

농장별 기상위험 조기경보를 위한 모바일 어플리케이션 설계 및 구현

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Design and Implementation of Mobile Application for Field-specific Early Warning of Agrometeorological Hazards

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Agricultural hazards management technology, which would allow individual farms to respond preemptively, has been developed. A preliminary system developed in the previous study provides precise weather forecasts by farms, notification of weather hazards by crops and delivery of response guidelines (<http://www.agmet.kr>). Although the GIS map-based alarm system has been implemented for a number of farmers and their farms, its user interface was not designed for individual users who seek information at their farms. In this study, we have developed a mobile application to provide early warnings of weather hazards up to 10 days in advance. A set of information including field-specific weather, crop growth stages and weather hazard alerts can be delivered to individual farmers through their mobile phone. This would guide users to access the map-based system using their smartphone to obtain field-specific weather information by the growth stage of cultivated crops. This would help the farmers make the better use of the existing weather-hazard GIS map-based alarm system.

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Table 1. List of Field-specific Early Warning of Agrometeorological Hazards

Plant	Freeze Risk	Low Temp. Risk	High Temp. Risk	Wind Risk	Flood Risk	Drought Risk	Wet Risk	Cold Damage	Sunshine Lack
Persimmon	•	•		•	•	•	•	•	•
Maesil	•	•		•	•	•	•	•	•
Pear	•	•	•	•	•	•	•	•	•
Peach	•	•	•	•	•	•	•	•	•
Apple	•	•	•	•	•	•	•	•	•
Kiwi	•	•		•	•	•	•	•	•
Grape	•	•	•	•	•	•	•	•	•
Potato		•	•		•	•	•	•	•
Sweet potato		•	•		•	•	•	•	•
Rice			•	•	•	•	•	•	•
Barely	•	•	•		•	•	•	•	•
Boybean		•	•	•	•	•	•	•	•
Pepper		•	•	•	•	•	•	•	•
Garlic	•	•	•		•	•	•	•	•
Radish	•	•	•		•	•	•	•	•
Cabbage		•	•		•	•	•	•	•
Tea	•	•		•		•	•	•	•

Table 2. List of Field-specific Weather Service

Data	Lead time of Forecasting	Data	Lead time of Forecasting
Daily Maximum temperature	+9 days	Daily Sunshine Duration	+2 days
Daily Minimum temperature	+9 days	Wind speed(Maximum)	+2 days
Daily Precipitation	+2 days	Wind speed(Average)	+2 days
Daily Solar radiation	+2 days	Special Weather Report	-



Fig. 1. UI of Application