小集水區於旱季期間建構土堤以儲留地表逕流後之微氣象變化初步探討

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摘　要　臺灣西南部麓山區域小集水區內常見莿竹之優勢植被，當考量涵養水資源，順應地形在集水區內設置土堤，以儲留地表逕流供旱季期間地表植被生長所需，勢將造成其間微氣候變化，故本研究擇定國立屏東科技大學水土保持戶外教室西南側有一面積為 3.3 ha 且具莿竹優勢植被之集水區為試驗地點，於集水區谷線中游束縮區設置一頂寬 0.8 m 土堤，以營造寬度、長度及深度分別為 6m、8m 及 2m 之儲留地表逕流空間，並於 2013 年 10 月至 2014 年 11 月針對氣溫、相對濕度、風速、風向及全天日射量進行觀測，藉以初步探討其間於旱季之微氣象變化。初步得知莿竹林集水區內建構土堤於旱季期間儲留地表逕流後，周遭氣溫、露點溫度、相對濕度及全天日射量平均值分別為：23.3℃、19.6℃、82.7%及 2.7 MJ m-2，相較於林外者，依序分別為：氣溫偏低 1.9℃、露點溫度偏低 0.2℃、相對濕度約高出 5-10%、全天日射量約為 0.4 倍。

關鍵詞：微氣象、集水區、土堤、莿竹林。

The Primarily Study on Micro-meteorological Variation after Creating Levee to Storage Runoff during Droughty Season in a Small Watershed

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ABSTRACT The thorny bamboo is a superior species in small watershed of piedmont area of southwestern Taiwan. To conserve water resources was beneficial to the demand of canopy growth, and to create levee in watershed by the terrain could provided to storage runoff during droughty season, then it had to cause the micro-meteorological variation. The experimental watershed with area of 3.33 ha, which was located in the comprehensive district of soil and water conservation of National Pingtung University of Science and Technology, Taiwan. The 0.8 m top width of levee had constructed in contraction zone nearby midstream of watershed, and could created the space of storage runoff with width, length and height in 6m, 8m and 2m. The purpose of this study was primarily aimed at the micro-meteorological variation after creating levee to storage runoff in a small watershed. All the meteorological elements included as: air temperature, relative humidity, wind speed, wind direction and global solar radiation had measured by a meteorological station from October to November, 2013. The result had shown the storage runoff could affect the meteorological elements of air temperature, dew point temperature, relative humidity and global solar radiation, and the average were 21.6℃, 19.6℃, 81.6% and 2.7 MJ m-2, and the difference between inner plantation and outside- were lower than 1.9℃ and 0.2℃, higher than 5-10%, about 0.4 times, respectively.

Key Words : Micro-meteorology, watershed, levee, thorny bamboo plantation.

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