

Cross-validation of Results of Ordinary Kriging with Variogram Cloud Models for Validation of Prediction

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Cross-validation has been a popular means of assessing statistical estimation and prediction. The basic idea is to delete some of the data and use the remaining data to predict the deleted observations. The prediction error can be inferred from the predicted-minus-actual values. Ordinary kriging is a minimum-mean-square-error method of spatial prediction (pattern estimation) that depends on the second-order properties of the process sampling value (e.g. variogram model process). In this study, we predicted point values with variogram clouds model results of greenhouse whitefly on greenhouse cherry tomatoes. We used three variogram models(Spherical, Exponential and Gaussian) and predicted 50, 67, 75 and 80% of data with each variogram models. If the variogram model describes adequately the spatial dependencies implicit in the data set, then the predicted value should be close to the true value. Ideally, additional observations on data set could be taken to check this or, initially some of data might be set aside to validate the spatial predictor. The objective of this study is finding adequately spatial dependency variogram model of greenhouse whitefly on the greenhouse cherry tomatoes by comparing and validating the results of variogram kriging.