

不同灌溉管理之木瓜園生長差異觀察

Observation on Growth Differences of Papaya Orchards under Different Irrigation Water Management

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摘 要

木瓜 (papaya) 為番木瓜科，台灣主要栽種具有公花、母花和經濟價值較高的兩性株(雌雄同株) 的台農二號，全年均有木瓜生產，主要盛產期為 10~11 月，是國內重要的果樹之一，其生長管理是果農重視的議題。本研究於南投市 4 處和名間鄉 1 處共五處網室木瓜園進行田間觀察，由於五區農民對於木瓜園的水分管理不同，木瓜樹的生長亦呈現明顯的差異。田區 1 種植初期受限於機具設備限制而鮮少澆灌，使田區呈現乾旱，在缺水和缺肥的情況下，木瓜樹生長相當緩慢，而為了促進灌溉水能集中往木瓜植栽移動，田區 1 的園主曾將木瓜苗周邊土壤填高，促使水分集中流入木瓜根圈中，然而試驗結果顯示，該作法雖然使土壤水分增加，但是後續高頻率的午後陣雨，反而讓根系長時間泡水厭氧，導致 25% 的木瓜死亡。田區 5 田間地勢較為低窪，在酷熱的七、八月園主將木瓜園溝渠充滿灌溉水，降低田區溫度和乾旱問題，然而在七月、八月暴雨且田區排水不佳的情況下，木瓜樹死亡率達 15%。田區 2~4 的水分管理用量相對均勻和穩定，生長相對正常良好。試驗觀測結果顯示，缺水缺肥的狀態下，生長緩慢但不致死亡，而土壤水分過多在通氣不良的情況下，植株根系受損易腐敗死亡，因此建議在豐水期間，配合氣象預報資訊決策是否灌溉，讓土壤維持乾溼交替優於長期乾旱或潮濕，是較合適的水分管理概念。

關鍵詞：木瓜，水分管理，灌溉。

Abstract

Papaya is one of the important fruit trees in our country, and its growth management is a concern of fruit farmers. Taiwan mainly grows male flowers, female flowers and hermaphrodites, which are of high economic value. Papaya is produced all year round, and the main production period is from October to November. Field observations were made in 5 papaya orchards in this study area, 4 of which are located in Nantou City and 1 in Mingjian

Township. Farmers in the five districts have different water management of papaya orchards, so the growth of papaya trees also shows obvious differences. In the early stage of planting, due to the lack of irrigation equipment, the No. 1 field was seldom irrigated, which made the field dry. In the absence of water and fertilizer, papaya grows very slowly. To increase the amount of irrigation water for papaya trees, gardeners in Field No. 1 used to fill in soil around papaya seedlings to increase the amount of water entering the papaya root system. However, test results showed that while this method increased soil moisture, the subsequent high-frequency afternoon showers soaked the roots. Prolonged immersion in anaerobic water can cause 25% of papayas to die. Field 5 Field terrain is relatively low. In the hot July and August, the gardener filled the ditches of the papaya orchard with irrigation water to reduce the temperature and drought in the fields. But in July and August, due to heavy rains and poor field drainage, the death rate of papaya trees was as high as 15%. The water resources management amount in the study area is No. 2 to No. 4, which are relatively uniform and stable, and the growth is relatively normal and good. The experimental observations show that under the condition of water and fertilizer shortage, growth is slow but not death. In the case of excessive soil moisture and poor ventilation, the root system of the plant is damaged, and it is easy to rot and die. Therefore, it is recommended to cooperate with the weather forecast information during the flood season. Watering or not, keeping the soil alternately dry or wet is better than prolonged drought or wetness, which is a more appropriate water management philosophy.

Keywords: papaya, water management, irrigation