

A Report of Graduate General Education Course(GGEC) “International Research Project” 2017

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1. Project

The Production, Consumption, and Nutrition of Tomatoes in Hungary: An Overview of Health Benefits

2. Supporting Organization and Project Duration

Hungarian Research Institute of Organic Agriculture. 2017/9/1-2017/9/19

3. Purpose

In recent years, poor lifestyle choices, low energy intake, stress, and excessive strain training have left numerous athletes in a bad state of bone health and vascular sclerosis. However, studies have indicated that the intake of lycopene-rich foods is associated with reduced risk of low bone density, and cardiovascular disease.

However, one of the most lycopene-rich food, tomato, is much lower in Asian countries than in European countries because there are comparatively few popular ways to consume tomatoes . Therefore, it is necessary to examine not only how tomatoes are prepared, but also how they are marketed and consumed in Europe in order to increase the consumption and appeal of tomatoes in the East Asia region.

4. Project Contents

I divided this research project into three major aspects over the course, the contents are as below.

The first major aspect of my research is an examination of the marketing of tomatoes. I went to four big vegetable and fruit retailers and a bio-market which serves farmers in order to gain a general understanding of the mass market for tomatoes. To learn about the consumption and preparation of tomatoes within the Hungarian kitchen, I interviewed farmers and households to understand some traditional Hungarian methods of consuming and preparing tomatoes.

The second research aspect involved field research on the organic farming of tomatoes. By visiting 3 organic farms—Three beehives organic farm (9/8), MagosVölgy Ecological Farm (9/13), and Helóta Biokert (9/15)— I learned about how tomatoes are grown on organic farms, the difference between organic tomatoes and conventional

ones, and the challenges organic farmers are facing now and may continue to face in the future.

The third aspect entailed fundamental research on the benefit of tomatoes. First, in order to understand the differences between fresh and cooked tomatoes in terms of nutritional content, I visited Szent Istvan University, learned that in fresh tomatoes, lycopene is sensitive to thermal processing like heating and cooking, after heated, it can be absorbed by the human body better. Further, the antioxidant activity is also higher for cooked tomatoes. However, other nutrients like Vitamin A, C, K will be destroyed by heating. Therefore, it is difficult to conclusively say which method of tomato preparation is better for human health. Therefore, I hypothesize that eating both raw and cooked tomatoes is important.



Participated in tomato processing in an organic farm:

- pick and wash the tomatoes
- cut them to slice
- put them to the juicer machine
- preserve in glass bottles

After participating in an experiment that involved the testing the basic characteristics (the hardness of skin and flesh, acid, sugar, PH) in the research institute, I learned that the flavor of tomato is based on the balance between sugar and acidity. The use of these tomatoes in recipes depends in large part on their different flavors; sweet ones are suitable for eating raw or processing into sweet tomato paste, while some sour ones are more suitable to cook together with other ingredients as a dish, and so on.

Finally, after gaining an understanding of the many differences and uses of tomatoes in Hungary, I visited Maki Stevenson—a Japanese woman who owns a cookery school called “Makifood” in Hungary, to get a better understanding of the differences between the tomatoes of Japan and Hungary, and also to determine the feasibility of applying some Hungarian ways of tomato consumption to the East Asian region. Meanwhile, I also gathered some basic information on tomatoes in China to have a compelling comparison when discussing the feasibility.

5. Conclusion

Taking all of these aspects into consideration, I can only say that, in order to intake more lycopene for our body from tomatoes, we can learn from some of the preparation methods of tomatoes in Hungary. However, it must be realized that every coin has two sides. Our body has our own biorhythm, and it matches the rhythm of the place where you live. But it cannot be said that the Hungarian preparation methods are perfectly

transferable to people in Asian region. Rather, we should selectively incorporate those methods that match our own body biorhythm. In the case of tomatoes, I think one option for Japan or China is to incorporate tomatoes into local diets if only when tomatoes are in season, to choose to consume natural organic tomatoes growing in the local farms if possible, and to periodically try new methods of consumption that differ from local habits.

6. Acknowledgements

Having this chance to conduct such a meaningful and fruitful research project, I really would like to thank GGEC for this opportunity. It is really an invaluable experience to me. By these 20 days in overseas, I further improved my skill in research, my spoken English and verbal communication, and also increased my specialized knowledge for playing an active role in the international area in the future.