JMA's Contribution to Improving Climate Risk Management
- Climate Risk Management in Drug Store Industry -

Climate Prediction Division

Japan Meteorological Agency (JMA)

Outline

- Introduction
  - Climate risk management in drug store Industry
- Relationship between sales in drug stores and temperature
  - Some examples at Tokyo
- Use of two-week forecasts in the drug store industry
  - An example
  - Implementation of action plans
  - Strategies for the future
- Activities for spreading climate risk management
- Summary

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Agriculture

Fishery

Drug Store

Apparel Industry

Energy Supply

Research in the Drug Store Industry

- The relationship between sales in drug stores and temperature as well as other weather factors

- The use of two-week forecasts for added benefit in sales promotion

(Special thanks for "Japan Association of Chain Drug Stores")

Collaboration!

Provider
JMA
Japan Meteorological Agency

JACDS
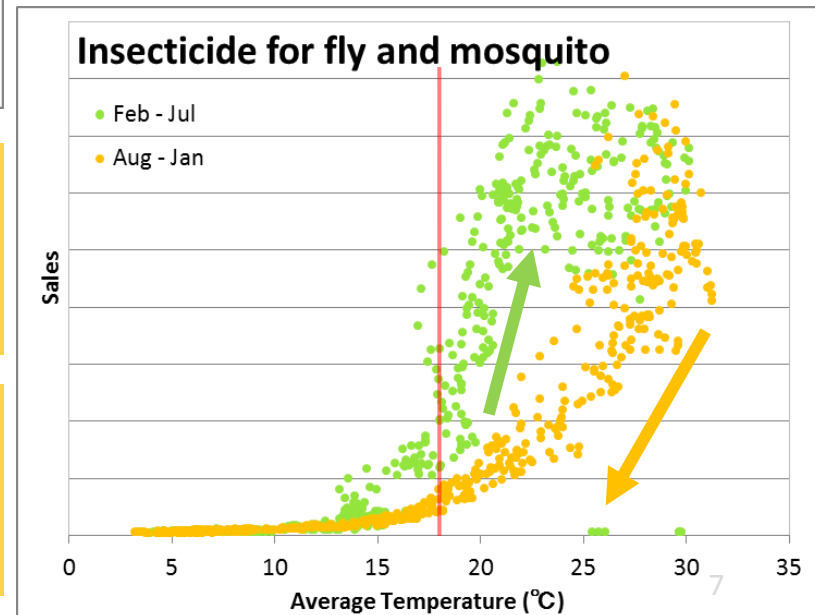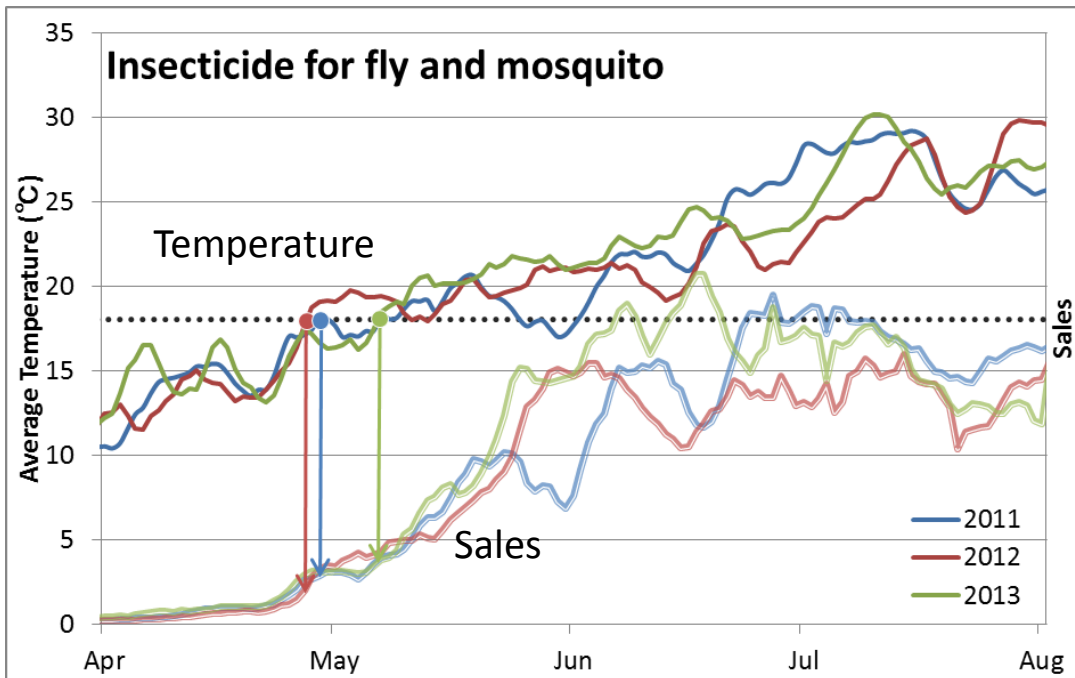JAPAN ASSOCIATION OF CHAIN DRUG STORES

