

## 온도구배챔버에서 온도 상승이 콩의 수량 및 종실 품질에 미치는 영향

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### The Effects of Increased Temperature on Soybean [*Glycine max*(L.) Merrill] Yield and Seed Quality in Temperature Gradient Chamber

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Because global warming is expected to continue, it would be necessary to evaluate the response of various soybean cultivars to increasing temperature. The objective of study was to determine the effect of increasing temperature on seed yield and quality of soybean [*Glycine max*(L.) Merrill] using a Temperature Gradient Chamber(TGC). This study was conducted using three soybean cultivars, Daewon(DW), Daepung(DP) and Pungsannamul(PSN), grown in Temperature Gradient Chamber(TGC) at National Institute of Crop Science in 2017 and 2018. Four temperature treatments, Ta+1, Ta+2, Ta+3, Ta+4(Ambient temperature+1~4°C), were established by dividing the rows along which the Temperature Gradient Chamber was created. In all cultivars, the high temperature for the beginning flower(R1) to beginning pod(R3) period was ranged from 30.4 to 34.5°C and from 33.5 to 37.5°C in 2017 and 2018 respectively. The number of pod, 100-seed weight and seed yield for DW increased at elevated temperature but, seed yield components of PSN were reduced by increased temperature in 2017. In 2018, seed yield was highest at Ta+3°C in all cultivars and seed yield components were reduced in 2018 compared to 2017. This results might be related to the high temperature in 2018 during R1-R3, which was higher than 2017. In addition, seed quality such as seed size and protein, oil contents were significantly correlated with increased temperature. The oil content of DW and DP was highest at Ta+4, but that of PSN was decreased at Ta+4 in 2017 and 2018.

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