

Article title	Estimating seasonal fragrant rice production in Thailand using a spatial crop modelling and weather forecasting approach
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Abstract	<p>Fragrant rice is an important export commodity of Thailand and obtaining seasonal production estimates well in advance is important for marketing and stock management. Rice4cast is a software platform that has been developed to forecast rice yield several months prior to harvesting; it links a rice model with a Minimum Data Set (MDS) and Weather Research Forecast (WRF) data. The current study aimed to parameterize and evaluate the model and to demonstrate the use of the Rice4cast platform in forecasting seasonal KDML 105 rice yield and production with local data set. The study area encompassed 77 districts in Thailand, covering 0.94 of the total area of KDML 105 in the country. Minimum Data Sets for the 2013–2015 growing seasons were used for model parameterization and evaluation. The annual statistics from the Office of Agricultural Economics (OAE) were used as a reference basis and planted areas from the Geo-Informatics and Space Technology Development Agency (GISTDA) was used for production estimation. Model evaluation showed good to fairly good agreement between the predicted and reported OAE yield. Production forecasts, however, over-estimated the OAE values considerably, primarily because of the use of GISTDA planted areas that were larger than the harvested areas in the production estimates. Adjustment of the planted areas to account for damaged areas need to be explored further. Nevertheless, the results demonstrated the capability of yield predictions with the Rice4cast, making it a valuable tool for in-season estimates for fragrant rice yield and production.</p>
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