

名間鄉茶園田間管理與低產問題研究

Research on Field Management and Low Yield of Tea Garden in Mingjian Township

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摘 要

茶是台灣重要的經濟作物，名間鄉收穫面積和總產量分別佔南投縣的 33.6% 和 46.2%，是台灣最主要的茶產區。根據田間訪查經驗，茶農們普遍對茶樹近年來有明顯減產的問題感到困擾，因此本研究透過四年來農民提供的茶菁採收資訊、農民田間管理策略訪談和茶樹生長狀態 UAV 影像拍攝記錄資訊來探討和比較茶園低產的問題，期望可以根據研究成果，提出綜合觀測指標，協助茶農們檢視茶園狀態和改善會導致低產的問題。統計分析茶菁採收重量顯示，四季春茶菁機器採收的長時間茶菁重量平均值低於 450 台斤/分地可歸納為低產。低產主要發生在氮營養施肥量相對少、天氣冷、生長緩慢的冬季；低產茶樹生長狀態為枝條和芽點數量少、枝條潮濕不通風，導致長青苔或髮狀病、葉片有明顯的氮養分缺乏或病害，以及茶樹樹頭被大量有機物覆蓋且維持長時間潮溼，導致根系缺氧壞死，進而整株死亡。在管理方面，錯誤的灌溉用水管理和肥料施用，也會導致低產。研究整合名間茶園的觀測成果，辦理研習會徵求有意願配合低產問題改良試驗的茶農，並根據茶園健康診斷進行灌溉和施肥的改良作業，而經過春茶和夏茶的茶菁重量統計，茶農的收成相較往年提高將近 30%，顯示透過良好的田間管理，可以有效地克服茶園低產問題。

關鍵詞：茶樹，低產，氮營養，UAV。

Abstract

Tea is an important economic crop in Taiwan. The harvested area and total output of Mingjian Township account for 33.6% and 46.2% of Nantou County, respectively. It is the most important tea producing area in Taiwan. According to the field investigation experience, the production of tea trees has decreased significantly in recent years, and tea farmers are generally troubled. Therefore, this study utilized tea harvest information provided by farmers over the past four years, interviews with farmers on field management strategies, and drone

video recordings of tea plant growth conditions. It is hoped that based on the research results, comprehensive observation indicators will be proposed to help tea farmers understand the status of tea gardens and improve the problems that lead to low yields. Statistical analysis of the harvest weight of tea greens shows that the average weight of long-term tea greens harvested by Sijichun tea green machine is less than 450 catties/min, which can be classified as low yield. Low yield mainly occurs in winter when there is less nitrogen fertilization, the weather is cold, and the growth is slow; the growth state of low-yield tea trees is that there are few branches and buds, the branches are wet and not ventilated, which leads to moss or disease, and the leaves contain obvious nitrogen nutrients. Oxygen deficiency or disease, the head of the tea tree is covered with a large amount of organic matter and kept moist for a long time, resulting in hypoxia and necrosis of the root system and the death of the whole plant. In terms of management, wrong irrigation water management and fertilization can also lead to low yields. The research integrates the observation results of Mingjian Tea Garden, organizes a seminar to solicit tea farmers who are willing to cooperate with the low-yield problem improvement test, and conducts irrigation and fertilization improvement operations according to the health diagnosis of the tea garden. The production of tea gardens has increased by nearly 30% compared with previous years, which shows that through good field management, the problem of low production of tea gardens can be effectively overcome.

Keywords: tea tree, low yield, nitrogen nutrition, UAV