

## I. Farming Diary System for farmers' decision making

(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*

Japanese pear (nashi) scab by *Venturia nashicola* is one of the most serious nashi diseases in Japan. To suppress fungal infections, fungicides are usually applied on a calendar-based spray schedule, more than 10 times during a growing season. Increasing environmental concerns make such frequent spraying unacceptable, and accurate timing of fewer fungicide applications has become more important. However, practical management data from each orchard are required to identify the best strategies to control nashi scab.

The diagram illustrates the Farming Diary System architecture, showing the flow of data and information between various components:

- Users (Farmers and Extension Staff):** Represented by a photo of people in an orchard. They interact with the system via a **Mobile PC** and a **Mobile Phone**.
- Farming Diary System (Web Server):** The central component, providing a **User Interface on WWW**. It receives **Farming Records** from users and provides **Decision support Information** back to them.
- Databases:**
  - Local Weather Database:** Provides data to the **Simulation Models** and receives **Farming Records** from the **Farming Diary System**.
  - Global Weather Database:** Provides data to the **Simulation Models**.
  - Diary Database:** Contains **Orchard Management**, **Plant Growth Status**, and **Disease Detection** data. It feeds into the **Simulation Models** and provides **Disease Control Strategies** to the **Knowledge Base**.
  - Knowledge Base for Disease Control:** Provides **Disease Control Strategies** to the **Farming Diary System**.
- Simulation Models:** Processes data from the weather and diary databases to generate **Disease Forecast Estimates**, which are then used by the **Farming Diary System**.
- Networks:** The system is connected via **INTERNET (WWW)** and **Wireless Network**.
- Additional Information:**
  - Users can receive information about effective timing of fungicide sprays in their own orchards, estimated from their diary data and weather data.**
  - Users' empirical knowledge can be distilled by analysis of their diary data.**

## Concept of Decision Support System for Nashi Disease Control

*Farming Diary System* provides a user interface to input and retrieve records of farm management and plant growth status, using Internet-enabled mobile phones or PCs. All diary data are saved to a database server, implemented using Microsoft's Web server and DBMS.

[illegible]

Display on a PC Web browser  
Management records of a nashi orchard

Nashi Knowledge Base <http://riss.narc.affrc.go.jp/nashi/disease.htm>

Nashi Disease Models <http://riss.narc.affrc.go.jp/nashi/model.htm>

K.SUGAHARA E-mail:sugak@naro.affrc.go.jp