

Research Article

TRADITIONAL KNOWLEDGE ON WILD FOOD PLANTS IN DOONG VILLAGE, TAN TRACH COMMUNE,  
BO TRACH DISTRICT, QUANG BINH PROVINCE, NORTH CENTRAL VIETNAM

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Received 24<sup>th</sup> August 2022; Accepted 19<sup>th</sup> September 2022; Published online 31<sup>st</sup> October 2022

Abstract

The purpose of the study was to document the traditional wild food plants used by tribal people in Doong village, Tan Trach commune. A total of 46 species were documented as wild plants used for food purposes. Among those species, 46 species are herbs followed by 21 trees, 7 shrubs, 10 herbs and 8 climbers. The present study accentuates the significant role of ethnobotanical researches, which needs to be documented by the extraction of traditional knowledge pertaining to the use of plants by future generations. The study could contribute significantly to Government policies to improve food security in tribal areas and in the improvement of wild vegetable status, whose potential as sources of nutrition is currently undervalued.

**Keywords:** Edible plants, Quang Binh, Traditional use, Vietnam, Wild plants.

INTRODUCTION

The area of Tan Trach commune lies at 17°26'52"N and 106°16'33"E and includes territory over 35.425,71 ha. It is located in the southwestern part of Bo Trach District of Quang Binh Province in North Central Vietnam. The territory of Tan Trach District is a hilly area with dominating elevations up to 424 m a.s.l. with a tropical climate, annual precipitation 2,000–2,500 mm, high humidity (above 65%), annual mean temperature 20°–32°C. The coldest month is January with temperatures from 19–22°C and the hottest month is July, August with temperatures from 25–36°C. Diverse natural conditions lead to the formation of various forest types with very rich species composition. The area is covered by 78% forest cover of its total geographical area and these forest harbors diversity flowering plant species. In our days ethnic groups: Bru - Van Kieu (92%), Kinh, or Viet (8%) inhabit Tan Trach area (Tan Trach commune, 2021). Since immemorial time they have been dependent on forests for their livelihood and everyday activities. For a long time they accumulated huge traditional knowledge, which they passed on from generation to generation (Yoshitaka and Nguyen, 1997; Nguyen and Yoshitaka, 2007). This knowledge is based on their needs, instincts, observation, trial and error and long experiences (Bui, 1986; Nguyen and Bui, 1994). Traditional knowledge is providing them with food security and materials for shelter, ritual, and healthcare system (Beer, 1996). Traditional wild edible plant products in Doong Village are used mostly as soup, boiled, condiment, jelly, or eaten as fresh or boiled vegetables (Tan Trach commune, 2021; Yoshitaka and Nguyen, 1997; Nguyen and Yoshitaka, 2007; Bui, 1986; Nguyen and Bui, 1994; Beer, 1996; Ogle, 2001; Ogle *et al.*, 2003; Prosea, 1992 & 1993).

METHODS AND MATERIALS

At each time of visit, the different places were chosen to search for the wild food plants used by local people for different forms of their traditional livelihoods (in the territory of Doong village). The information was accrued after discussions with several tribal persons, the village head, older women, and other local informants. Repeated interviews through questionnaires were made in different villages to authenticate the information. Thirty families (key informants) of different age groups (between the ages of 15–58 years old) were chosen as the model groups for the study. Repeated interviews through questionnaires were made in different groups to authenticate the information. The collected plant specimens were identified for their names through the available relevant literature reported by Averyanov *et al.* (2020), Nguyen *et al.* (2021) Pham (1991–1993), Prosea (1992 & 1993), Suk *et al.* (2005), Tran (1995), and Yoshitaka *et al.* (2018). Plants (or their parts) were photographed and used for the preparation of the voucher herbarium specimens following the standard herbarium technique. These specimens were deposited in the herbarium of Vietnam National University of Forestry (VNF) and Quang Binh University (QBU).

