

MIST PROGRAM EVALUATION

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Object

To evaluate the potential use of the MIST program.

Observations and use of program

The evaluation period lasted for six weeks, instead of four, to overcome initial problems with the modem links. Once it was established which of the services were available, regular weather updates were made during the evaluation period. These were:-

- Rain radar - actual
- UK satellite
- British Isles station plot
- British Isles spot winds
- Freezing level forecast
- 1.5m Temperature contour chart
- Actual surface chart
- Forecast surface chart for T24-120

The program was straightforward to use with simple menus which enabled the user to find the required service. There were no problems with the use of the program itself, but difficulties were experienced initially with downloading the data from Bracknell via the modem link.

Use of data

The timing of the evaluation period made the program unsuitable for use in decision making. Forecasting is extremely valuable in planning spray applications and other farming activities that are dependant on suitable weather conditions. Services such as the Temperature charts, UK satellite and Forecast surface charts for example, would be most useful for these decisions.

Forecasting weather data would be useful on farm to determine the likelihood of diseases or pests and to determine optimum growing conditions of weeds or crop. For some aspects of this, past weather information might have to be considered as well as present and forecast data. The current system only allows weather from the previous few hours to be accessed. The time period of this depends on when the information was last updated. This retrospective look at the data would be useful to farmers and particularly apply to research stations such as Morley.

Improvements

The main refinement to the system would be an improvement in the updating procedure. Dialling into Bracknell each day for the latest updates was time-consuming and to many potential users also costly. As some services were not available to non-aviation users, it would be beneficial to have these flagged by the system to prevent users from attempting to download the data.

Some of the weather services were too general and unable to provide local data. For the Rain radar and Station plots, the user could define a specific area to observe the weather data. This might be useful for all services. Potential users may be large farming companies who want local as well as the more regional information. Another service which was programmed in but unavailable was the Rain radar forecast. This would have been valuable as it can be vital for farm decision making.

At present, the program is obviously biased to the aviation industry from where the system originated. The table below indicates potential uses of weather data by the agricultural industry. This summary is not exhaustive.

Table. Suggestions for on-farm use of weather information

	Past	Present	Future	Examples of use
Frost	*	*	*	Crop damage forecast Determine if crop damaged Predictions of yield
Rain	*	*	*	Soil moisture deficit (SMD) Predictions of yield
Max Temp	*	*	*	Monitoring effect Record observed effects Forecast for spray application planning
RH%	*	*		Record observed effects
Mean Temp	*			Predictions of yield
Wind		*	*	Forecast for spray application planning

The historical weather details incorporated as summaries for particular months for example, could be downloaded from Bracknell as and when required. This may provide another useful service to sit alongside the present weather and forecasting data produced by the MIST system.