

What Are the Benefits of Having Agriculture, Forestry and Fishery Experiences?

What are the impacts of gaining agriculture, forestry and fishery experience at school? Here's what we found out based on studies conducted with Japanese people.

Benefits of Agriculture, Forestry and Fishery Experiences

- Agriculture, forestry and fishery experience is related to raised awareness and interest in food.
- Agriculture, forestry and fishery experience is related to food awareness and knowledge.
- Agriculture, forestry and fishery experience is related to food preferences.
- Agriculture, forestry and fishery experience is related to eating behavior, such as leaving food unfinished.
- Agriculture, forestry and fishery experience is related to mental health.

What is Agriculture, Forestry and Fishery Experience?

- The Third Basic Plan for the Promotion of Shokuiku provides that workers in the agriculture, forestry and fishery industry are to collaborate with a wide range of stakeholders who promote shokuiku, including staff at schools, nurseries, and other educational organizations in proactively providing opportunities to gain a variety of experience related to agriculture, forestry and fisheries, through initiatives such as educational farms.^{*1}
- Agriculture, forestry and fishery experience includes rice planting (seeding), rice harvesting, vegetable harvesting and livestock care.



^{*1} Educational farms are farms run by farmers' associations where consumers can visit and experience a series of farming activities. Their purpose is to help consumers understand various activities of people whose work is related to nature or food.

Agriculture, forestry and fishery experience is related to raised awareness and interest in food.

Studies show that having agriculture, forestry and fishery experience is related to raised awareness and interest in food.

Benefits of Having Agriculture, Forestry and Fishery Experience

- ① Studies with elementary and junior high school students showed that having agriculture, forestry, and fishery experience led to a greater appreciation of food and interest in food.*1

- ② Studies with infants showed that having agriculture, forestry and fisheries experience had a positive impact on eating habits, such as increased consumption of vegetables.*2



Research Note

Example of vegetable farming experience

Who were the subjects?	64 third grade students in Fukuoka Prefecture engaged in vegetable farming experience as part of their comprehensive learning program over half a year.
What was this study about?	The study examined the effects of the farming experience on the students' awareness concerning environment, food, and farming, their daily behavior, and their eating habits. A questionnaire survey was conducted with the students before and after the experience. A questionnaire survey was also conducted with students who did not participate in the experience for the purpose of comparison.
What was found out?	Among the survey items, the percentage of students who responded "I don't hate any food" or "I always want to eat more vegetables" was higher after the experience. The percentage was also higher among the students who participated in the experience (after the completion of the experience) than those who did not.

Ying Ge et al. (2014), "The Effect of Agricultural Experience on Environmental Awareness and Eating Habits among Rural Children in Japan," *Kankyō Kyōiku*, 24(2), p.40-49 [Article No. 1]

*1 Article No. (Agriculture, Forestry and Fishery Experience): 1, 2, 5, 7, 8

*2 Article No. (Agriculture, Forestry and Fishery Experience): 6, 9

The list of articles can be found here (MAFF website):<http://www.maff.go.jp/j/syokuiku/evidence/index.html>

Findings Related to Agriculture, Forestry and Fishery Experiences (2)

Agriculture, forestry and fishery experience is related to food awareness and knowledge.

Studies show that agriculture, forestry and fishery experience is related to food awareness and knowledge.

Benefits of Having Agriculture, Forestry and Fishery Experience

Compared to those who have not, people who have agriculture, forestry and fishery experience tend to...