RESULTS AND DISCUSSION

Edible wild plants as a food resource in Doong village were investigated in this study. As result, of the study, it was detected that different parts of 46 plant species from 37 families were consumed for food purposes in the area. We have made face-to-face interviews to collect ethno botanical information. Local names, life forms, used parts, methods of preparation, and traditional uses were recorded through these interviews (Table 1). Data analysis (Table 1) shows that 46 species of wild edible plants in Doong village belong to 37 families. The largest families are Euphorbiaceae (includes 4 species, occupied 9.6% of all recorded species), Anacardiaceae,

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Table 1. Wild edible plants used by people from different ethnic groups in Doong village

Family	Latin name	Local name	Habit	Utilized part	Indigenous uses
Actinidiaceae	<i>Saurauja roxburghii</i> Wall.	Dương đào bắc	Shrub	Fruits	Ripe fruits are edible
Anacardiaceae	<i>Choerospondias axillaris</i> (Roxb.) B.L.Burtt & A.W.Hill	Dâu da xoan	Tree	Fruits	Ripe fruits are edible (sweet-sour tasting, cooling)
Anacardiaceae	<i>Muntingia calabura</i> L.	Trúng cá	Tree	Fruits	Ripe fruits are edible
Apiaceae	<i>Centella asiatica</i> (L.) Urb.	Rau má	Herb	Leaves, shoots	Leaves and shoots are eaten as a raw salad
Araliaceae	<i>Schefflera heptaphylla</i> (L.) Fordin	Chân chim	Tree	Leaves	Leaves are cooked soup with pork (a bitterish taste)
Arecaceae	<i>Arenga pinnata</i> (Wurmb) Merr.	Bông Bàng	Tree	Core	Soft inner core is eaten raw
Arecaceae	<i>Calamus tenuis</i> Roxb.	Song	Climber	Core	Soft inner core is eaten raw
Arecaceae	<i>Caryota mitis</i> Lour.	Đứng đình	Tree	Core	Soft inner core is eaten raw
Aspleniaceae	<i>Diplazium esculentum</i> (Retz.) Sw.	Rau dớn	Herb	Fronds	Very young fronds are eaten boiled or fried
Begoniaceae	<i>Begonia longifolia</i> Blume	Hải đường	Herb	Leaves, shoots	Leaves and shoots are pickled and after cooked as condiment
Bignoniaceae	<i>Oroxylum indicum</i> (L.) Kurz	Núc nác	Tree	Fruits	Ripe fruits are grilled in hot coal, then cut and mixed with vegetables, boiled pork (a bitterish taste)
Burseraceae	<i>Canarium album</i> (Lour.) DC.	Trám trắng	Tree	Fruits	Young fruits are pickled and after cooked as condiment with pork, fish, or drunk as juice
Caesalpiniaceae	<i>Saraca dives</i> Pierre	Vàng anh	Tree	Leaves, fruits	Young leaves are eaten raw
Cucurbitaceae	<i>Gynostemma pentaphyllum</i> (Thunb.) Makino	Giáo cổ lam	Climber	Leaves	Leaves are cooked soup (a bitterish taste)
Dilleniaceae	<i>Dillenia ovata</i> Hook.f. & Thomson	Sỏ	Tree	Fruits	Young fruits are cooked as sour condiment or eaten raw (a sour taste)
Dilleniaceae	<i>Dillenia heterosepala</i> Finet et Gagnep	Lọng bàng	Tree	Fruits	Ripe fruits are eaten raw or cooked as sour condiment with fish
Elaeocarpaceae	<i>Elaeocarpus griffithii</i> (Wight) A. Gray	Côm tầng	Tree	Fruits	Ripe fruits are edible
Euphorbiaceae	<i>Phyllanthus emblica</i> L.	Me rừng	Tree	Fruits	Young fruits are cooked as sour condiment or eaten raw (a sour taste)
