

PA-128

Effect of Plant Growth Regulator Treatment on Isoflavones in Soybean

Jinhee Seo^{1*}, Seoyeon Hong¹, Hyerang Park¹, Jaesung Park¹, Okjae Won¹, Eunji Seo¹, Wonyoung Han¹, Kido Park¹

¹Department of Southern Area Crop Science, National Institute of Crop Science, Rural Development Administration, Miryang, 50424, Republic of Korea

[Abstract]

The soybean (*Glycine max*(L.) Merrill), an important food crop in the world, is popular because of its high quality protein and oil content. Soybeans as a food have long been known for their beneficial effects on health and are well-recognized globally. Isoflavones, significant soybean secondary metabolic products, may be crucial in avoiding some cancers and lowering the risk of cardiovascular disorders. This study investigates the correlation between plant growth regulator and the effect on the isoflavone levels in soybean leaves. The study was carried out in the green-house of the southern crop department in miryang. Soybeans(Seonpung) were cultivated in 1/2000 of the Wagner pot. Ethephon(500, 1000, 2000 ppm) and ABA(100, 200, 400 ppm) were used as plant growth regulators, and they were each treated on R2, R5, and R7 stage. After treatment, leaves were sampled three times at intervals of 5 days, and the content of 6 isoflavones and coumestrol was analyzed. Soybean isoflavones were analyzed using Ultra Performance Liquid Chromatography (Acquity UPLC H-Class system, Waters). The isoflavones content showed an overall highly in the R5 stage, and the level was similar to that of no treatment in the R2 and R7 stage. The difference between the growth regulators was found to be higher than that of ethephon when ABA was treated. The coumestrol content was confirmed to be high in the order of R7, R5, and R2 on the treatment time, and it was found that the content increased as the treatment time was delayed. In the treatment with the growth regulator, the coumestrol content tended to be higher when ethephon was treated than ABA.

[Acknowledgement]

본 연구는 농촌진흥청 사업 (과제번호: PJ014155012022)의 지원에 의해 이루어진 결과로 이에 감사드립니다.

*Corresponding author: E-mail, sjh329@korea.kr Tel. +82-55-350-1271