Users
JACDS
Japan Association of Chain Drug Stores

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Relationship between sales and temperature
- Insecticide for fly and mosquito -

Insecticide for fly and mosquito
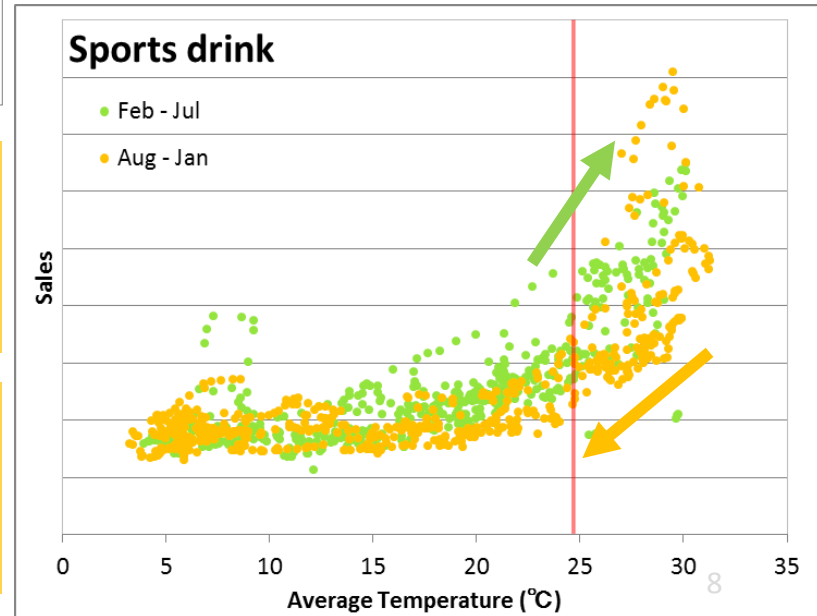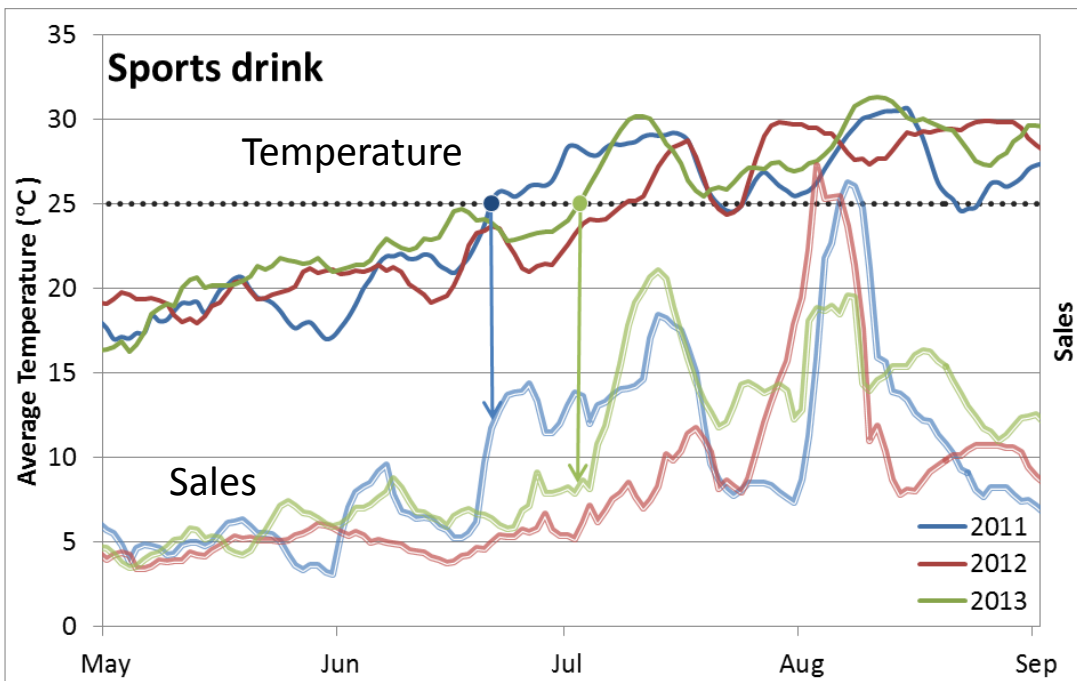
Temperature

