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Space satellite to help farmers gauge water levels in paddocks

Media Release, Saturday 11 November 2006

Australian farmers will soon be able to measure soil moisture in paddocks from data collected by a space satellite under a University of Melbourne, NASA and European Space Agency (ESA) experiment.

Dr Jeff Walker from the Department of Civil and Environmental Engineering of the University of Melbourne is leading an international experiment, (the National Airborne Field Experiment) to test and enhance satellite technology that will measure soil moisture levels in paddocks for Australian primary producers.

"Using the space technology, farmers will be able to obtain predictions about soil moisture and crop yield out to seven days and three months. This will help them to make critical decisions about what to plant and when, their likely crop yield," Dr Walker said.

"Our vision is that via the internet, farmers will be able to download key information about current and future soil moisture in their paddocks, which has been generated from a combination of model predictions and satellite observations."

Using a small aircraft fitted with equipment similar to that of the satellite, the University of Melbourne-led research team aims to find out how to measure soil moisture up to one metre underground. The satellite technology currently measures only five centimetres below the earth's surface.

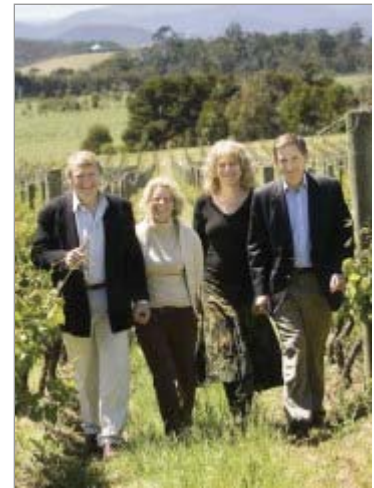
Researchers on foot will be collecting ground measurements concurrently with the plane as it flies over the area, to help validate the aircraft's measurements.

The result of the experiments will be the development of the first dedicated soil moisture satellite (SMOS - Soil Moisture and Ocean Salinity) to be launched by the ESA next year.

"Water management for irrigation is a critical issue for farmers in Australia and the world," Dr Walker said.

"The enhanced satellite technology will enable farmers to forecast crop yield, politicians to make drought declarations and monitor global climate

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change, and organisations like the Bureau of Meteorology to conduct flood forecasting and weather prediction,” he said.

The three week experiment is being conducted between 30 October and 22 November in Narrandera, 100 kms west of Wagga, NSW. It is the second in a series of experiments to be conducted in Australia.

International collaborators include USA (NASA, USDA, Uni South Carolina)
Canada (Env. Canada, Guelph Uni) France (CESBIO)
Netherlands (Wageningen University) Australia
(University of Melbourne, University of Newcastle,
Flinders University, CSIRO, Charles Sturt University,
NSW Dept of Primary Industries, NSW Dept of
Natural Resources)

Images/vision available

Photographs of the aircraft and activities during the experiment

Vision of thermal imaging of the terrain

Image of ESA satellite available from
www.esa.int/esaLP/ESAMBA2VMOC_LPsmos_1.html

Website on experiment
www.nafe.unimelb.edu.au

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