

## EPIDEMIOLOGY OF RICE BLAST

### IV. Development of forecasting models for disease prevalence of rice leaf blast

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#### Summary

The influence of winter climatic variation on the regional disease prevalence of rice leaf blast for 1967-1980 was studied by the correlation and regression analysis. In most regions, disease prevalence of leaf blast was positively correlated with February temperatures except Kaohsiung. In Taipei, disease prevalence was also correlated with evaporations. Winter relative humidity was positively correlated with disease prevalence in Tainan. Duration of sunshine in February was positively correlated with disease prevalence in Taichung and Hualien; on the contrary, negative correlation was found between the disease prevalence and duration of sunshine in Kaohsiung. Amount and frequency of precipitation in January were positively correlated with disease prevalence in Kaohsiung; while in Tainan January frequency of precipitation was negatively correlated with disease prevalence.

Seven regional forecasting models were developed; and the forecasts were verified against independent survey data for 1979, 1980, 1981 and 1982. Most of the forecasting models performed satisfactorily. The partial failure of forecasts from the models was observed; this might be attributed to extrapolating outside of range of original data for predictors or the effects of some unexpected factors such as drastic change in the control method.

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