Effects of Supplemental Light on the Growth and Yield of ‘Yubi’ Tomato during Winter in Yilan District [1]

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Abstract

Tomato production in winter is often affected by insufficient light in Yilan district, resulting in problems such as poor plant growth and yield. This study aims to explore the impact of using LED supplemental light on large type tomato plant growth and fruit yield in simple facility tomato cultivation in winter. The results showed that supplementary light treatment accelerated plant growth, increased the number of leaves, leaf area and total fresh weight of plant leaves, and advanced flowering and fruit harvesting time. SLB2 (4 blue light tubes) supplementary light treatment increased the weight of single fruit effectively. SLR2 (4 red light tubes) supplementary light treatment increased the number of harvested fruits per plant, and four supplementary light treatments increased the yields significantly. This study showed that LED supplemental light treatment had positive benefits on plant growth, fruit yield and quality in tomato cultivation, but further research should be studied for industrial application.

Keywords: tomato, winter cultivation, supplemental light treatment, LED.

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