

Using of medicinal plants by the Thai ethnic minority in Pu Hoat nature reserve area, Nghe An province, Vietnam

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ABSTRACT: The research results show that the use of medicinal plants by the Thai ethnic minority in the Pu Hoat nature reserve area, Nghe An province consists of 618 species and 137 families, 366 genera of all the parts of plants, leaves are the most used for medical treatment, stems, flowers and fruit, respectively. Medicinal plants are being used to treat 17 different groups of diseases. Among these medicinal plants, we identified that the 10 species are listed in the 2007 Vietnam Red Book.

Keywords: medicinal plants, medical treatment, Thai ethnic minority

Introduction

Pu Hoat Nature Reserve in Que Phong district, which is a mountainous area near Laos, is located in the north-west of Nghe An province. The Reserve has invaluable resources to many medicinal plants and a lot good herbalist remedies of the Thai ethnic minority people. However, because operators have no plans to make medicinal plant, resources are declining rapidly and becoming scarce. The study of plant resources has not been paid adequate attention, so we have investigated and assessed the diversity of medicinal plants in the Pu Hoat Nature Reserve, Que Phong district, Nghe An province to contribute to the conservation of indigenous medical knowledge and the sustainable forest development. This article publishes the results of research conducted in the year 2008-2014 by our research group.

Methods

Subjects

Species of higher plants having circuit are used as medicine by Thai ethnic minority people in Nature reserve Pu Hoat.

Methods

- Interviewing local mountainous people, especially oriental-style doctors to study medicinal plants and folk remedies
- Handling and preserving samples, plant samples are squeezed, pretreated in the field then analyzed, impregnated with chemicals treatment and preserved in plant museum, Biology department of Vinh University. Researching methods, establishing survey route, collecting and handling samples are based on Thin (1997).

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- Creating a list of medical plants in research area according to the system of Brummit (1992). (Scientific name is revised uniformly according to Vietnam's plants List (Ministry of Science and Technology, 2007))

- Combining interviewing people and referring to the uses of medicinal plants according to the documents of Ly (1993); Bich (2004); Ho (2008); Chi (2012) and Loi (2015).

Results

Diversity of Taxon

In Pu Hoat, we have identified 618 species, 366 genera and 137 families which belonged to 4 branches: Lycopodiophyta, Polypodiophyta, Pinophyta and Magnoliophyta (**Table 1**).

Table 1 Medicinal plants found in Pu Hoat nature reserve area

Branch	Family		Genus		Species	
	Quantity	Percentage (%)	Quantity	Percentage (%)	Quantity	Percentage (%)
Lycopodiophyta	1	1	4	1	6	1
Polypodiophyta	15	11	16	4	50	8
Pinophyta	3	2	4	1	8	1
Magnoliophyta	118	86	342	93	554	90
total	137	100	366	1	618	1

Table 2 shows that Magnoliophyta was the dominant class with large numbers of species (498), genera (294) as well as families (94). The number of species of the class Liliopsida (56) was

much lower than the branch Magnoliophyta. This shows that Magnoliopsida plays an important role in the medicinal flora and this flora nature typical tropic.

Table 2 Quantity of descents, lines and species in Magnoliophyta.

Branch	Family		Genus		Species	
	Quantity	Percentage (%)	Quantity	Percentage (%)	Quantity	Percentage (%)
Magnoliopsida	94	80	294	86	498	90
Liliopsia	24	20	48	14	56	10
Total	118	100	342	100	554	100

Usage of plant parts for medicine

When we studied the parts of plants which were used as medicinal materials in Pu Hoat,

Nghe An province, we have made a statistic as shown in **Table 3**.

Table 3 Usage of plant parts for medicine

No.	Part of plant used as medicine	Species quantity
1	Leaf	450
4	Stem	200
7	Flower	56
6	Fruit	50
3	Root	45
5	Bark	23
8	Tuber	20
9	Seed	5

Diseases treated with medicinal plants

The traditional medicine has proved that a plant can be used to treat several diseases and a disease is only completely treated when using many species of plants. Following Do Tat Loi

(2011), Vo Van Chi (2012), Do Huy Bich (2004), Tran Dinh Ly (1993), we divided the usage of medicinal plants of Pu Hoat in Nghe An province according to groups of diseases as below:

Table 4 Groups of disease treated with medicinal plants by local people of Pu Hoat in Nghe An province

Order	Disease groups	Quantity
1	Cutaneous disease (infection, ulcerate, pimple and etc.)	159
2	Diseases because of the weather (influenza, headache and etc.)	120
3	Diseases about caused by poisoning	85
4	Renal diseases (liverstone, nephritis and etc.)	50
5	Bone diseases (broken bone, sprain and etc.)	45
6	Women diseases (giving birth, matrix and etc.)	41
7	Good for health	38
8	Respiratory diseases (cough, bronchi and etc.)	28
9	Liver diseases(liver, and etc.)	15
10	Nerve diseases (paralytic, nervous and etc..)	14
11	Eyes diseases	10
12	Disease of children (underfed, helminth and etc)	9
13	Animals bite	9
14	Detal diseases	7
15	Gastric diseases	6
16	Cancer (tumors and etc.)	6
17	Others	5

Table 4 indicates that local people used many plant species to treat cutaneous (infection, ulcerate, pimple etc.), and then, diseases caused

by weather (influenza, headache etc.), diseases caused by poisoning.

Endangered species of medicinal plants founded in Nghe An province

According to the Vietnam Red Book (Ministry of Science and Technology, 2007), we

determined 10 medicinal plant species which need priority for conservation in mountainous areas of Pu Hoat, in Nghe An province (**Table 5**).

Table 5 Endangered species of medicinal plants found in Nghe An province and listed in Vietnam Red Book

No.	Scientific name	Vietnamese name	Status (Vietnam Red Book, 2007)
1	<i>Disporopsis longifolia</i> Craib	Hoàng tinh cách	EN
2	<i>Drynaria fortunei</i> (Kuntze et Mett.) J.Sm.	Bổ cốt toái	EN
3	<i>Rauvolphia micrantha</i> Hook.f.	Ba gác lá mỏng	VU
4	<i>Stemona tuberosa</i> Gagnep.	Bách bộ đứng	VU
5	<i>Smilax elegantissima</i> Gagnep.	Kim cang thanh lịch	VU
6	<i>Smilax glabra</i> Roxb.	Thổ phục linh	VU
7	<i>Tacca subflabellata</i> P.P.Ling et C.T.Ting	Râu hùm Việt	VU
8	<i>Cibotium barometz</i> (L.) J. Sm.	Cầu tích	VU
9	<i>Ardisia silvestris</i> Pitard	Khôi tía	VU
10	<i>Paris polyphylla</i> . var. <i>chinensis</i> (Franch.) Hara.	Bảy lá một hoa	CR

Conclusions

Medicinal plants in mountainous areas of Pu Hoat in Nghe An province were identified as following: 618 species, 366 genera, 137 families. Of these, the dominant branch was Magnoliophyta including 554 species (90%).

The parts of plants were the most frequently used as medicines were leaf (450 species), the Stem (200 species), flower (56 species).

The group of diseases which were treated with medicinal plants were Cutaneous (infection, ulcerate, pimple...) next are diseases because of the weather (influenza, headache...), diseases about..... poison...

Ten medicinal species were determined as endangered species and need priority for conservation.

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