully known, it is estimated to be in excess of 600. A minimum of 694 farms have benefitted from combined services of RMM project and community partners.

Participant surveys were conducted in follow-up to three events: 1) Regional training for Cooperative Extension agents, agronomists, and pesticide inspectors; 2) Forsyth County Cooperative Extension; and 3) NC Crop Protection School. A general survey was also conducted with farmers who participated in fit test events in 2011. A summary of results from these surveys indicating the benefit of the project in assisting farms and supporting agencies relative to RMM is as follows:

- Regional Training for Cooperative Extension agents, agronomists, and pesticide inspectors: Change in mean response of participants relative to knowledge before/after training is as indicated below. Responses ranged from 1 – not knowledgeable to 5-very knowledgeable.

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<thead>
<tr>
<th>Topic</th>
<th>Prior to Training (Mean Response)</th>
<th>After Training (Mean Response)</th>
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<tbody>
<tr>
<td>Risk Mitigation Measures</td>
<td>2.7</td>
<td>3.80</td>
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<tr>
<td>Mandatory Good Agricultural Practices</td>
<td>3.2</td>
<td>4.05</td>
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<td>Fumigant Management Plans</td>
<td>2.45</td>
<td>3.85</td>
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<tr>
<td>Worker Protection/Medical Clearance and Respirator Fit Testing</td>
<td>2.55</td>
<td>4.05</td>
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<tr>
<td>Topic</td>
<td>Mean Response</td>
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<tr>
<td>Risk Mitigation Measures</td>
<td>3.15</td>
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<td>Mandatory Good Agricultural Practices</td>
<td>3.30</td>
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<td>Fumigant Management Plans</td>
<td>3.25</td>
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<td>Worker Protection/Medical Clearance and Respirator Fit Testing</td>
<td>3.05</td>
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<td>Industry Support</td>
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<tr>
<td>Crop Specific Issues (plant pathology)</td>
<td>3.10</td>
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When asked if participants felt whether or not they had sufficient information to assist growers in their area to comply with RMM completion of training, mean responses were as follows (responses ranged from 1 – strongly disagree to 4 – strongly agree):

- **Forsyth:** Towards the end of 2010, EPA changed rules and regulations pertaining to the use of multi-purpose fumigants. These changes were broad in scope and created much confusion within the agricultural community. In January 2011, 61 producers from ten surrounding counties attended the North Carolina’s first county “fumigation training” - sponsored by Forsyth Cooperative Extension. In class surveys showed that 67% of participants came to the training with a “low” level of knowledge regarding the new regulations. When the training was complete, 100% of participants showed an upward trend in knowledge with 44% showing a movement to “high” or “very high” knowledge levels. In addition to rules training, 51 producers were “fit tested” for a respirator, passed the pulmonary test, and purchased a respirator the day of the training. A follow-up training was held in March to help producers write the mandatory fumigation management plan. This joint meeting conducted by agents from Forsyth, Davidson, Yadkin, and Surry helped 30 participants understand what was required in the fumigation management plan. Each participant left with a plan written for one field and the knowledge of how to complete the plan for the rest of the farm. Because of the these trainings, the major legal requirements were met prior to the start of the fumigation season, producers are much more familiar with the new regulations, participants surveyed show a greater interest in safe use of fumigants, and the stress level of participating farmers was greatly reduced.

- **2011 NC Crop Protection School:** 62% of individuals participating in session on ‘Updates to Medical Clearance and Respiratory Protection Measures’ rated the session as good, very good, or excellent. 11% rated the session as fair with 27% indicating session content was not applicable to them.

- Results from general survey with individuals participating in Fit Test Events held during Spring, 2011 indicated that they plan to use respirators and other appropriate personal
Note that RMM require use of respiratory protection only in case of a sensory detection when individuals do not plan to leave the fumigation site. Survey results indicate that individuals see the benefit of using respiratory protection even when not required – an unexpected benefit of the RMM project.

Per the NC Department of Agriculture and Consumer Services – Pesticides Division, of the estimated 1300 farms using fumigants across the state, only two cases of non-compliance have been closed directly relating to fumigation since Phase I Risk Mitigation Measures went into effect. One case failed to: 1) develop a Fumigant Management Plan; 2) provide the required handler safety training prior to making the application; 3) provide Fumigant Safe Handling information; 4) provide an appropriate air-purifying respirator; and 5) failed to include the name of the fumigant in use and the date/time entry the restricted period is over on the posted Fumigant Treated Area sign. The second posted a Worker Protection Standard sign instead of the Treated Area Sign. It is not known whether or not either of these individuals attended a Risk Mitigation Measures session sponsored by the project before or after interaction with the Pesticides Division.

$112,920.98 in cost share funds were provided to farms across NC to assist with implementation of RMM either through direct cost share (at time of project coordinated respirator fit test event) or through grower reimbursement for services and equipment obtained from an alternate source. Farms provided an equal match towards implementation. The NC Agromedicine Institute was awarded an additional $20,000 from the NC Pesticide Environmental Trust Fund which is being used to support ongoing cost share needs of farms for medical clearance, respirator fit tests, and purchase of respirators and cartridges. To date, $2851.00 of these funds has been released to growers.

