ABSTRACT

CHUMMAC, ADRIAN, C. Institute of Environmental Science and Meteorology, College of Science, University of the Philippines, Diliman. APRIL 2018. **Weather as a Control of Planting Window for Rainfed Corn in Ifugao.**

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Weather is a factor that influences the decision of a farmer in determining the proper timing of planting. Farmers find it difficult to determine the optimum date of planting because of the year to year weather variation. The weather variation changes the optimum planting date every year hence most of the time farmers were misled to plant in the false date resulting to reduce yield. The study was conducted to determine the relationship of weather and the planting window of rainfed yellow corn in eastern Ifugao. The specific objectives were (1) to estimate the yield of corn at different planting dates for the year 1998 to 2016 based on the rainfall, temperature and solar radiation in the study area; (2) to establish the optimum planting window of rainfed corn; and, (3) to validate the derived planting window of rainfed corn. TRMM Daily Rainfall data from NASA, model derived temperature from NOAA and estimated radiation data from NASA-POWER for the year 1998-2016 were used to represent the climatology of the province because of the lack in ground observations. The yield of corn for the year 1998-2016 at different planting dates were simulated with the aid of a calibrated crop model (DSSAT-CERES-Maize model). Planting window was determined based on the simulated yield at different planting dates for the year 1998-2016. The established planting window was validated through field experimentation and by collecting yield from farmers during the dry cropping season of year 2017. Analysis of variance for single factor experiments was used in comparing the yield planted within the planting window and yield datasets planted outside the planting window. The collected yield of corn from the experimental and farmer's field showed that harvested yield with earlier planting dates (September to early November) were significantly higher as compared to the yield of corn harvested on later planting dates (later November to December). It suggest that planting earlier during dry cropping season produces the highest yield. The early planting date maximizes the limited rainfall and crops are less exposed to extreme temperature (favorable weather conditions) while the crop experiences limited rainfall and higher temperature for the late planting date.

Keywords: Weather, Plating Window, Rainfed Corn, DSSAT-CERES-Maize