

## Utilization of Wild Plants as Food and Commodity in Japan

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雑誌名	Senri Ethnological Studies
巻	100
ページ	223-230
発行年	2019-03-12
URL	<a href="http://doi.org/10.15021/00009397">http://doi.org/10.15021/00009397</a>

## Utilization of Wild Plants as Food and Commodity in Japan

### 日本国内作为食物与商品的野生植物的利用

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#### ABSTRACT

Wild plants have been produced and distributed as food and commodities since ancient times in Northeast Asia and neighbouring areas. This chapter discusses the sustainable utilization and distribution of wild plants as food and commodities in Northeast Asia, focusing in particular on Japan. In parallel with this development, mutual exchange of wild plants has increased, particularly between Japan and China, Korea, and Russia. This chapter aims to elucidate the contemporary utilization of wild plants throughout Japan. How have wild plants been managed and used as foods by the local people? Who played key roles in exchange: traders, merchants, or ordinary people? What social changes in the community have occurred after introduction of new wild plants? Various cases in Japan are presented to cover these topics.

#### 摘要

自古以来，作为食物与商品的野生植物就已经在东亚及其邻近地区种植、传播。在本论文中，笔者将讨论这些作为食物与商品的野生植物在东亚地区、特别是日本本土的持续利用与传播。与此同时，伴随着其在日本本土的发展，这些野生植物在日中、日韩以及日俄之间的相互交流也频繁增加。本论文旨在阐明整个日本国内野生植物的当下利用状况。本土民众是如何利用其作为食物与商品的？引入新的野生植物后，社区中发生了哪些社会变化？本文将对上述主题相关的日本各种案例进行介绍展示。

#### INTRODUCTION

This chapter discusses the sustainability of wild plant use in Northeast Asia from an environmental anthropology perspective, based on the uses, management, and distribution of wild plants.

Natural resources, especially non-timber forest products (NTFP; also non-wood forest products, NWFP), can be gathered from ‘wild areas (not influenced by human impacts)’. Encouraging NTFP production is said to play an important socioeconomic role because this production can contribute to forest conservation, especially in the Amazon, Africa, and Asia, laying a foundation for sustainable production development. Trade in fruits, nuts, and animal skins, such as honey, cam cam, fern, medical products, and peccary skin (Huber et al. 2010; Stanley, Voeks, and Short 2012; Ikeya 2013), for example, has been developed in this manner. Nevertheless, very few reports in the relevant literature have described studies of plant utilization in Northeast Asia, except for those examining some wild plants such as *matsutake* (*Tricholoma matsutake*) (Tsing 2015). This study was conducted to clarify the actual circumstances of local and commercial use of NTFP (specifically plants) in Northeast Asia from an environmental anthropology perspective. The author conducted fieldwork for several years in northeast Russia and especially in northern Japan.

Research on the use and management of wild plants has been conducted individually in the fields of economics, cultural anthropology, human geography, sociology, and others. Bishop (1998) arranged research activities from the perspective of the economics of NTFP. In the field of cultural anthropology, research activities have been arranged with the theme of earning activities and protection of small-scale societies. Although the term ‘non-timber forest products’ is not used, many case studies related to the use of wild plants and animals have been published in the literature of this field. Regarding the recent use of NTFP worldwide, information can be obtained from FAO (Food and Agriculture Organization of the United Nations) newsletters, which include articles related to ginseng.

Environmental anthropology presents a framework for the study of NTFP with respect to wild plant use and management. In fact, NTFP have been produced and distributed in northeast Asia and neighbouring areas since ancient times. Natural resources include animal and plant products, such as wild and domestic animal skin, horns, teeth, honey, and animal meat. This chapter discusses the production and distribution of wild plants in the forests of northeast Asia, including Japan (wild plant gathering), China, Mongolia, and Russia. In parallel with this development, mutual exchange of wild plants has increased, particularly between Japan and China, Korea, and Russia.