Sales

2011
2012
2013

Phase between temperature and sales of the insecticide for fly and mosquito is similar.

It was found that the sales tend to increase rapidly around 18°C when the temperature rises.

Insecticide for fly and mosquito

- Feb - Jul
- Aug - Jan

Sales

Average Temperature (°C)
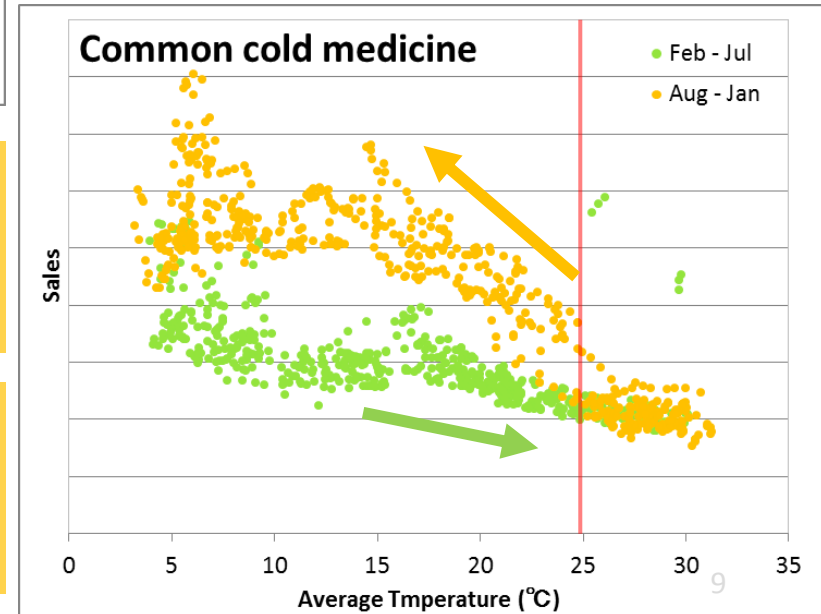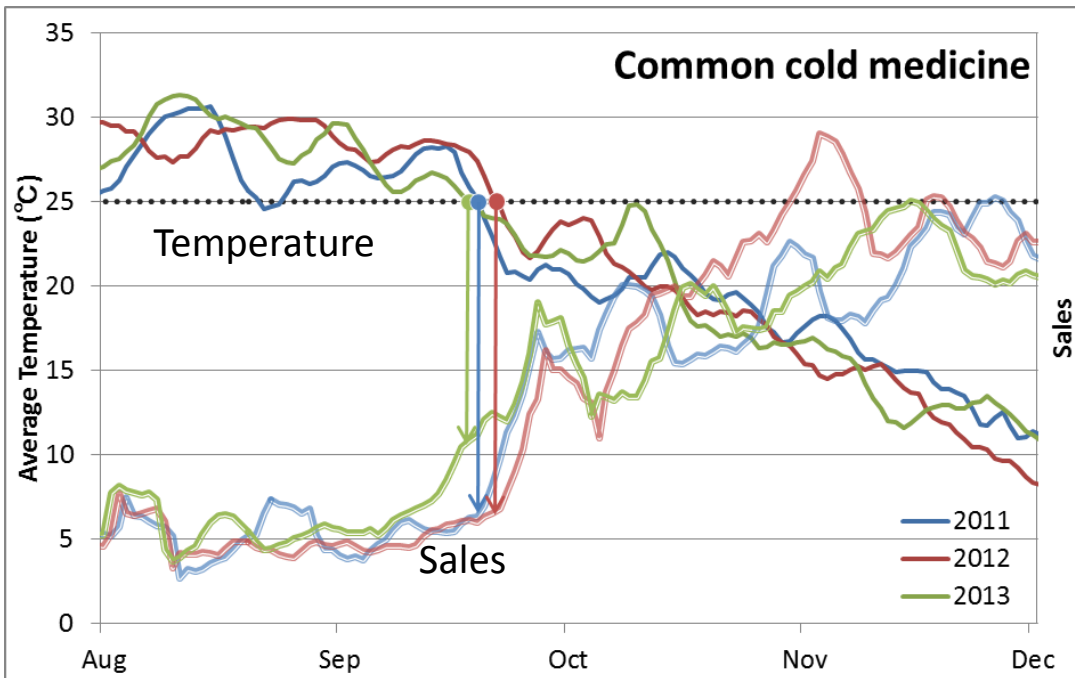
Relationship between sales and temperature
- Sports drink (Isotonic drink) -

