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Correlation Analysis between Azuki Bean Quality Characteristics and Sediment Yield

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[Abstract]

Azuki bean is the important bean crop in Korea, and is traditionally used as a filling material for red bean porridge, rice cakes, and bread, as well as for sediment. So far, the National Institute of Crop Science has developed azuki bean varieties for various uses, such as for sediment, tea, and azuki bean sprouts. Among azuki bean elite lines, 25 strains were used to analyze the correlation between red bean quality characteristics and sediment yield. The crude protein of red beans was 25.0~28.9%, ash content was 3.8~5.3%, and fat was 0.4~1.0%. As for the appearance quality characteristics of azuki bean, one hundred seed weight was 11.1~19.5 g, the length of seed was 6.45~8.49 mm, the width seed was 4.84~6.45 mm, and the width/length ratio was 0.72~0.89. When the azuki bean were boiled, the thickness of the seed coat was 0.14~0.27 mm and the length ratio of seed was 0.65~0.76 mm, showing that the length of seed was slightly larger than the width. The yield of azuki bean sediment was 239~284% for whole red bean paste, and 144~203% for fine azuki bean paste. As a result of analyzing the correlation between the quality characteristics of azuki beans, such as protein, husk and seed weight, and the yield of azuki bean sediment, the yield of whole azuki bean sediment showed a negative correlation with the seed coat thickness and the length ratio of the original grain at -0.62 and -0.45, respectively. The yield of fine sediment showed a negative correlation with the length ratio of whole azuki beans at -0.49, and a positive correlation with that of white beans at 0.41. However, protein and ash content did not show any correlation with sediment yield. In view of the above results, it is thought that it would be better to have a high seed weight or a low width/length ratio of seed to develop azuki bean cultivar for sediment.

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