Euphorbiaceae	<i>Sauropus racemosus</i> Beille	Rau ngót rừng	Shrubs	Leaves, flowers	Young leaves and flowers are cooked soup with pork
Euphorbiaceae	<i>Baccaurea cauliflora</i> Lour.	Dâu da đất	Tree	Fruits	Ripe fruits are edible
Euphorbiaceae	<i>Bischofia javanica</i> Blume	Nhội	Tree	Leaves	Young leaves are eaten raw
Gnetaceae	<i>Gnetum montanum</i> Markgr.	Dây gắm	Climber	Fruits	Ripe fruits are edible (a sweet taste)
Hypericaceae	<i>Cratogeomys formosum</i> (Jacq.) Dyer	Thành nganh	Tree	Leaves	Young leaves are eaten raw (a bitterish taste)
Lauraceae	<i>Litsea cubeba</i> Pers.	Mãng tang	Shrub	Fruits	Young fruits are cooked as spicy condiment (a pepper taste)
Menispermaceae	<i>Cissampelos andromorpha</i> DC.	Tiết dẻ	Climber	Leaves	Leaves are crushed to make jelly
Moraceae	<i>Ficus auriculata</i> Lour.	Và	Tree	Leaves	Young leaves are eaten raw, ripe fruits are edible (a sweet taste and good flavor)
Moraceae	<i>Ficus racemosa</i> L.	Sung	Tree	Leaves, fruits	Young leaves and fruits are eaten raw (a bitterish taste)
Moraceae	<i>Streblus asper</i> Lour.	Ruổi	Shrub	Fruits	Ripe fruits are edible
Musaceae	<i>Musa acuminata</i> Colla	Chuối	Herb	Shoots, flowers	Shoots and flowers are eaten raw or cooked soup with pork
Myrsinaceae	<i>Embelia ribes</i> Burm.f.	Chua ngút	Climber	Leaves, fruits	Leaves are cooked as sour condiment. Ripe fruits are edible
Myrsinaceae	<i>Maesa peralaria</i> (Lour.) Merr.	Đơn nem	Shrub	Leaves	Young leaves are eaten raw
Myrtaceae	<i>Rhodomytus tomentosa</i> Aiton Hassk.	Sim	Shrub	Fruits	Ripe fruits are edible
Olacaceae	<i>Erythralium scandens</i> Blume	Bò Khai	Climber	Leaves	Young leaves are eaten boiled
Opiliaceae	<i>Melientha suavis</i> Pierre	Rau sắng	Tree	Leaves, fruits	Young leaves and fruits are eaten fresh and used for soup cooking
Oxalidaceae	<i>Oxalis corymbosa</i> DC.	Chua me	Herb	Leaves, flowers	Leaves and flowers are cooked as sour condiment
Passifloraceae	<i>Passiflora foetida</i> L.	Lạc tiên	Climber	Leaves, fruits	Leaves are cooked soup, ripe fruits are edible
Piperaceae	<i>Peperomia pellucida</i> (L.) Kunth	Càng cua	Herb	Leaves, shoots	Leaves and shoots are eaten as raw salad or cooked soup
Plantaginaceae	<i>Plantago asiatica</i> L.	Mã đề	Herb	Leaves	Young leaves are eaten fried, as well as cooked soup with pork
Polygonaceae	<i>Polygonum chinensis</i> L.	Thỏm lỏm	Herb	Leaves	Leaves are eaten raw or cooked as sour condiment
Rosaceae	<i>Rubus alceaefolius</i> Poirlet	Mâm xôi	Tree	Fruits	Ripe fruits are edible
Solanaceae	<i>Solanum nigrum</i> L.	Lủ lủ dục	Herb	Leaves	Young leaves are eaten boiled
Solanaceae	<i>Solanum torvum</i> Sw.	Cà đại hoa trắng	Shrub	Fruits	Young fruits are eaten boiled
Sterculiaceae	<i>Sterculia lanceolata</i> Cav.	Sáng	Tree	Seeds	Seeds are eaten raw or grilled
Taccaceae	<i>Tacca plantaginea</i> (Hance) Drenth	Rầu hùm	Herb	Leaves	Young leaves are cooked soup with pork
Tiliaceae	<i>Microcos tomentosa</i> Sm.	Cò ke	Tree	Fruits	Ripe fruits are edible
Verbenaceae	<i>Clerodendrum cyrtophyllum</i> Turcz.	Đắng cây	Shrub	Leaves	Young leaves are fried with eggs (a bitterish taste)