This chapter includes three parts. First, as a framework for the research, the use of wild plants (non-timber natural resources) is examined. Specifically, use of wild animals and plants in the Amazon, the world’s largest tropical forest, will be observed. The use of resources in villages is examined, and the relation between cities and villages with respect to wild plants is demonstrated. Second, current studies related to the use of non-timber resources in northeast Asia are arranged and organized according to earning activities: hunting; gathering edible wild plants, mushrooms, and nuts; livestock breeding; and others. Third, the use and

**Table 1. Categories of non-timber forest products**

Resource	Parts
Animal	Meat, fur, horns, gallbladder
Plant (mushrooms, edible wild plants, nuts)	Fruit, stems, roots, leaves

management of wild plants in Japanese villages is introduced as an example. Finally, the discussion presents the usefulness of these reports on Northeast Asia for sustainable use of wild plants worldwide.

## **NON-TIMBER FOREST PRODUCTS IN NORTHEAST ASIA**

First, the various vegetation in Northeast Asia is described. In the current project, Northeast Asia includes Siberia and the maritime regions of Russia, Mongolia, China, North Korea, South Korea, and Japan. Vegetation varies considerably with latitude from north to south: from the tundra to forests of the Frigid Zone (taiga and coniferous forest), to forests of the Temperate Zone (deciduous broadleaf forest and evergreen broadleaf forests), and so on. In each area, non-timber resources have been used in a traditional manner. After reviewing earlier related publications, resources to be studied were arranged as shown in Table 1.

### **1. Use of Wild Animals: Fur, Meat, Bear Gall Bladder, Deer Horn**

In the tundra area, social systems have changed drastically since the collapse of the socialist Soviet Union system. However, in Chukchi, the northeast area of Russia, national farms have been run continuously in many regions. Although government-controlled reindeer breeding is the central aspect of life in Chukchi (Ikeya 2001), however, we cannot disregard that people profit from hunting. Even now, hunting for arctic foxes, which are captured with iron traps, is extremely popular in this area. The fur of the captured foxes is processed in town.

In taiga areas, sable and wolves are hunted because of the high commercial value of their fur. Wolf hunting in particular is said to have been conducted in the forest of northwest Ulaanbaatar, the capital city of Mongolia. However, because exports of such fur are prohibited, the fur is sold in Ulaanbaatar's shops.

In deciduous broadleaf forest areas (Photo 1), taking the example of Japan, people hunt for the furs of bear and deer, or for bear gallbladder. Although today hunting is conducted as a hobby, not for profit, professional hunters called *matagi* do continue to practice (Ikeya 2006) (Photo 2). They maintain worship for the mountain gods and conduct various rituals. They also sell fur and bear gallbladders. However, capturing bears for their gallbladders is prohibited by animal protection laws.

### **2. Use of Wild Plants: *Matsutake* Mushrooms, Ginseng, Chestnuts**

In research on gathering and collecting, *matsutake* mushrooms and ginseng have



**Photo 1** Deciduous broadleaf forest areas in Japan



**Photo 2** Bear hunter in the earli spring



**Photo 3** Gathering fiddlehead fern, called *zenmai* in Japanese

received attention because of their high commercial value. Research on living and resource protection in gathering of NTFP has been undertaken in southwest China.

In Japan, use of chestnuts for *mochi* and rice cake has attracted attention. The complicated processes for eating *tochi no mi* (Japanese horse chestnuts) are well known. Currently, in Takashima town of Shiga Prefecture, these chestnuts are gathered not only from Shiga but also from Gifu Prefecture. They are processed and sold as a high-class rice cake to Japanese sweet shops in Kyoto, Osaka, and other places.

