



# NEWS RELEASE

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## **USDA RESEARCHERS INVESTIGATE THE USE OF INFRARED CAMERAS TO DETECT WILDLIFE DISEASES**

FORT COLLINS, Colo., Sept. 30, 2005-Researchers at the U.S. Department of Agriculture's National Wildlife Research Center (NWRC) recently completed laboratory trials using infrared thermography to successfully detect signs of rabies in experimentally infected raccoons and signs of foot-and-mouth disease in experimentally infected domestic cattle and pronghorn antelope. NWRC's studies were conducted in conjunction with existing disease research at Colorado State University and with USDA's veterinary services program.

"The use of infrared thermography in the initial screening, surveillance and monitoring of foreign and domestic animal diseases could potentially save millions of dollars for animal industries, public health and wildlife management agencies," said NWRC Director Richard Bruggers.

Thermography is a technique that detects and measures variations in the heat emitted by various regions of the body and transforms them into visible signals that can be recorded photographically. Coupled with what we know about certain diseases and their clinical signs, this technique could potentially be used to detect and measure increases in an animal's surface temperature as a result of infections. These changes in temperature often occur at specific locations on the animal's body and form thermal patterns that may be unique to particular diseases. For instance, in the case of rabies, heat associated with viral activity is most prevalent in the nose and rostrum area and shows up as white (hot) or bright red (very warm) on thermal images. With foot-and-mouth disease, heat associated with viral activity is visible in and around the feet and in oral lesions. In rabies, the pattern of infection using infrared thermography appears to be unique. More research is needed to determine if the thermal pattern is unique for foot-and-mouth disease.

To use infrared thermography, one simply needs an infrared camera and its associated computer software; thus, the technique has the potential to be easily adaptable to field situations. Using newer models of infrared cameras, thermal images of rabies-infected raccoons may be detected from as far away as 100-150 feet. More sophisticated models used in aerial applications may detect infected animals at much greater distances.

NWRC scientists plan to field test the use of infrared thermography to detect signs of rabies in wild raccoons later this year. Foot-and-mouth disease has not been found in the United

States since 1929, but is endemic in other regions of the world. Eventually, scientists want to expand the use of infrared thermography to other animal diseases including vesicular stomatitis, rinderpest, African swine fever, classical swine fever, bovine tuberculosis and others. NWRC scientists are seeking interest and working to coordinate with foreign governments to field-test the technique on foot-and-mouth and other exotic diseases.

WS' NWRC is the federal institution devoted to resolving problems caused by the interaction of wild animals and society. The center applies scientific expertise to the development of practical methods to resolve these problems and to maintain the quality of the environments shared with wildlife. To learn more about NWRC, visit its Web site at <http://www.aphis.usda.gov/ws/nwrc>.

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