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A Comparison of the Growth Characteristics of Potatoes Varieties in the Potato-Sprout Soybean Cropping System in the Central and Northern Region

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[Introduction]

Due to climate warming, the sprout-soybean plantation is gradually moving northward, sprout-soybean production is unstable due to weather changes in the main production area, and the supply and demand of raw materials is gradually becoming unstable due to the conversion of threshing crops due to a decrease in income of production farmers. Potatoes are crops sensitive to weather factors, and for the cultivation of two crops in the middle and northern regions, we tried to select potato varieties applicable to the soybean-centered crop system by comparing the growth characteristics and quantity of potatoes.

[Materilas and Methods]

This test was conducted in 2021 and 2022 at a farme in Jinchon-ri, Miyang-myeon, Anseong-si, and the area of the farm is 0.4ha. For potato varieties, Sumi, Chubaek, and Haryeong were used. Seed potatoes were sown on March 14, 2021 and April 3, 2022, and the harvest was harvested on June 23, 2021 and June 27, 2022, taking into account the sowing and rainy season. The seed potato sowing amount was 150kg/10a, and the planting distance was 40×30cm.

[Results and Discussion]

As a result of comparing the growth of the harvest period, the number of stems was the largest with 6.0 in the lower age, and 4.8 and 4.2 in the upper and lower regions, respectively, showed similar results. In 2021 and 2022, the annual difference between the number of potatoes and the total number of potatoes was very large. In 2021, the average marketable yield was 4498.2kg/10a and the total yield was 4629.8kg/10a, and in 2022, the marketable yield and the total yield were 2,612.0kg/10a and 2,888.7kg/10a, respectively. By cultivars, the decrease in the yield of ‘Haryeong’ was the largest, the marketable yield decreased by 68% compared to the previous year, ‘Chubaek’ had the least decrease in yield, and it decreased by 16% year-on-year. In 2022, the seedling period was delayed by about 16 days due to frequent rain during the seed potato sowing period, and average temperature during entire growing period was 15.3°C in 2021, 17.9°C in 2022, and the highest temperature was 21.6°C in 2022, 24.8°C in 2022, so the tuber necrosis may be reduced. In the potato-sprout soybean cropping syatem, iit can be said that the ‘Chubaek’ variety with the best growth is the most suitable, since there is little difference in yield between the years.

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