

FEATURE – NANO-BARCODES FOR DISEASE DETECTION

INTRO: The U.S. Department of Agriculture is helping scientists make tiny bar codes to detect disease in people or places. USDA's Pat O'Leary has the story. (1:34)

BAR CODES ARE SMALL SYMBOLS THAT MAKE IDENTIFICATIONS FAST AND EASY. NOW SCIENTISTS ARE COMBINING THAT CONCEPT WITH NANOTECHNOLOGY TO CREATE TINY "DISEASE DETECTORS." THEY' RE MANIPULATING MOLECULES TO MAKE UNIQUES MICROSCOPIC PROBES – NANO-BARCODES - THAT COULD TAG PATHOGENS IN THE HUMAN BODY OR OTHER ENVIRONMENTS.

Dan Luo, Cornell University: There are many agricultural applications. For example, you can use that to potentially diagnose the infections in a farm. You can use nano barcodes to trace the bacteria in compost. It's very much like the barcodes you see in grocery stores.

PARTNERING WITH THE U.S. DEPARTMENT OF AGRICULTURE, CORNELL UNIVERSITY RESEARCHER DAN LUO IS FINDING NEW WAYS TO STRUCTURE DNA, WHICH MAKES THE NANO BARCODES POSSIBLE. HE'S ALSO WORKING ON A PORTABLE DISEASE DETECTOR, SIMILAR TO THIS PROTOTYPE.

Luo: So that we don't have to send the sample to the lab to make the detection. Rather, we can do the detection in a farm or on the bedside of a hospital or in a local environment. Ultimately, it will interface with either a laptop or PDA. Then you can detect right in the battlefield, for example, or in a farm, what caused the infection. And then you can make a decision right there. You don't have to wait.

THIS PROJECT IS FROM A SERIES OF NANOTECHNOLOGY GRANTS FROM USDA'S COOPERATIVE STATE RESEARCH, EDUCATION AND EXTENSION SERVICE. FOR THE U.S. DEPARTMENT OF AGRICULTURE, I'M PAT O'LEARY.