Phase between temperature and sales of the sports drink is similar.

The sales tend to increase rapidly around 25°C when the temperature rises and the sales tend to decrease around 25°C when the temperature falls.

Relationship between sales and temperature
- Common cold medicine -

Common cold medicine

Average Temperature (°C) / Sales — Aug, Sep, Oct, Nov, Dec

Temperature

Sales

2011
2012
2013

Relationship between temperature and sales of the common cold medicine is antiphase.

The sales tend to increase rapidly around 25°C when the temperature falls.

Common cold medicine

Feb - Jul
Aug - Jan

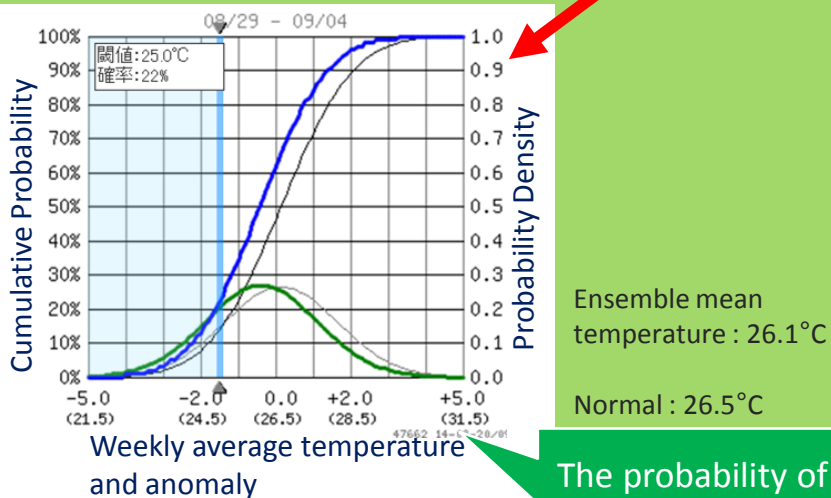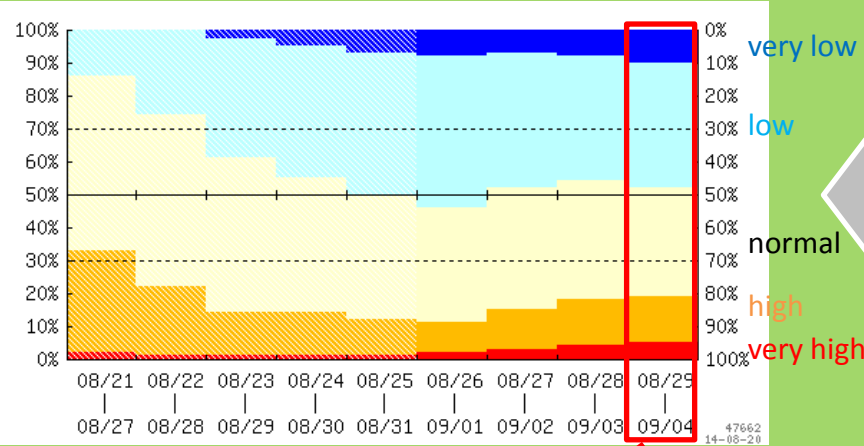Sales / Average Tmperature (°C)

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Use of two-week forecast for CRM

