

EFFECTS OF DIFFERENT COLOUR SHADE NETS ON GROWTH AND DEVELOPMENT OF SELECTED HORTICULTURAL CROP SPECIES

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The quality, quantity, periodicity and direction of light are important factors as signals to optimize the growth and development of horticultural crops. For maintaining quantitative and qualitative characteristics of fruits, vegetables, flowers and foliage plants, it is important to manipulate the quantity, quality, duration and direction of light which is coming towards crops. Shade nets reduce both light intensity and effective heat during the daytime while changing the spectrum. Moreover, shade nets can scatter radiation. Use of colour shade nets is not very popular in Sri Lanka as compared to black shade nets. Colour shade nets can increase the light scattering by 50 % or more and influence plant growth and development. It is important to find the effects of different colour shade nets on growth and development of economically valued plants.

In the present study, two ornamental plant species; *Cordyline fruticosa* var. 'Purple compacta' and *Chlorophytum tuberosum*, and two vegetable species; *Lycopersicon esculentum* and *Brassica oleracea* were grown under five colour shade nets as Aluminet, White, Silver, Red and Black colour with a control (without any shade net). Only the nursery period was evaluated for vegetable species. For ornamental plant species, quantitative measurements such as plant height, number of leaves and size of leaves were measured at fortnightly intervals. For vegetable plant species, those measurements were taken at the end of the nursery period. Dry weight gain and chlorophyll content were measured at the end of the experimental period for all species. For ornamental plants, colour of leaves was determined at the end of the experiment. There was a significant ($p < 0.05$) increase in plant height, dry weight and colour development in leaves of *Cordyline fruticosa* var. 'Purple compacta' and *Chlorophytum tuberosum* under red colour shade net followed by aluminet. For *Lycopersicon esculentum* and *Brassica oleracea*, significant ($p < 0.05$) plant height, leaf size, chlorophyll content and dry weight gains were observed under white colour shade net and silver shade net, respectively. Thus, the results of the present study reveal that the plant performance under varying light spectra is species dependant.