Many researchers have tried to enhance accuracy of prediction rice yield with modifying Oryza2000 model. Now Predicted error is below 5% in normal condition in Korea. Our next step is determining optimal date for prediction in national scale. To achieve this goal, Rice yield predicted every week from 18 Aug (average date of heading in Korea) to 13 Oct (average date for harvesting in Korea) in 2011 and 2012. Before prediction date, current weather date would be available. After prediction date, measured weather data of previous five years were used. Predicted rice yield were obtained using this composite weather input files that consist of data from current and previous five years. Then, the average values of five rice yield at prediction date were compared with the final yield. Variation of predicted yields decreased to nearly zero as the prediction date advances, which indicated that the optimum prediction date was 15th or 22nd of September (Fig 1). In 2011 season, predicted rice yield was accurate after mid-September. The absolute percent error (APE) between predicted and reported yield was about a 0.5% for the PDAHs after the 15th of September. In contrast, rice yield predicted in 2012 had large error, i.e., APE of 6.5%, even at the last prediction date, the 13th of October. The large error in 2012 caused by two strong typhoons had occurred in late-August. Still, Crop model cannot simulate damage caused by weather disasters such as typhoon. Without weather disaster, this study suggests mid-September could be optimal prediction date.

Fig 1. Predicted yield and error in 2011 and 2012 at prediction date after heading (PDAH)