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Comparison and Characteristics of Grouping in the Productive Association of Soybean (*Glycine max* L.) Grown in Paddy Field

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[Introduction]

Recently, to improve the self-sufficiency of soybeans, the government has selected the field crop joint management support project (soybean) as fostering project since 2019 and is promoting a policy to expand the cultivated area of soybean grown in paddy field. This management as the productive association of soybean grown in paddy field is farming associations that are higher than the farmhouse unit organization, and there are with 44 in 2020 and 38 in 2021, total managements are 82. The purpose of this study is to derive a productivity improvement plan by examining the differences in organizational characteristics, production base, and field in the productive association of soybean grown in paddy field.

[Materials and Methods]

We analyze the report data on the soybean cultivation area in Korea, the number of members of farmers, and the quantity of soybean cultivation in 81 crop joint management in 2022, and use a questionnaire to analyze the organizational characteristics, level of expertise, production base (number of floods, etc.), and cultivation method in the productive association of the soybean grown in paddy field (one place did not cultivate soybeans in 2022).

[Results and Discussion]

In productive association of soybean grown in paddy field, the yield of 81 crop joint managements could be divided into 25% of low or up (19 places) and 50% of the median (43 places), and the yield of low group was less than 270kg/10a in the 1st quartile, and up group (each 19 places) was over 310/10a in the 3rd quartile. The the cultivation area per farmer was 2.52ha and 1.43ha of quantity in the upper and lower complexes. There was no difference in the area and frequency of flooding. However, there was significance in rapid response to flooding (the difference between forced drainage within 24 hours and after 24 hours). In the upper complex, the plain land had a higher proportion of cultivated area than the lower complex, and it responded well to drought and flooding.

The productive association of soybean (*Glycine max* L.) grown in paddy field were grouped into six, the soybean grown in paddy field general cultivation (A), new (F)-old (B) reclaimed land (the year of reclaimed land was classified as of 1990, divided by the occurrence of salt damage), vulnerable to flooding (C), high input and high yield (D), and non-standard cultivation (E). The number of complexes was 30 for A, 16 for B, 10 for F, 11 for C, 9 for D, and 5 for E. The yield (kg/10a) by the group was 218 for F and 333 for D (mean 279). The frequency of flooding was the highest in B and C groups, and the lowest in D. E and D groups were high, and F was low. These detailed research results can be applied to method of grouping productive association of other crops.

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