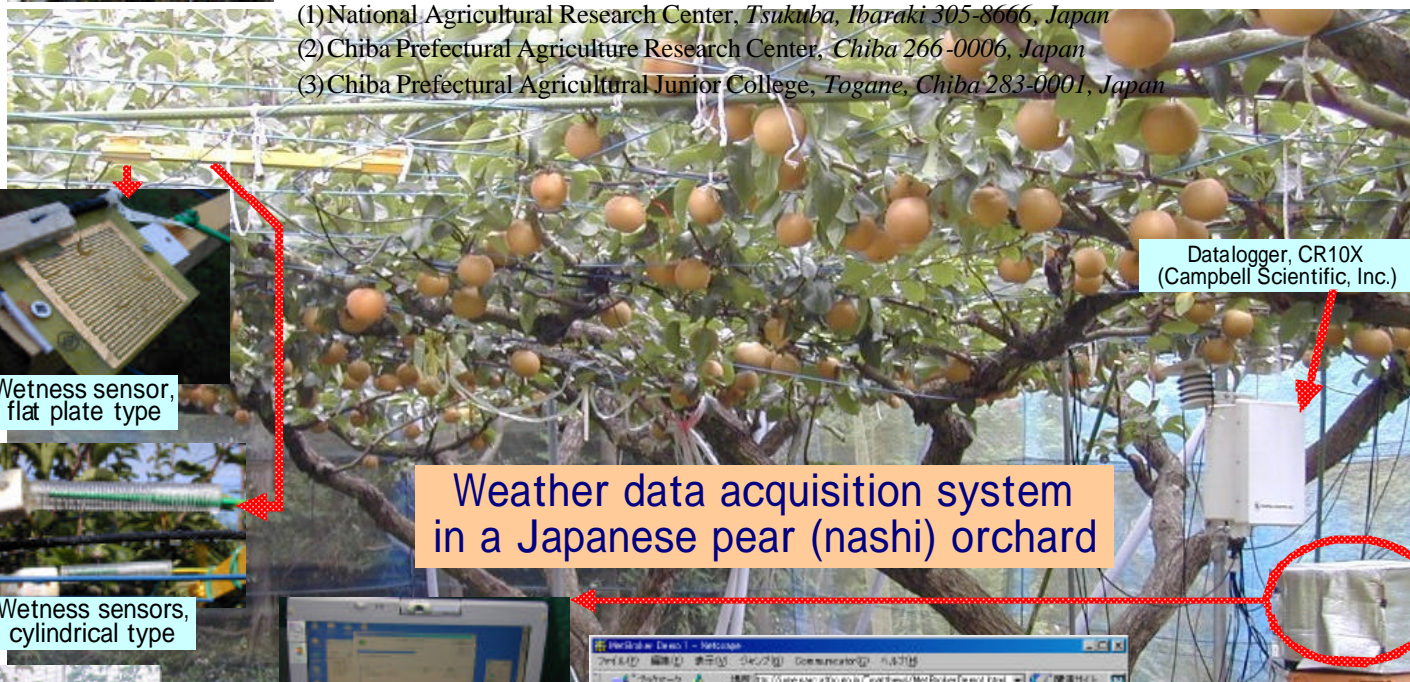


Web based IPM system for Japanese pear diseases in Japan

III. Weather data acquisition system to estimate leaf wetness duration and scab infection severity

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 Matthew LAURENSEN⁽¹⁾, Tomonari WATANABE⁽¹⁾, and Seisaku UMEMOTO⁽³⁾

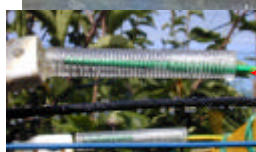
(1) National Agricultural Research Center, Tsukuba, Ibaraki 305-8666, Japan
 (2) Chiba Prefectural Agriculture Research Center, Chiba 266-0006, Japan
 (3) Chiba Prefectural Agricultural Junior College, Togane, Chiba 283-0001, Japan



