The Influence of Shade Treatment on Bud Break and Spear Attributes of Five Asparagus Cultivars

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Asparagus grown in the rain-shelter house encounters high light intensity during summer season in Korea. This study aimed to investigate the influence of shade treatment on bud break, spear number and weight of five asparagus cultivars. Seeds of five asparagus cultivars (Apollo, Atlas, Grande, UC157 and Walker deluxe) were germinated and two months old seedlings were transplanted to growing pots (22 cm diameter × 25 cm high) containing growing media for four months. The shade treatments were as follows: control and shade treatment. Control plants were received natural sunlight directly while shade treatment was applied 30% shade covered crystal polyethylene cloth cover. The light intensity in control and shade sections of greenhouse was monitored every day at a height of 1 m from ground using a SpectroPen-SP-110 spectrometer (Photon systems Instruments, Brno, Czech Republic). In winter season, dead asparagus ferns were removed and the pots were placed on the ground. Ten-month old plants were used to investigate the effect of shade treatment on bud break and spear attributes of five asparagus cultivars. The number of days to bud break of the first bud per plant was recorded. Number of bud break, spear diameter, spear number (which was 20 cm length) and spear weight of asparagus were measured. The results showed that shade treatment had no significant on the number of days to bud break. Spear diameter was unaffected by shade treatment. Number of spear and spear weight of shade-treated plants were significantly higher than the untreated controls. UC157 decreased mean days to bud break and had a significantly higher number of bud break, number of spear and spear weight than other cultivars. These results will be provided to enhance asparagus yield in Korea weather condition.

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