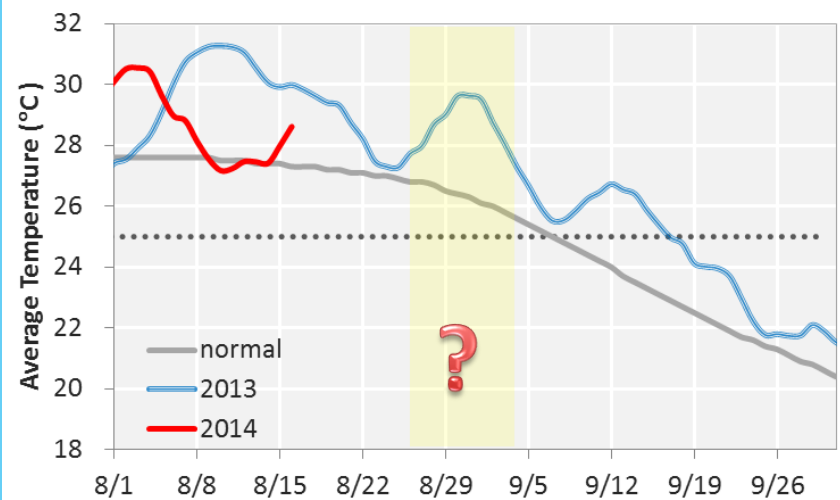A drug store manager tried to hedge weather risks by using two-week forecast.

Common cold medicine — 25°C↓

2-week forecast

Issued : Aug. 21, 2014

- very low — 0%, 10%
- low — 20%, 30%
- normal — 40%, 50%, 60%, 70%
- high — 80%, 90%
- very high — 100%

08/29 – 09/04
閾値:25.0℃
確率:22%

Weekly average temperature and anomaly

Ensemble mean temperature : 26.1°C

Normal : 26.5°C

Countermeasures

We will indicate confirmation of arranging the sales floor plan and preparing sales talks for customers.

The probability of the temperature falling below 25°C during the week starting Aug. 29 is 22%.

Target place is Tokyo

Implemented action plans for CRM

On the basis of results obtained and discussions with drug store companies, the following plans for sales promotion might be implemented:

- ○ Adjustment of goods order quantity

- ○ Deciding a proper time for increasing/decreasing the number of each items

- ○ Arranging of sales floor plans

- ○ Strengthen visual merchandising (VMD) methods such as point-of-purchase (POP) placement

- ○ Development of sales talks for customers

- We now provide 2-week forecast as average temperature, but it's not easy for the public to understand intuitionally, so forecasting for the maximum or minimum temperature would be preferable.

- As the threshold temperature differs for each area, more precise analysis should be conducted for individual regions.

- Considering errors in forecasts, we should prepare a guideline on how to use JMA's probabilistic forecasting (e.g., preparing action plans according to rank).

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Web Site

Leaflet

Seminar

Public relations field

- We have been making efforts for creating success cases of climate risk management (CRM) in some fields.

- In the drug store industry, sales are highly affected by temperature. The drug store managers can conduct some countermeasures for anomalous climatic condition using climate information.

- The drug stores should conduct more precise analysis for individual regions.

- We have to provide more useful weather information.

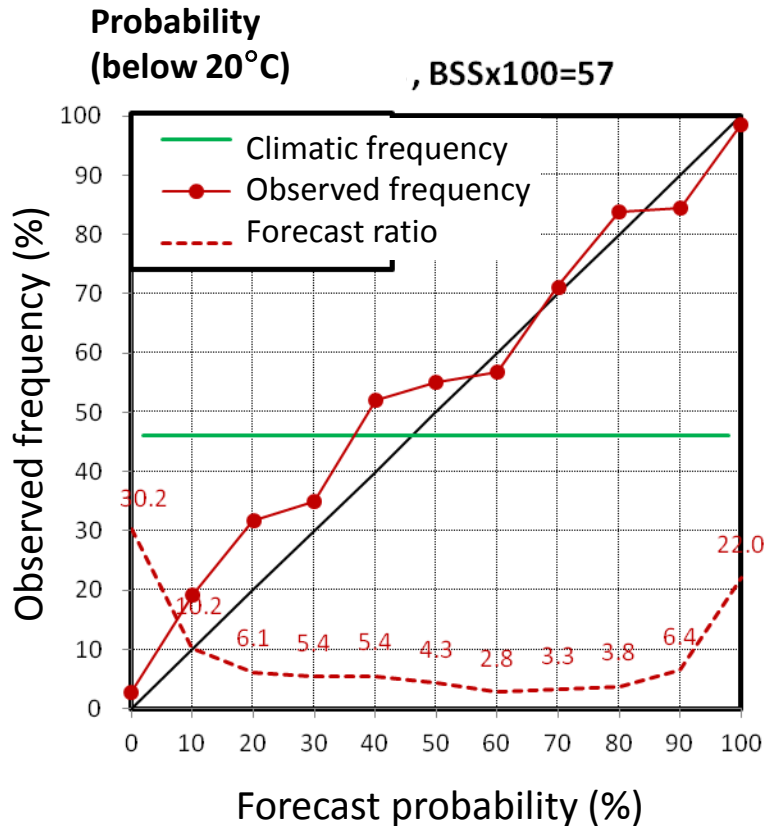- We will try to spread CRM to various fields.