- 1 Have stronger interest in food and feel greater appreciation for food (studies on farming in kindergartens and schools with infants, elementary and junior high school students).^{*1}
- 2 Have better knowledge of seasonal vegetables and local cuisine (studies on agriculture experience for elementary school students at model schools, home gardens, and travel destinations, and studies with college students).^{*2}
- 3 Have a higher level of awareness about food (studies on farming on experience farms and community farms with adults and older people).^{*3}



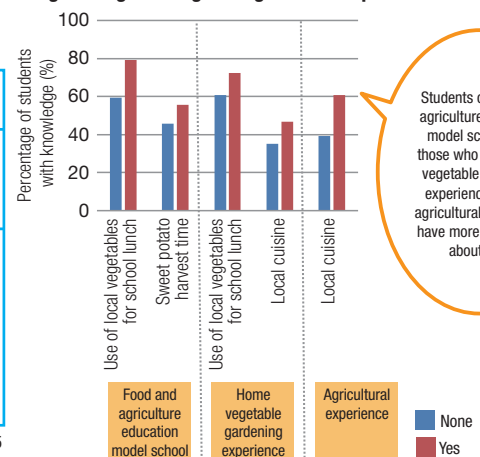
Research Note

Students of agriculture education model schools and children who have farming experience (including home gardens) have abundant knowledge about food!¹

Who were the subjects?	524 fifth- and sixth-grade students from four elementary schools in Gunma Prefecture
What was this study about?	The study examined the relationship between food knowledge (use of local vegetables for school lunch, harvest time of sweet potatoes, and local cuisine) and the designation of a model school for food and agriculture education, the experience of vegetable gardening and other agricultural experience.
What was found out?	- At schools designated as food and agriculture education model schools, many children knew that they use local vegetables for school lunch and knew when to harvest sweet potatoes. - Students who have experienced vegetable gardening had a higher chance of knowing that they use local vegetables for school lunch and knew about local cuisine. - Many of the students who have agricultural experience knew about local cuisine. In addition, many of these students also went grocery shopping with their family.

OURA Yuji et al. (2009), "Observing the Effects of School Luncheon and Food Agriculture Education on Children," 45 (2), p. 254-257 [Article No. 8]. (The figure was created based on Table 2.)

Relationship between food knowledge and the designation of food and agriculture education model schools, home vegetable gardening and agriculture experience



Students of food and agriculture education model schools and those who have home vegetable gardening experience or other agricultural experience have more knowledge about food.

*1 Article No. (Agriculture, Forestry and Fishery Experience): 1, 2, 4, 5, 7, 12

*2 Article No. (Agriculture, Forestry and Fishery Experience): 8, 13

*3 Article No. (Agriculture, Forestry and Fishery Experience): 19

The list of articles can be found here (MAFF website): <http://www.maff.go.jp/j/syokuiku/evidence/index.html>

Agriculture, forestry and fishery experience is related to food preferences.

Studies show that agriculture, forestry and fishery
experience is related to food preferences.

Benefits of Having Agriculture, Forestry and Fishery Experience

Compared to those who have not, people who have agriculture,
forestry and fishery experience tend to...

- ① Prefer vegetables grown in home or school gardens
(studies on vegetable gardening and farming at
kindergartens).^{*1}
- ② Have no dislikes for foods (studies on agricultural
experience with elementary school students).^{*2}



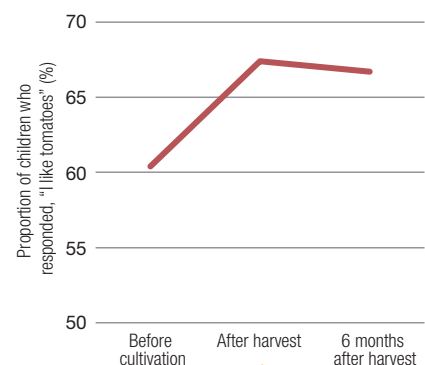
Research Note

Children who grew tomatoes come to like tomatoes!?

Who were the subjects?	221 children in the first year of five kindergartens in Hokkaido Prefecture
What was this study about?	The study examined whether the children's preference for tomatoes would change after growing, harvesting, and eating tomatoes and cherry tomatoes.
What was found out?	Children's preference for tomatoes improved after the harvest and six months after the harvest compared to before cultivation. Other criteria such as balanced eating (eating foods even if they do not like them), interest in food (speaking happily about what they know about vegetables, and feeling regretful when leaving foods unfinished or dropping foods) were also improved after the harvest and six months after the harvest.

