

**EFFECT OF COLOURED SHADE NETTING ON CROPS
PERFORMANCE UNDER TROPICAL GREENHOUSE**

by

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APPROVAL AND DECLARATION

The Final Year (FYP) report titled Effect of Coloured Shade Netting on Crops Performance under Tropical Greenhouse was prepared and submitted by Sukeertha binti Rawi Raveendran (Matrix no: 131192620) and has been found satisfactory in terms of scope, quality and presentation as partial fulfilment of the requirement for the Bachelor of Engineering (Biosystems Engineering) in University Malaysia Perlis (UniMAP).

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KESAN WARNA JARING TANAMAN TERHADAP TUMBESARAN POKOK DI DALAM RUMAH HIJAU TROPICAL

ABSTRAK

Satu kajian telah dijalankan di dalam rumah hijau yang terletak di Institut Agroteknologi Lestari, INSAT. Kajian ini adalah bertujuan untuk menyiasat kesan warna jaring teduhan terhadap tumbesaran pokok di dalam rumah hijau tropikal. Tanaman telah disemai di bawah empat jaring teduhan yang berwarna kuning, hitam, merah dan biru dengan 70% dan 50% faktor teduhan bersama-sama dengan kawalan (tanpa jaring). Hasil kajian menunjukkan bahawa terdapat perbezaan dalam prestasi tanaman di bawah setiap jaring teduhan. Jaring berwarna Merah, biru dan kuning telah dihasilkan oleh syarikat Wize Wire Mesh, China. Sementara itu, bagi jaring berwarna hitam, ia telah dibeli dari peruncit tempatan di Perlis. Oleh sebab itu, terdapat beberapa perbezaan antara struktur jaring yang berwarna merah, biru, kuning dengan hitam. Antara perbezaannya adalah, jaring teduhan merah, biru dan kuning adalah lebih tebal dan mempunyai lebih banyak jumlah lubang bagi setiap inci persegi. Tambahan pula, dibandingkan dengan kawalan (tiada jaring) keamatan cahaya didapati lebih rendah di bawah jaring teduhan berwarna. Walaubagaimanapun, bilangan tumbuhan yang hidup di bawah jaring teduhan berwarna adalah lebih tinggi berbanding dengan kawalan. Lebar, tinggi dan juga kandungan klorofil tumbuhan didapati lebih tinggi dibawah jaring teduhan berwarna dibandingkan dengan kawalan. Sebaliknya, bilangan daun dicatatkan tertinggi di bawah kawalan. Akhir sekali, hasil terbanyak adalah dibawah jaring teduhan berwarna merah serta biru diikuti oleh hitam, kuning dan kawalan.

ABSTRACT

A study was carried out at Institute of Sustainable Agrotechnology, INSAT greenhouse for investigating the effects of coloured shade netting on crops performance in terms of its yield, number of leaves, width, height and chlorophyll content. In addition, the shading net properties such as thickness and mesh number was also measured along with the light intensity under each colour of the nets. Four different colour of shading nets were used namely yellow, red, blue and black with shading factor of 70% and 50% together with control (without shade nets). Red, blue and yellow shading net were acquired from Wize Wire Mesh Company, China. Meanwhile, black shading net was purchased from local retailer in Perlis. Results showed that there were differences in crop performance under each coloured shading net. There were differences in the properties of the shading net. Red, blue and yellow shading nets were thicker and have more mesh number per inch squared compared to black shading net. Furthermore, the light intensity was found to be lower under coloured shade nets as compared to the corresponding value under control. Number of yields, plants width, height and chlorophyll content were found to be higher under the coloured shade net as compared to corresponding value in the control. However, number of leaves was found to be more under control. Ultimately, yield was found highest under red as well as blue followed by black, yellow and control.

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LIST OF ABBREVIATIONS

FIR	Far Infrared Rays
IR	Infrared Rays
PE	Polyethylene
EVA	Ethylene Vinyl Acetate
Chl	Chlorophyll
ml	Millilitre
l	Litre
cm	Centimetre

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