Weather data acquisition system in a Japanese pear (nashi) orchard



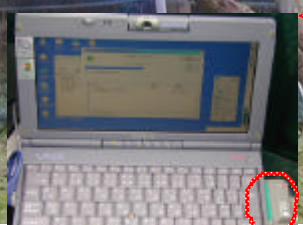
Wetness sensor, flat plate type



Wetness sensors, cylindrical type



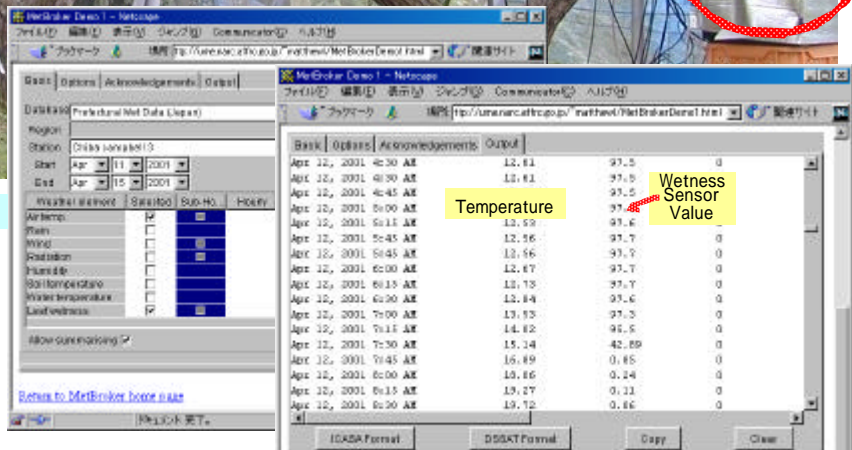
Weather sensors outside of the canopy



Laptop PC connected to the datalogger

PHS card

Datalogger, CR10X (Campbell Scientific, Inc.)



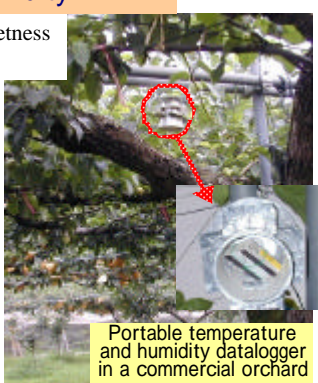
Displays of a demo applet accessing Metbroker (Weather data in our orchard)

A procedure for leaf wetness estimation from rainfall and humidity

This procedure can be used to estimate leaf wetness where wetness sensors are not available.

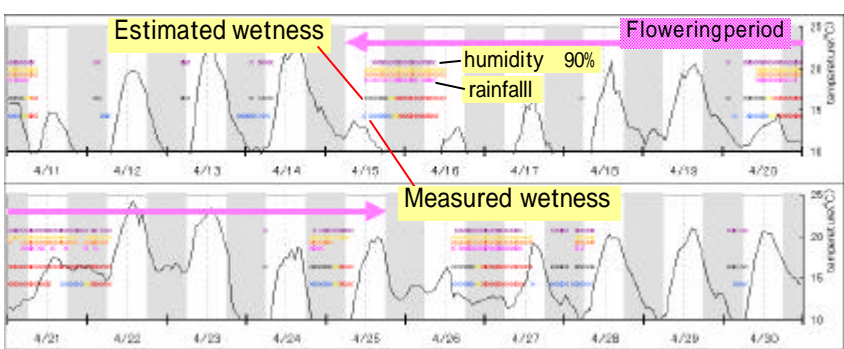
Leaf wetness estimation procedure

- Estimation factors**
1. It is wet if it has rained in the preceding 3 hours
 2. It remains wet until 6:00 if it has rained during the night (21:00 to 6:00).
- 2A It is wet any time relative humidity (RH) 90%
 2B It is wet if RH 90% only between 0:00 and 6:00.



Portable temperature and humidity datalogger in a commercial orchard

Period	Factors
Apr.1-May.15	Factor 1 or 2A
May.16-Jun.30	Factor 1 or 2B
Jul.1-	Factor 1



Estimation of nashi scab infection severity by Mills' model and Duthie's model

Mills' model
 (MacHardy and Gadoury, 1989; Umemoto, 1991)

Duthie's model
 (Duthie, 1997; Umemoto, 1991)

