POSTER 02

기후변화 영향평가를 위한 남한지역 관측 기반 고해상도 기온, 강수 전자기후도 평가 연구

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Study on Climate Map Evaluation of High-resolution Gridded Temperature and Precipitation based on Observations in South Korea for Climate Change Impact Assessment

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In the present study, the research team established an agricultural model support system for climate change impact assessment (http://agclimate.agdcm.kr) to support meteorological and climate data of various agricultural models, and based on synoptic observation data provided by the open meteorological data portal of the Korea Meteorological Administration (http://data.kma.go.kr), an climate map with a spatial resolution of 270m containing daily maximum, minimum, and average temperature and daily precipitation was produced to provide data for each station. The meteorological data generated by the system in the present study were statistically tested against presence of precipitation (presence of precipitation if ≥ 1mm and absence of precipitation if < 1mm), amount of precipitation, and daily average temperature extracted from the meteorological data provided by the Rural Development Administration Agricultural Weather Information Service (RDA-AWIS: http://weather.rda.go.kr), which were not used when generating the data in the present study.

Comparison of daily average temperature between the present study and RDA-AWIS showed high accuracy of R2 = 0.9951, while all stations tested for bias showed values very close to 1. The total cumulative precipitation showed a mean bias of 1.1574 for all stations, indicating over-estimation to some degree, but the differences were not significant. The mean accuracy of presence of precipitation for all stations was 89%, while bias was 1.3, indicating over-estimation to some degree. With respect to the accuracy of presence of precipitation by seasons, spring showed the highest accuracy, whereas summer showed the lowest accuracy. Based on statistical analysis of daily average temperature, amount of precipitation, and presence of precipitation, along with agricultural observation data, it was

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determined that the data could be used as input data for the agricultural models.

Additionally, for the agricultural model support system for climate change impact assessment, Python or R programming language-based application programming interface (API) distribution method and GIS tool-based, such as ArcGIS or QGIS, distribution method will be added, in addition to providing CSV format data, for the purpose of establishing a distribution system that enable agricultural model researchers to utilize the data more easily.

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