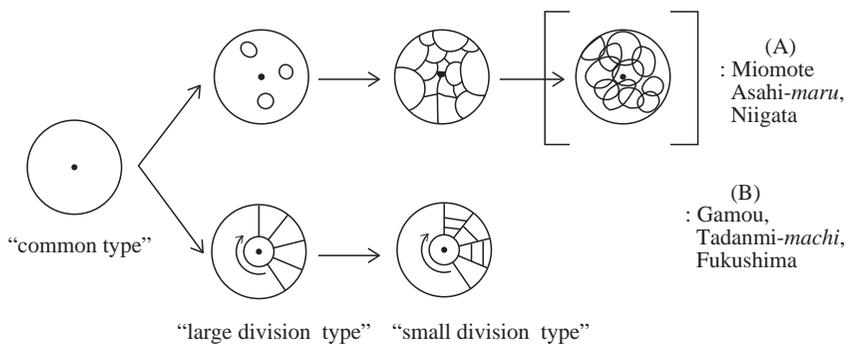
Many roadside shops in Japan also sell wild mountain plants in spring, and mushrooms and nuts in autumn. In a mountain village in Tokushima, the wild plant, a kind of fern has high commercial value and generates profit for the elderly women of the village.

### **RESOURCE USE, MANAGEMENT, AND DISTRIBUTION IN JAPAN: THE CASE OF WILD PLANTS**

The young shoots of *zenmai* (*Osmunda japonica*), a kind of fern (Photo 3), are a traditional edible plant in Japan. *Zenmai* is densely distributed on steep mountain slopes where heavy snow falls. Therefore, good quality *zenmai* has been produced in the mountain villages of the Tohoku region facing the Sea of Japan (Ikeya 2003).

#### **1. Social History of Zenmai**

Traditionally, fiddlehead ferns, called *zenmai* in Japanese, were used in vegetarian meals at temples in Kyoto, Nara, and other areas (Ikeya 2003; Ishige 2015).



**Figure 1** Development process of structures in gathering  
source: Created by the author

During the Edo period, they were transported from Akita by boat or this purpose. In modern times, with the growth of commercial economy, villages specializing in gathering *zenmai* were established on the coast of the Tohoku region (Ikeya 2003). The author identifies ‘*zenmai* settlements’ in which *zenmai* production is important to the village life’s economy. These settlements are distributed at the foot of the Moriyoshi Range, the Waga Range, the Kurikoma Range, the Choukai Range, the Asahi Range, the Iide Range, and the Echigo Range. According to a survey conducted by Ikeya, around 1980 professional gatherers resided on the mountain with their family and earned only US dollars 9,000 in a month.

Today, production of *zenmai* is decreasing with the lack of successors. Substantial labour is required to gather the ferns, which grow on steep mountain slopes (Ikeya 2004). A professional from Niigata Prefecture travelled to China to teach the Chinese how to gather and process the ferns. At that time, Chinese people did not customarily eat *zenmai*, but gathering commenced in the middle basin of the Yangtze River and the collected ferns are imported to Japan.

## 2. Use and Management of Resources

Commercialization and use of resources can be explained by the dynamic model of territory, shown in Figure 1. The gathering territory is decided not by a conference of gatherers, but by mutual agreement. In this permissive organization, boundaries were decided by tacit understanding among villagers. Consequently, in some *zenmai* settlements, the gathering territory’s structure was destroyed by a dam construction plan, increase in gatherers from the city, and their disregard of *zenmai* ecology.

Around 1990, cultivation of *zenmai* began on Shikoku Island. These *zenmai* are sold in supermarkets and shops in Japan.

## DISCUSSION: USE OF WILD PLANTS AS FOOD AND COMMODITIES, AND ITS SUSTAINABILITY

Villagers living in the deep mountain areas of Japan have gathered and used wild plants for food since historical times. Since the Edo period, *zenmai*, an example of wild plants (called “Sansai”), have been used not only as food, but also as commodities.

The author has previously reported on the destruction of a *zenmai* settlement’s gathering territory structure, mutually agreed to among inhabitants, to illustrate the changes in village lifestyle caused by a dam construction plan (Ikeya 1988). The author applied the above model to the types of resource use in Japanese mountain villages. In the case of *maitake*, a kind of mushroom usually found at the base of Japanese oaks, resource density and predictability were low. Because there is keen competition for *maitake*, geographical territoriality cannot be formed. In the case of *zenmai*, however, territoriality occurred because the two variables were high.

This chapter has discussed the sustainable utilization and distribution of a wild plant (*zenmai*) in Northeast Asia, focusing on Japan in particular.

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