



### Case Details

In the surrounds of the city of Guangzhou, a spell of cold weather poetically named the cold winds, threaten to slash the yields from the second rice crop of the season by 50%. These conditions frequently occur within the months of September and October. Rice breeders at the Guangdong Academy of Agricultural Science aim to develop new rice varieties that can withstand and thrive in the cold dew winds. Apart from records of average daily temperature, they lacked precise information on the severity of the conditions which the new varieties have to endure. The lack of data severely hampers the development of the new rice varieties. A monitoring solution was therefore required to further this research.

### Key Requirements

Capacity for high number of sensors

#### dataTaker DT85

- 1 A cost effective data logger expandable to 300 channels, 600 isolated or 900 single-ended analog inputs
- 2 Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics
- 3 Modbus slave and master functionality allows connection to Modbus sensors and devices and to SCADA systems
- 4 Smart serial sensor channels capable of interfacing to RS232, RS485, RS422 and SDI-12 sensors
- 5 Rugged design and construction provides reliable operation under extreme conditions
- 6 Includes USB memory stick support for easy data and program transfer



**Cold Rice:** The Guangdong Academy of Agricultural Science hopes to breed a variety of rice which can withstand cold weather.

### dataTaker Solution

#### Equipment

dataTaker DT85 data logger  
USB memory stick

#### Sensors

Thermocouples  
Humidity sensors  
Light sensors

#### Implementation Notes

Under a joint research program, detailed weather data is being obtained from Guangdong Rice Research Institute. Dr. Tu Zeng-ping, Deputy Director of Guangdong Rice Research Institute and Dr. Chin Wong, a research worker at ANU's Research School of Biological Sciences, are working together on the project. Dr. Wong has installed a dataTaker DT85.

In the rice fields the DT85 records outputs from 20 thermocouples, 5 humidity sensors and 5 light sensors positioned in the leaf canopy. Two infrared thermometers with a 15° viewing angle integrate crop temperature. Samples from each of these sensors are taken every 15 minutes. Given the 10-million data point capacity of the DT85, there is no risk that the memory will become full. Data is retrieved manually by way of a USB memory stick.

The data which the DT85 captures is critical to the research into new varieties of rice that can withstand harsh weather.