Thank You !!

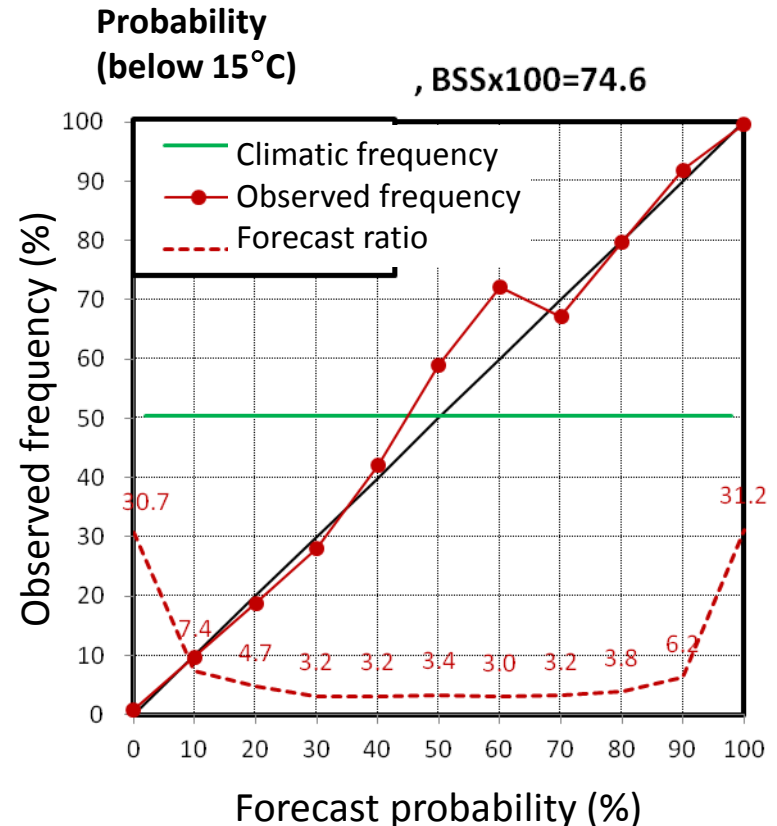**HARERUN : A mascot of JMA**

JMA web site on CRM
http://www.data.jma.go.jp/gmd/risk/en/index.html

- Reliability diagram from hindcast of past 30 years(1981 to 2010)
- 2 weeks ahead forecast of points in Kanto region(around Tokyo)
- Probability of below xx °C (7-days average temperature)

Probability (below 20°C) , BSSx100=57

・Target : forecasts of Date in September
・N=1800

Probability (below 15°C) , BSSx100=74.6

・Target : forecasts of Date in October
・N=1800

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CRM Activities for other sectors

In the Agricultural sectors, JMA is conducting new joint researches with agricultural research centers all over Japan.

We are planning to release the cultivation management systems for whole regions in Japan, to stably supply farm products.

Hokkaido
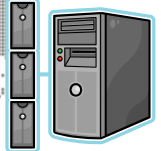Beating potatoes harmful for field condition using cold temperature

Tohoku
2-weeks ahead temperature prediction for rice crops .etc

Kanto (Central)
Making data set of weather information for agriculture .etc

Kinki-Chugoku-Shikoku
Prediction of Red mold disease of wheat

Kyushu-Okinawa
Prediction of high-temperature damage to rice grain