News Brief

Using Plants to Detect Landmines

Researchers from Virginia Commonwealth University (VCU) in Richmond, Virginia (U.S.) are investigating how plants can be used to detect buried explosives, such as landmines, in areas of dense vegetation, where traditional demining methods are difficult.[1] Using an experimental minefield developed by the National Explosives Waste Technology and Evaluation Center, VCU researchers determined that toxins like TNT and research department explosive leak into the ground and make plants sick.[1, 2] Donald Young, Ph.D., chairman and professor of biology in the VCU College of Humanities and Sciences, and Julie Zinnert, Ph.D., a biology and research scientist with the U.S. Army Corps of Engineers, are leading a team of VCU graduate students in the research.[3]

Studies show that toxins from explosives leak into the surrounding environment, affecting plant health, especially herbaceous plants more than woody plants.[3] Thus, researchers are considering creating an "Explosive Specific Index" that will record how explosives affect various vegetation types. The index can quickly analyze the health of an area of vegetation where landmines may be visually obscured.[2] A key to this yet-to-be-developed method of detection involves quick and cost-effective

scanning of large contaminated areas. Airborne infrared imaging appears to be the most promising method.[1] VCU researchers "observed a notable change in the infrared portion of the spectral signature in plants that had been exposed to contaminated soil."[3] The VCU team seeks to develop a cost-effective method for detecting plant damage from sensors on airplanes or cellphones.[2]

See endnotes page 66
~ Patrick Shea, CISR staff