Effect of Different Color Shade Nets on Growth and Development of Acclimatized Tissue Cultured Anthurium Plants

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Floriculture is divided into four groups depending on the production. The usage of floriculture products varies with the countries. Anthurium is a popular genus that belongs to the family Araceae. Anthurium plants used as a cut flower as well as an ornamental pot plant and require shady, humid conditions for the growth. In tropical climate, anthurium plants are unable to grow under natural light conditions without shade. Shade nets are widely used to protect crops from wind, rain, hail and excessive radiation. The photo selective netting concept was studied in anthurium plants using three different coloured shade nets. Black, red and aluminet shade nets and expose to full sunlight (control) were used as the treatments. Plant growth parameters, chlorophyll fluorescence data, and light parameters were measured. Light intensity, photosynthetically active radiation, spectrum irradiance was measured under each shade net. Highest spectrum irradiance was measured outside and then followed by black shade net, aluminet and red net. As plant growth parameters, plant height, number of newly emerged leaves, shoot and root dry weight and chlorophyll content were measured. Major parameters derived from OJIP analysis, including Performance Index (PI), Photochemical efficiency (FV/FM), Effective antenna size (ABS/RC), Electron transport per reaction centre (ET0/RC), Electron transport efficiency (ET/TR), Heat dissipation per reaction Centre (DI0/RC), Trapping per reaction centre (TR0/RC) were recorded. Plant survival rate was measured at each shade nets and control environment. Highest plant survival rate was observed in black shade net. Lowest plant survival rate was observed in aluminet shade net. Therefore, black color shade net can be recommended for a better growth and development of anthurium plants.

Key words: Anthurium, Chlorophyll fluorescence, Colored shade nets, Floriculture

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