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. Final analysis of data and dissemination of the findings and development of educational materials will continue occur during the first half of year 2005.

D. PROJECT START AND END DATES
October 1, 2001 – September 29, 2005

E. PROJECT ACCOMPLISHMENTS FOR PROGRAM CYCLE:
• Met with potential growers to gain permission to have access to their farms and field workers for the study
Developed and prepared all job descriptions for the study field staff
Calibrated all electronic environmental and medical measuring devices to ensure accuracy in the field
A data analysis expert has been contracted to perform statistical analysis of current data and to ensure the database is consistent in preparation for 2004 assessments
Recruited Heat Stress Team members for 2004 assessments
Trained Heat Stress Team members on all phases of the assessment procedures
Contacted farmers and gained access to four farms for conducting 2004 Heat Stress assessments
Upgraded and improved our study database with the assistance of representatives of the Bio Statistics Department at ECU
Completed all 2004 field assessments
Worked with Bio-Statistical faculty at ECU to assist with the development of the database

F. PROJECT PRODUCTS
Publications
Assessing Heat Stress in Agricultural Field Workers. Edge Magazine, East Carolina University, August 1, 2004
Heat Stress Study to Help Migrant Farm Workers. The East Carolinian, East Carolina University Student Newspaper, July 7, 2004
Breaking a Sweat; ECU-based researchers near end of 4-year heat stress study. The Daily Reflector, Greenville, NC. August 9, 2004
Presentations

STATES THE PROJECT WAS ACTIVE IN
North Carolina