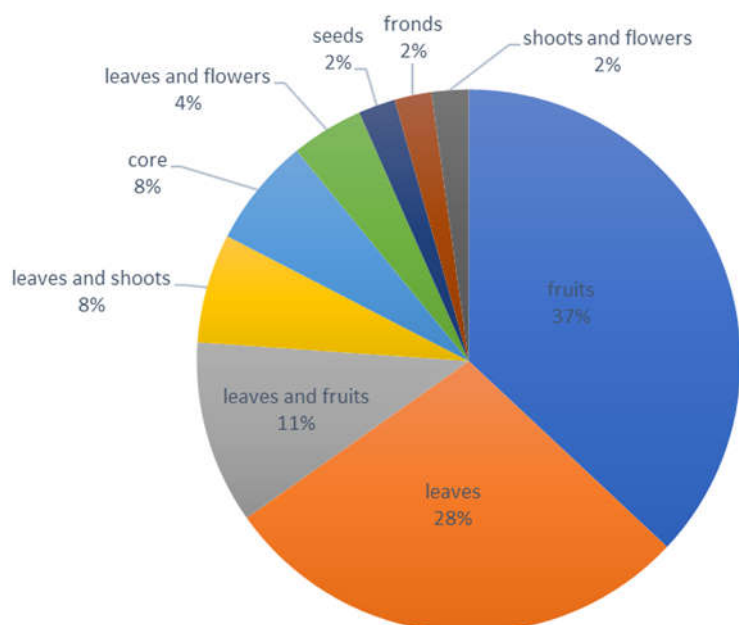


Figure 1. Percentage of plant parts used by tribals

Arecaceae, and Moraceae (3 species, – 5.8%), Cucurbitaceae, Dilleniaceae, Myrsinaceae, and Solanaceae (2 species, – 3.8%), relatively, which together represent 57.7% of all recorded edible plants. Euphorbiaceae, Anacardiaceae, Arecaceae, and Moraceae are the biggest families with a fluctuating percentage from 9.6 % to 5.8 %. This is not surprising, because they are also the biggest families in the flora of Vietnam including many various species of different use. Detected wild edible plants of Doong village area belong to the following life forms: trees with 22 species (46.2% of all recorded species), herbs: 10 (21.2%), shrubs: 8 (17.3%), and climbers: 7 (15.3%). In comparison, the flora of edible wild plants of the Cold Desert Biosphere Reserve of Indian Himalaya (Pham *et al.*, 2018) contains 91 species including only one tree species. This lies in strong contrast between the cold desert biome and the tropical forest biome where trees dominate. The 46 wild edible plants have been ranged into 9 groups on the manner of their use. They are plants with edible fruits (17 species, occupied 37.0% of all recorded species), edible leaves (13 species, – 28.2%), edible leaves and fruits (5 species, – 10.9%), edible leaves and shoots (3 species, 6.5%), edible core (3 species, – 6.5%), edible leaves and flowers (2 species, – 4.3%), edible seeds, edible fronds, as well as shoots and flowers together (1 species, – 2.2%). The last group includes plants with edible leaves and fruits, leaves and shoots, leaves and flowers, shoots and flowers. The various plant parts of edible wild plants such as stems, leaves, flowers, fruits, etc., are either used fresh such as raw vegetables, ripe fruits, or jelly, or in cooked form, i.e., boiled, cooked soup, roasted, grilled, fried, or as oil, condiment, pickles, etc. Out of 46 species recorded, 25 species were consumed in fresh form whereas 21 species were consumed in cooked form, i.e., boiled, cooked soup, fried, etc., and eight species were utilized in both ways.

**Table 2. Information about the informants**

	Character	Number	Percentage (%)
Sex	Male	25	62,5
	Female	15	37,5
Age	< 15	0	0
	15 – 25	8	20
	26 – 35	12	30
	36 – 50	15	37,5
	> 50	5	12,5

The interviews were made face-to-face with 60 local people. However, many of the women living in the villages avoided giving their names. Therefore, 40 recorded names were presented in the catalog of source people. The ages of the informants varied from 15 to more than 50 years and most of them were over 35 years old. The age of the youngest informant was 15 and the oldest was 58. Over 62,5 % of informants were the man (Table 2).

The adult man mainly carry out the collection of wild foods. They often go in groups to forests at a greater distance from the homestead undertake the collection of wild foods. Nowadays, it has been noticed that the traditional method of collecting food plants is in significant decline. It is because of the lack of interest of younger generation to learn the skills from older people as they prefer food found in the local market rather than collection in the forestry. This is also one of the reasons for declining the traditional knowledge on collection and utilization of wild foods in the Vietnam.

## Conclusion

Wild food plants are used as common household food and make a substantial contribution to the food security of the tribal people in many parts of Doong Village. Besides, as pollution occurs in many places, and as many farmers apply large volumes of pesticides to cultivated vegetables, many wild vegetables are considered as safer for humans. This result revealed that wild edible plant species hold an significant role in food security in rural mountainous areas, particularly in developing countries.

**Acknowledgment:** Authors are thankful to the families in Tan Trach Village for providing information on wild edible plants and co-operation during the entire study and field work. The studies, the results of which are presented in this paper, were supported by Ministry of Science and Technology of Vietnam (in the National Project with the label of ĐTDL.CN-35/20), and Science Funds of Quang Binh University (CS.12.2022).

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