

氣候變遷下暖冬對芒果開花期的衝擊分析

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摘要

氣候變遷為影響農作物生長及產量的重要因素之一，在各種不利作物生長的天氣現象，如寒害、熱害、乾害、水災及風災等農業災害氣象，受全球氣候變遷影響而極端氣候頻率增加，對作物的衝擊影響極大。本研究將利用統計日降尺度資料來探討未來不同氣候情境下，果樹作物生長期間的氣候條件可能變化與衝擊。

本研究以芒果為例，研究範圍設為臺南楠西、玉井...等芒果專區，針對芒果開花期(每年1-4月)溫度高於38度容易造成花穗授粉不良而產生無子果的機率。研究結果顯示未來情境下，每年超過攝氏38度之累積天數在IPCC定義的高排放情境(RCP8.5)下，世紀中(2036-2065年)及世紀末(2071-2100年)，平均30年累積增加日數分別為1.01天與7.85天。

關鍵字:氣候變遷、芒果、日統計降尺度

Analysis on the Impact of Warm Winter on Mango Flowering Period under Climate Change

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Abstract

Climate change is one of the primary determining factors on the growth and yield of a crop. Extreme weather phenomena that are unfavorable to crop growth, such as cold, heat, dry, floods and wind disasters. These events are occurred frequently that made a great impact on the crop in climate change. This study will use daily dataset that statistical downscaling from CMIP5 to explore changes and impacts during the growing season of fruit crops under different climatic scenarios.

In this study, mango is chosen as the topic. The research area is the mango Agricultural special area in Nanxi and Yujing District, Tainan over southwest of Taiwan. During the flowering period (January - April each year), if the temperature is higher than 38 degrees Celsius, It is easy to pollinate flower ears and produce fruitless fruits due to poor fruiting. The research results show the cumulative number of days exceeding 38 degrees Celsius under the simulation of high emission scenario (RCP8.5). In the middle of the century (2036-2065) and the end of the century (2071-2100), the average cumulative increase in 30 years will increase 1.01 days and 7.85 days, respectively.

Keywords: Climate Change, Mango, Daily Statistical Downscaling