

PA-89

Effect of Compost Application on Soybean Growth and Yield in Barren Soil

Jae-Sun Lee^{1*}, Heoy-Lim Moon¹, Min-Ja Kim¹, In-Jae Kim¹, Gun-Ho Jung²

¹Chungcheongbuk-do Agricultural Research & Extension Services, Cheongju, 28130

²Department of Central Area Crop Science, National Institute of Crop Science, Rural Development Administration, Suwon 16429, Republic of Korea

[Introduction]

In barren soils, it is absolutely necessary to improve soil fertility in order to increase crop productivity due to a long-term shortage of soil organic matter and chemical fertilizers. In addition, North Korea's food productivity is about 50% of that of South Korea, and in order to increase the productivity of major crops, it is important to develop early ripening, disease-resistant, multi-variety varieties and intensive cultivation of crops that can increase food self-sufficiency early. Therefore, this study was conducted to establish the amount of organic compost input that can improve soil literacy in a short period of time in barren agricultural land to promote northern agriculture in preparation for unification.

[Materials and Methods]

Daewon and Seonpung soybeans were used for the test varieties, and the planting distance was 60 × 20 cm. The compost (1,000kg/10a) was divided into 4 treatments of no treatment, 1.0 times, 1.5 times, and 2.0 times, and sowed by repeating egg mass method 3 for each variety. Other cultivation management followed the Rural Development Administration's Agricultural Technology Guide, and growth and yield characteristics were investigated according to the Rural Development Administration's Agricultural Science and Technology Research and Analysis Criteria.

[Results and Discussion]

As a result of analyzing the physicochemical composition of the soil, pH, EC, and organic matter content increased as the amount of compost increased, and phosphoric acid was the highest at 162.6 mg/kg at twice the standard compost amount. As for the above-ground growth, the higher the composting dose, the greater the plant height and appearance, and the leaf color also increased, but there was no difference in the number of branches. The yields of Daewon and Seonpoong soybeans were 18~19% higher than the untreated ones, at 323 kg/ and 330 kg/10a, respectively, at 1.5 times the standard compost amount. Falling damage was severe at 2.0 times the amount of compost.

[Acknowledgement]

This study was carried out with the support of Rural Development Administration's agenda research project 「Project No.: PJ0162652022」.

*Corresponding author: E-mail, wings3924@korea.kr Tel. +82-43-220-5561