

2020年4~6月CWB GEPS 與NCEP GEFS CMOS日夜溫差 預報模式分析

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摘 要

近年中央氣象局致力將現有的預報產品擴展到農漁業等下游單位，並進一步發展高解析格點之預報以利農漁業單位氣象資訊上之應用。由於日夜溫差會影響水果甜度，本研究使用本局(CWB)全球系集預報系統(Global Ensemble Prediction system; GEPS)與美國國家環境預報中心(NCEP)全球系集預報系統(Global Ensemble forecast system; GEFS)兩組全球系集動力數值預報產品，經由動力統計預報 MOS (Model Output Statistics)模式，對未來1至14天日夜溫差進行預報模式建立與預報作業。為方便下游單位應用，本研究將氣象局所有可用測站的預報資訊利用簡單克利金法(Simple Kriging;以下簡稱SK法)內插至高解析格點上以提供農業單位應用

本文使用2020年4月~5月CWB GEPS與NCEP GEFS CMOS每日36~372小時預報產品進行評估，比較兩種預報指引對未來1~14天日夜溫差預報表現進行評比。

關鍵詞：MOS、DMOS、系集預報、簡單克利金法。

Analysis of CWB GEPS and NCEP GEFS CMOS Diurnal Temperature Range Forecast Models from April to JUNE 2020

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Abstract

In recent years, the Central Weather Bureau has been committed to extending the existing forecast products to downstream units such as agriculture and fishery, and further developing high-resolution grid forecasts to facilitate the application of meteorological information in agriculture and fishery units. Since the temperature difference between day and night affects the sweetness of fruits, this study uses the Global Ensemble Prediction system (GEPS) of the Bureau (CWB) and the Global Ensemble Forecast system (GEFS) of the National Center for Environmental Prediction (NCEP). Using this two sets of global ensemble dynamic numerical forecast products, through the dynamic statistical forecast MOS (Model Output Statistics) model, this study established the forecast model and forecast the diurnal temperature range in the next 1 to 14 days. In order to facilitate the application of downstream units, this study uses the simple Kriging method (Simple Kriging; hereinafter referred to as the SK method) to interpolate the forecast information from all available stations of the Central Weather Bureau to the high-resolution grid points to provide agricultural unit applications.

This study uses the daily 36-372 hour forecast products of CWB GEPS and NCEP GEFS CMOS from April to June 2020 for evaluation, and compares the two forecast guidance to evaluate the performance of diurnal temperature range forecasts for the next 1 to 14 days.