KIDA Haruyo et al. (2016), "Tomato Cultivation in a Kindergarten: Influence of a Vegetable Growing Activity on Picky Eating Habits among Preschoolers," The Japanese Journal of Nutrition and Dietetics, 73 (1), p. 20-28 [Article No. 2]. (The figure was created based on Table 2.)

Changes in children's preference for
tomatoes before, after, and 6 months
after tomato cultivation



The number of children who liked
tomatoes increased after harvest
compared to before cultivation.

*1 Article No. (Agriculture, Forestry and Fishery Experience): 1, 2

*2 Article No. (Agriculture, Forestry and Fishery Experience): 4

The list of articles can be found here (MAFF website): <http://www.maff.go.jp/j/syokuiku/evidence/index.html>

Findings Related to Agriculture, Forestry and Fishery Experience (2)

Agriculture, forestry and fishery experience is related to eating behavior, such as leaving food unfinished.

Studies show that agriculture, forestry and fishery experience is related to eating behavior, such as leaving food unfinished.

Benefits of Having Agriculture, Forestry and Fishery Experience

Compared to those who have not, people who have agriculture, forestry and fishery experience tend to...

- ① Leave foods unfinished less often (studies on farming at home and school with preschoolers and elementary school students).^{*1}
- ② Eat a balanced diet consisting of staple food, a main dish, and side dishes, and take in various kinds of foods (studies on agricultural experience farming with college students, adults, and older people).^{*2}
- ③ Eat vegetables more frequently and have more opportunities to acquire vegetables (studies on farming at community farms and home gardens with adults and older people).^{*3}

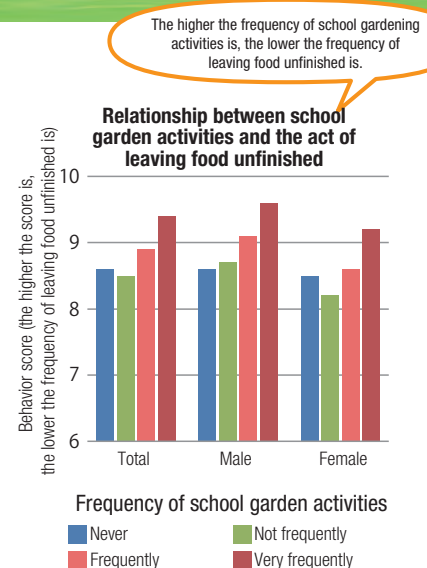


Research Note

Children who have experienced school gardening activities leave food unfinished less often!?

Who were the subjects?	1,994 5th and 6th graders attending a public elementary school in Ward A, Tokyo
What was this study about?	The study examined the relationship between the frequency of school gardening activities and the act of leaving food unfinished.
What was found out?	The higher the frequency of school gardening activities was, the higher the behavior score was (meaning leaving food unfinished less often). In addition, the higher the frequency of school gardening activities was, the stronger the children's regret for leaving their food unfinished was. These children tended to like vegetables and had higher expectations for the benefits of eating vegetables.

TANIGUCHI Takaho et al. (2009), "Psychosocial predictors of leftover food in Japanese elementary school students: the feeling of mottanai and vegetable intake," Japanese Journal of Health Education and Promotion, 17 (1), p. 24-33 [Article No. 6]. (The figure was created based on Table 3.)



*1 Article No. (Agriculture, Forestry and Fishery Experience): 1, 2, 3, 6

*2 Article No. (Agriculture, Forestry and Fishery Experience): 13, 18

*3 Article No. (Agriculture, Forestry and Fishery Experience): 16, 18 (Note: Article No. 17 observed no relevance.)

The list of articles can be found here (MAFF website): <http://www.maff.go.jp/j/syokuiku/evidence/index.html>

Agriculture, forestry and fishery experience is related to mental health.

Studies show that agriculture, forestry and fishery
experience is related to mental health.

