Conservation Research Program To Improve Appalachia Economy

Ways of helping the 17 million people in the Appalachia region improve their economy through the best possible use of soil and water resources will be intensively investigated, says a U S Department of Agriculture announcement.

A research team of soil scientists and agricultural engineers from USDA's Agricultural Research Service the 12 Appalachian States, and other federal agencies will be based at the University of West Virginia at Morgantown and investigate problems peculiar to Appalachia — problems not being studied elsewhere They also will adapt information from research in other areas to solving problems in Appalachia, a region that covers 373 counties in the dozen States

Although the program covers a broad area the scientists have specific goals (1) providing more clean water for communities and for agriculture recreation and industrial uses by improving water storage facilities and by minimizing pollution and (2) developing soil and water conservation practices that will insure more efficient use of available water and reduce soil erosion losses.

The scientists will conduct other basic studies to determine how best to revitalize subsoils laid bare by erosion, strip mining or urban development They also will study methods for improving vegetative cover in these critical areas

Funds for this work will come from monies appropriated by Congress to promote economic development of the Appalachia region

The work will be done in cooperation with agricultural experiment stations in Alabama Georgia Kentucky Maryland New York North Carolina Ohio Pennsylvania South Carolina Tennessee, Virginia and West Virginia

Cow's Ear Temperature Is Best Indicator Of Heat Effects On Body

ARS scientists "play it by ear" when they want to take a cow's temperature. They use a newly designed thermometer fitted into the animal's ear canal to help find reasons for reduced milk production during hot weather

Medical researchers have found the ear thermometer more reliable than the rectal thermometer to measure the effect of heat on humans ARS dairy husbandman A J Guidry and research dairy husbandman R E. McDowell thought the ear thermometer might be equally useful for related dairy cattle research

To adapt the ear thermometer to their needs, the scientists studied the cow's ear canal carefully and fashioned a flexible probe that reaches 4½ inches into her ear — within ⅛ inch of the ear drum, or tympanic membrane This explains the new tool's scientific name: tympanic thermometer.

The cows did not seem to mind the tympanic thermometer; once the thermometers were in place, they showed no sign of discomfort.

Closeness to the ear drum is a major advantage of the tympanic thermometer for heat-stress research. The ear drum provides the most practical approach from outside the body to the hypothalamus, the organ at the base of the brain where all body reactions to heat are believed to originate. When the barn temperature changes, the ear thermometer quickly shows the resultant change of temperature in the body to which the hypothalamus would respond.

During a recent test, tympanic thermometers remained in cows' ears for as long as 7 hours ARS technicians took ear temperature readings every 2 minutes while they cycled air temperature in the experimental barn from 65 degrees to 112 degrees F. and back to 65 degrees.

To the scientists' satisfaction, tympanic measurement sensed changes as minor as one-fiftieth of a degree Fahrenheit. Ear temperature proved to be highly responsive to changes of temperature in the barn and undisturbed by temperature fluctuations caused by passage of waste material. These temperature fluctuations distort prolonged readings made with a rectal thermometer.

Body temperature is, of course, only one of the reactions Guidry and McDowell measure when they increase the heat in the barn. They also check functions such as breathing, blood pressure, sweating, and digestion — in a continuing effort to discover ways to keep cows as productive as possible despite hot weather.

Milk Promotion Will Require 8 Million $ In '66

Next year, dairy farmers will invest a total of $8 2-million in the American Dairy Association's non-brand advertising, merchandising, research, and public relations program

A budget for that amount was approved by the Board of Directors of ADA at a recent meeting in Denver

Non-brand consumer advertising for milk and other dairy foods will take 71 percent of the budget The remainder will be used to finance ADA's research merchandising and public relations activities

Advertising for the various products is allocated according to milk producers' requests

In the ADA program dairy farmers invest two cents for each 100 pounds of milk marketed Part of the fund is used for in-state programs, the balance for the nationwide efforts

● Conservation Needs

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of the Department's study reported that 6 098 tracts of land in 66 counties will be examined The information gained will indicate the kind of treatment the land needs for conservation and improved use It will be available to local and state agencies planning groups land developers and other land users

This study M Keeve said will update the original Conservation Needs Inventory completed in Pennsylvania in 1959 A state committee will supervise the survey which will be carried out by local conservation needs committees organized in each of the counties

The survey is expected to be completed by 1967 and the information will be published and made available to interested people agencies, and organizations throughout the Commonwealth.