A. PROJECT TITLE
   Hydration Methods in Preventing Heat Disorders in Field Workers

B. PROJECT OFFICER(s)
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C. PROJECT DESCRIPTION
   Concerned by the increasing reports of heat related illness, researchers in this project are conducting a study to assess impact of different fluid intake protocols on the physiological health status of farm workers, primarily Hispanic working in produce and tobacco field operations in high heat conditions. The study builds on baseline assessment data collected through a grant funded by the United States Department of Agriculture in 2000-2002.

   The research team is comprised of a nurse, a culturally competent bilingual interpreter, and a trained assistant for collecting physiological measures from each subject every two hours during the workday. An Industrial Engineering team member documents data related to heat load obtained from environmental instruments at three locations in the field. Physiological measures of temperature, pulse, respirations, blood pressure (supine and standing), and cognitive function are taken from each study participant at two-hour intervals throughout the workday. Observations regarding appearance (clothing worn, perspiration, etc.) as well as self-reported data such as foods eaten and hydration activities the night and morning before reporting to work are also recorded. Worker productivity is measured by tracking the number of buckets picked over the period of the workday.

   Information gained from this study will be useful in identifying and incorporating best management practices in the field aimed at maintaining and/or improving workers’ sense of well-being, their cognitive function, and their productivity. In addition, educational programs/materials based on findings of these studies potentially will benefit both farm workers and farm owners by promoting health, preventing heat-related illness, and increasing productivity.

   Preliminary results indicate that the type of fluid consumed does not affect physiological indicators of heat stress when temperature and hydration level is controlled in research participants. Organization of work and type of field work appear to be key to prevention of heat stress on high heat index days. Final analysis of data, dissemination of the findings and development of educational materials will continue to occur during the remaining portion of the grant.

D. PROJECT START AND END DATES
   September 30, 2001 – September 29, 2006
E. Project Budget
$194,632.00

F. Project Accomplishments for Program Cycle:
- Used services of a professional editor to outline priorities and format for publications and presentations of material
- Disseminated information at meetings and conferences
- Worked with biostatistics faculty at ECU to assist with the development of the data base, analysis, and report writing.
- Worked on preparing detailed reports outlining findings for each year. These reports are close to completion.
- Communicated preliminary findings to intervention team which is planning an intervention research project for heat stress prevention.
- Worked with NC DOL Agricultural Safety and Health Advisory Board to make recommendations for educational materials for use in agricultural work settings.

G. PROJECT PRODUCTS
1. Presentations


2. Publications: none

2. Education/Training/Outreach: none

H. STATES THE PROJECT WAS ACTIVE IN
North Carolina