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We carried out to confirm analysis of photosynthetic and fluorescence reaction on the leaves of strawberry during winter season as low sunlight condition. The strawberry samples were planted at high bench bed system of greenhouse on the October 13. Samples were cultivated by drip irrigation and were treated four different shading levels such as 0, 2, 4, and 6 hours on all days during from December 23 to March 30 of the following year. Photosynthesis of strawberry leaves was decreased to the high degree of shading. However, chlorophyll content of strawberry leaves was positively increased to the high degree of shading treatments. Estimated maximum quantum efficiency yield of PSII photochemistry (Fv/Fm) of Kautsky curve according to 0, 2, 4, and 6 shading treatments was pointed out to the 0.79, 0.78, 0.77, and 0.74. In the fluorescence quenching of strawberry chloroplast, the high the level of shading showed higher values of fluorescence quenching curve. We indicated that photochemical reaction of strawberry leaves affected by low sunlight condition such as shading caused by the structure of buildings or bridges.

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P-1-①

Effect of Total Leaf Numbers on the Growth and Fruit Quality in Muskmelon Plants Showing Leaf Yellowing Symptoms

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This study was conducted to evaluate the influence of total leaf numbers on the growth, net formation of fruits, and occurrence of leaf yellowing symptoms (LYS) in muskmelon plants. The growth and development of LYS on muskmelon plants having 25, 30, and 35 fully expanded leaves on the vine were compared to those of the control plant having 20 leaves. Plant height, leaf area, root fresh weight, and root dry weight increased as the number of leaves increased. Plants with 35 leaves showed the greatest plant growth. Net photosynthetic rate was positively related to increasing leaf numbers with plants having over 25 leaves showing the greatest photosynthetic rates. On the other hand, there were no significant differences in chlorophyll content and root activity among treatments with different leaf numbers. The ratio of LYS infection was also greater in plants having 25-30 leaves, than in those having leaf numbers. Plants with different leaf numbers and LYS infection showed a variation in fruit quality, although LYS did not significantly affect fruit quality except net index. The plants having 20 leaves that showed LYS developed fruits that had significantly smaller flesh (mesocarp) thickness than, the plants having greater

numbers of leaves. The higher sugar contents of fruits were found in the plants having 35 leaves whether they showed LYS (12.1°Bx) or not (12.5°Bx). Therefore, leaving more than 25 healthy leaves per plant was recommended for minimizing damage from LYS.

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P-1-①

여주 삼목방법과 온도조건이 발근에 미치는 영향

The Effect of Cutting Methods and Temperature on the Rooting Percentage of Bitter Melon

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여주(쓴오이)는 주로 미숙과를 식용으로 하는 1년생 박과채소로 momordecichin과 charantin 등 강력한 혈당강하 작용을 하는 기능성 성분이 풍부한 것으로 알려지면서 최근 소비가 급격히 증가하여 재배 면적 및 그 지역이 급속히 확대되고 있다. 그러나 여주 종자는 전량 수입하고 있으며, 고가(600-800원/립)에 거래되고 있어 농가의 종자 구입 부담이 크다. 따라서 본 실험은 농가의 종자비 부담을 줄이기 위하여 줄기 유인 관리 시 불필요한 측지를 제거하는데, 이 측지를 활용하여 최적의 삼목방법과 온도조건을 구명하기 위하여 수행하였다. 공시품종은 'NA'와 'DR' 등 시판 2품종이었고, 절단위치를 생장점에서 잎 3매째 발생 마디를 절단한 것과 잎 3매와 4매 발생 마디의 중간 지점을 절단한 처리를 하였다. 처리 온도는 생장상을 활용하여 18, 23, 28, 35°C의 4개 처리로 하였고 16시간 조명을 하였으며, 상대습도는 60-70%로 유지하였다. 삼목 후 10일에 10주씩 발근율과 발근수를 조사하였다. 그 결과, 발근율은 28°C에서 100%로 삼목 부위에서 모두 새 뿌리가 발생하였고, 23°C에서는 55%, 35°C 조건에서는 7% 순이었으며 18°C 조건에서는 전혀 발근되지 않았다. 개체당 발근수는 'DR' 품종의 28°C, 마디 중간지점 절단 처리에서 5.3개로 가장 많이 발생하였고, 마디부위를 절단한 처리에서는 2.7개였다. 'NA'의 경우 각각 2.1과 1.4개로 품종 간에 약간의 차이가 있는 것으로 나타났다. 온도 23°C 조건에서는 28°C 처리에 비해서 발근수가 적었고, 35°C 처리조건에서도 발근수가 적었다. 따라서 여주의 최적의 삼목 환경조건은 온도는 28°C 이고, 절단위치는 마디와 마디 중간지점이 바람직할 것으로 사료된다.

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P-1-①

재식밀도가 삼채의 생육과 수량에 미치는 영향

Effect of Plant Density on Growth and Yield of Allium Hookeri

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