

Accuracy of Frost and Freeze Forecasts for Northwestern Michigan Wine Growers

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Freeze damage causes some of the most economic loss in the United States when compared to other weather hazards. This study is aiming to let farmers know how much confidence they can have in Numerical Weather Prediction and National Weather Service forecasts, based on the accuracy of previous predictions. Data from both National Climatic Data Center and the Michigan Automated Weather Network will be cross checked with predictions made by the RUC/RAP and NAM models to select certain dates in which a miss or bust occurred. Both Mean Average Error and BIAS(mean error) will be calculated to show correspondence between the National Weather Prediction and National Weather Service forecasts to show statistically what percentage of forecasts fell into the category of a miss or a bust. Once certain dates have been selected, the Integrated Data Viewer will be used for creating case studies for the events to try to find any patterns these events have in common. The results of this research could help the National Weather Service better prepare for freeze events in the future. This research will help the National Weather Service know how much confidence they can place in model forecasts, and in turn tell the farmers how much confidence they can place in the National Weather Service forecasts.