

P8. Fundamental research on Peanut Cultivation Using Deep Ocean Water

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1. Introduction

As modern people become increasingly more interested in the well-being culture, especially in food, consumers' demand that foods should be hygienic and free from harmful substances from their production processes has been increasing. Among many foods, peanuts are a well-being food that is excellent in terms of nutrition as they contain ingredients such as high levels of fat and proteins, unsaturated fatty acids, oleic acid, and linoleic acid, reduce cholesterol, prevent arteriosclerosis, and can be cultivated in a short time throughout the year if only the temperature is maintained. Currently, many countries began crop cultivation using deep ocean water and are showing successes. Crops cultivated using deep ocean water have been showing high growth rates and have been harvested in good qualities. Given these results, the use of deep ocean water for peanut cultivation is judged to shorten the cultivation period further and enhance the nutritional value. Therefore, the purpose of this study is to investigate peanut cultivation using deep ocean water.

2. Methods

The raw deep ocean water necessary for the study was taken from Kangwon Deep Water Co., Ltd. and Shinpalgwang peanuts were used in the study because they are in the limelight as their functionality and usability are high since they contain the anti-cancer substance luteolin, which has become an issue recently, 2.3 times more than do the conventional Daegwang peanuts.

The present experiment was conducted for 14

days to investigate the effect of deep ocean water on the growth rate of peanuts. Distilled water was used for the control group, only distilled water was used for experimental group 1, raw deep ocean water 1% + distilled water 99% was used for experimental group 2, raw deep ocean water 5% + distilled water 95% was used for experimental group 3, and raw deep ocean water 10% + distilled water 90% was used for experimental group 4 in the experiment.

3. Results

On the 8th, 9th, and 10th days of the experiment, experimental group 2(raw deep ocean water1%) showed the highest growth rate followed by experimental group 1(distilled water), experimental group 4 (raw deep ocean water 10%), and experimental group 3(raw deep ocean water 5%) in order of precedence and on the 11th, 12th, 13th, and 14th days of experiment, experimental group 3 (raw deep ocean water5%) showed the highest growth rate followed by experimental group2 (raw deep ocean water 1%), experimental group 4(raw deep ocean water10%), experimental group 1(distilled water) in order of precedence. Therefore, the peanuts for which general distilled water was used showed lower growth rates that the peanuts for which mixtures of raw deep ocean water and distilled water were used.

In the current situation where food consumption is increasing following population growth, if crops are cultivated using deep ocean water, much higher growth rates compared to general crops and good quality crops can be obtained to enable securing necessary amounts of foods.