North Carolina’s RMM project has been recognized nationally by the US EPA as well as by other states that have not been fortunate to have the support afforded by the NC Tobacco Trust Fund Commission and Soil Fumigant Workgroup. Technical assistance has been sought from NC’s Soil Fumigant Workgroup by farmers, Cooperative Extension agents, and/or state
Departments of Agriculture from six other states. Most importantly, this recognition allowed NC to play a significant role in working with other states on a policy position paper that was submitted to the US EPA requesting a change in RMM requiring farms to have a self-contained breathing apparatus on site in case of a fumigant emergency. Within six months of NC meeting face-to-face with EPA and submitting the position paper, the requirement was reversed. This change resulted in over $3 million dollars in savings to NC farms alone. As recently as May 4, 2012, EPA again sought out input from NC as to how implementation of the RMM was going and what strategies were needed to improve the process.

With the support of the NC Tobacco Trust Fund Commission, farms across NC using soil fumigants have had unprecedented support in complying with Phase I RMM. On behalf of these individuals, the Soil Fumigant Workgroup and NC Agromedicine Institute, we wish to express our appreciation to the Commission.
April 1: AgriSafe of CommWell Health conducted respirator fit test for a local tobacco farmer referred by his chemical company.

April 2: Returned OHD fit test machines on-loan from NC Department of Labor for annual inventory. Machines have been on loan throughout the duration of the project at no cost.

April 4: Met with ECU Grants & Contracts to review fiscal expenditures to date.

April 5: Farmer fit tested on April 1 brought another farmer to CommWell Health to be fit tested.

April 11-May 3: Worked with NCDA, EI Group, and EPA staff to prepare for EPA visit to NC on May 4th (see below).

April 24: A farmer from Clinton, NC seen at a Sampson County Fit to Farm event came to CommWell Health to have annual respirator fit test and medical clearance completed.

May 4th: Provided overview of Risk Mitigation Measure Project to EPA Pesticides Section staff visiting North Carolina. Overview included information on differences in medical clearance and fit test services and costs among providers as well as a respirator fit test demo (see attached presentation).

George Elderbaum with the EI Group explains the differences in respirators to Jim Jones, Assistant Deputy Administrator, EPA Pesticide Programs
George Elderbaum, El Group, simulates fit testing with Assistant Deputy Director, Jim Jones.

Second from right, Deputy Director, EPA Pesticide Programs, Kevin Keaney, listens to presentation at NCDA.

Robin Tutor-Marcom listens as EPA asks a question about medical clearance & fit test comparison
Note received from Ashley Nelsen and Kevin Keaney, US EPA, following May 4th visit to NC.
Schedule of Events
North Carolina Pesticide Worker Safety - Challenges and Successes
Thursday, May 3rd – Friday, May 4th 2012

Thursday, May 3rd

7:36 AM  
Airport Pick Up- Raleigh- Durham International Airport

8:00 AM  
Travel to EPA Office of Research and Development, Research Triangle Park

1:00 PM  
Pick Up at Research Triangle Park to Duke University, Durham North Carolina

1:30 PM  
Student Action with Farmworkers (SAF) - Melinda Wiggins
            Toxic Free North Carolina- Fawn Pattison

3:30 PM  
Association of Farmworker Opportunity Programs (AFOP) - Levy Schroeder

4:15 PM  
Migrant Clinicians Network (MCN) - Amy Liebman
            North Carolina Farmworker Health Program - Elizabeth Freeman Lambar

5:00 PM  
Dinner

6:45 PM  
Arrive at Eastern Regional Center of Wake County Human Services Clinic in Zebulon, NC

7:30 PM  
Arrive at Farmworker Site near Fuquay-Varina, Wake County with Mary Rockers

8:00 PM  
Meeting with Farmworkers

9:30 PM  
Return to Hilton Garden Inn

Friday, May 4th

7:25 AM  
Hotel Check Out

7:45 AM  
Leave Hotel for North Carolina Department of Agriculture & Consumer Services
8:00 AM  Introductions
8:15 AM  Introduction to Fit Testing, Conduct fit Test, Selection and Care of Respirators
         Robin Tutor NC Agro Medicine Institute
         George Elderbaum, EI Group, Inc.
8:45 AM  Respirator & Risk Mitigation Measure I Project Update
         Robin Tutor NC Agro Medicine Institute
9:15 AM  NC Public Health Dept. - Pesticide Worker Safety & Health – Sheila Higgins
9:45 AM  NCSU & NC Cooperative Extension Service Activities
         Pesticides and Farmworker Toolkit - Catherine LePrevost
         Ag Health Study Update - Julia Storm Agromedicine Information
         Mountain PESO (Pesticide Education and Safety Outreach Program – Jim Hamilton, PhD. County Extension Director
         General Discussion of NC Cooperative Extension Challenges
         Billy Little, Ag. Extension Agent Wilson Count
         Roy Thagard, Ag. Extension Agent Greene County
         Tim Hambrick, Ag. Extension Agent Forsyth County
10:40 AM BREAK
10:45 AM  North Carolina Department of Agriculture & Consumer Services
         Staff WPS Update
         James Burnette, Jr., Director
         Patrick Jones, Deputy Director Pest. Programs
         Renee Woody, Cert., Licensing and Outreach Mgr.
         Shannon Joyner, Admin. Officer – EPA Reports
         Pat Farquhar, Eastern Field Manger
         Dwight Seal, Western Field Manger
         Sergio Morales-Monroy, Bilingual Specialist
         Barry Dunn, Pest. Inspector II
12:00 PM Lunch at Taylor Wholesale Nursery
1:00 PM  WPS Compliance – Issues for Taylor Nursery
         Jason Brock, Manager
3:00 PM  Leave for Raleigh- Durham International Airport
4:45 PM  Flight to DCA