Benefits of Having Agriculture, Forestry and Fishery Experience

Engaging in agriculture, forestry and fishery experience...

- ① Alleviates tension, anxiety, and anger (studies on agricultural experience
in rural areas with elementary school and junior high school students).^{*1}
- ② Helps people maintain a good mental condition
(studies on farming on community farms with
adults and older people).^{*2}



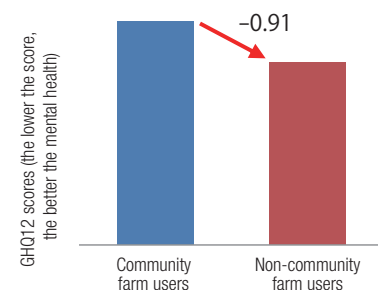
Research Note

Users of community farms have better mental health!?

Who were the subjects?	165 community farm users and 167 non-farm users in Nerima-ku
What was this study about?	The study examined the relationship between the use of a community garden and mental health. (GHQ12: The lower the score, the better the mental health.)
What was found out?	The GHQ12 score of the community farm users was lower than that of the non-farm users. In other words, the community farm users had better mental health. In addition, compared to non-farm users, community garden users were more likely to eat vegetables and see themselves as healthy, had less subjective symptoms of health, and felt more connected with other local people.

Soga M, et al. (2017), "Health Benefits of Urban Allotment Gardening: Improved Physical and Psychological Well-Being and Social Integration," Int J Environ Res Public Health, 14 (1), 71 [Article No. 16]. (The figure was created based on Table 3).

Relationship between the use
of community farms and mental health



A lower GHQ12 score indicates better mental health. In other words, the community farm users have better mental health.

*1 Article No. (Agriculture, Forestry and Fishery Experience): 9, 11

*2 Article No. (Agriculture, Forestry and Fishery Experience): 16

The list of articles can be found here (MAFF website): <http://www.maff.go.jp/j/syokuiku/evidence/index.html>



Reference

Findings Related to Agriculture, Forestry and Fishery Experience (3)

What Are the Benefits of Agriculture, Forestry and Fishery Experience?

Findings from Overseas Studies

Benefits of Having Agriculture, Forestry and Fishery Experience

The following tendencies have been reported in relation to people who have agriculture, forestry and fishery experience as compared to those who have not.

● **Agriculture, forestry and fishery experience is related to food awareness and knowledge.*1**

It has been reported that they tend to be more willing to eat vegetables and fruits and have high knowledge of nutrition.

● **Agriculture, forestry and fishery experience is related to food preferences.*2**

It has been reported that they tend to like vegetables and fruits.

● **Agriculture, forestry and fishery experience is related to eating behavior.*3**

It has been reported that they tend to eat a lot of vegetables and fruits and have a well-balanced diet.

● **Agriculture, forestry and fishery experience is related to physical activities.*4**

It has been reported that they tend to be more physically active.

● **Agriculture, forestry and fishery experience is related to mental health.*5**

It has been reported that their stress hormone level tends to be low.

● **Agriculture, forestry and fishery experience is related to connections with the local people and communities.*6**

It is reported that they tend to have more opportunities of social participation and strong connection with their local community.



*1 Article No. (Agriculture, Forestry and Fishery Experience/Overseas): 2, 8, 9, 10, 12, 14

*2 Article No. (Agriculture, Forestry and Fishery Experience/Overseas): 7, 8, 9, 10, 12, 14

*3 Article No. (Agriculture, Forestry and Fishery Experience/Overseas): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

*4 Article No. (Agriculture, Forestry and Fishery Experience/Overseas): 1, 3, 6, 7, 8

*5 Article No. (Agriculture, Forestry and Fishery Experience/Overseas): 1, 6, 7, 11

*6 Article No. (Agriculture, Forestry and Fishery Experience/Overseas): 1, 3, 6, 7, 11

The list of articles can be found here (MAFF website):<http://www.maff.go.jp/j/syokuiku/evidence/index.html>