DIVERSITY OF MEDICINAL PLANT RESOURCES USED IN SOME ETHNIC MINORITY COMMUNITIES IN YEN NINH COMMUNE, PHU LUONG DISTRICT, THAI NGUYEN PROVINCE

Nguyen Thi Thu Hien[1], Duong Van Hung[2], Nguyen Hai Hoa[3], Dang Hoang Vuong[4]

[1]*Thai Nguyen University of Forestry and Agriculture*

[2]*The Center for Agricultural and Forestry planning in Bac Giang province*

[3,4]*Vietnam National University of Forestry*

SUMMARY

This research was conducted to assess the diversity of medicinal plant resources in Yen Ninh commune, Phu Luong district, Thai Nguyen province. The results of research have identified initially 149 species of medicinal plants in 137 genera and 74 families, which the ethnic minority communities have used for diseases prevention and treatment. There are five main life forms of the medicinal plants, including herbaceous (53.02%), vines (19.46%), small wood trees (14.09%), shrubs (6.71%) and moderate wood trees (6.71%). These medicinal plants were found in many types of habitats, including forests, gardens, hills and streams. Regarding plant materials used as medicine, leaves, roots and whole plants are common used components. The results show that there are 22 groups of diseases which could be cured by the experience of using medicinal plants of some ethnic minority communities in the study area, of which 7 groups of diseases occupy the highest rate including weather sickness, osteoarthritis, stomach disease, respiratory diseases, skin diseases, wound diseases, heat. There are six endangered medicinal plants in Yen Ninh commune, Phu Luong district, including: *Nervilia fordii* Schultze, *Fibraurea tinctoria* Lour, *Cycas revoluta* Thunb, *Rauvolfia verticillata* (Lour.) Baill., *Tinospora capillipes* Gagnep, *Ardisia silvestris* Pit.

Keywords: Diversity, medicinal plants, Phu Luong district, Thai Nguyen province, Yen Ninh commune.

1. INTRODUCTION

Vietnam is a country with three-quarters of mountainous areas, rich in medicinal plant resources and diversity of ethnic groups (54 ethnic groups across the country). Most of the groups are ethnic minorities with about 24 million people accounted for over one third of Vietnamese population (Tran Thuy et al., 2005). Such diversity of the people, soil, climate, customs and culture in each ethnic community has provided great medicinal knowledge and experience in using plants as medicine.

Through the folk experiences of herbalists in each ethnic community, knowledge of medicinal plants is passed on and handed down to next generations. Over time, medications are unique and become popular in the health care of the people. Thus, many research and medicinal plants and folk medicine knowledge conservation programs which have been carried out and brought many scientific and practical value as well as the preservation of folk medicine knowledge have been carried out and brought many scientific and practical values.

Thai Nguyen has rich natural resources, humid tropical climate, rich vegetation and abundant ethnic minorities, such as Tay, Nung, San Chi, San Diu, Dao, etc. For a long time, ethnic minorities in Thai Nguyen province have been able to cure diseases by using medicinal plants, each ethnic group has different experience in plan medicine reflecting

their identifies. Among them, the Tay and San Chi ethnic minority in Yen Ninh commune, Phu Luong district also have unique experiences in using medicinal plants. However, due to slash and burn cultivation method applied by many ethnic communities as well as the uncontrolled harvesting and trading situation, the medicinal plant resources have been decreased over time. Although these sort of medicinal plants have been used by the Tay and San Chi ethnic for a long time in preventing and treating effectively some types of diseases, little is known about the biological activity and scientific knowledge of the medicine. Hence, the study on "Diversity of medicinal plant resources used in some ethnic minority communities in Yen Ninh commune, Phu Luong district, Thai Nguyen province" is essential for understanding and protecting the biodiversity as well as using of these medicinal plant resources more effectively.

2. RESEARCH METHODOLOGY

Specimen collection: Specimens were collected based on the method described in Nguyen Nghia Thin (Nguyen Nghia Thin, 1997).

Interview method: The research's questionnaires based on information from the community's medicinal plants and the Institute of Medicinal Materials (Institute of Medicinal Materials, 1993) were used to gather relevant information. The participants included herdsmen, cynics, local people who have experience of using traditional medicine remedies of ethnic communities. Collected information about medicinal plants includes common name, ethnicity; model number; life forms; living environment; used parts as medicine (stem, roots, flowers, fruits, seeds, etc.); medicinal uses of medicinal plant.

Identification of the species name: Identification of the tree species was conducted by two main steps: (i) identification in the field; (ii) using the knowledge and experience of experts and reliable sources that have been re-examined, including identification courses, descriptions in the Vietnam Herbarium (Pham Hoang Ho, 2001), Dictionary of Vietnamese medicinal plants (Vo Van Chi, 2012), Vietnamese herbs and herbs (Do Tat Loi, 2005), List of Vietnamese plant species (Center for Science and Technology - National University of Hanoi and Institute of Science and Technology - Vietnam Academy of Sciences, 2006).

Medicinal plant resources diversity assessment: Based on plant research described by Nguyen Nghia Thin (Nguyen Nghia Thin, 2007).

Endangered medicinal plants level assessment: Identifying preserved medicinal plants in the study area according to Vietnam Red Book (Ministry of Science and Technology, 2007), Decree 32 of the Government of Vietnam (Government of Viet Nam, 2006), Red List of Vietnamese Medicinal Plants in the Medicinal Plant Handbook to be Protected in Vietnam (Nguyen Tap, 2007).

3. RESULTS AND DISCUSSION

3.1. Taxonomic diversify of medicinal plant resources

Researching medicinal plants was based on the experience of Tay and San Chi ethnic minorities in the study area. The results showed that there were 149 plant species, which belonged to 137 genera, 74 families, are currently used by the Tay and San Chi ethnic as medicine. The results are summarized in table 1.

Table 1. Number of discovered medicinal plants in Yen Ninh commune, Phu Luong district, Thai Nguyen province

No.	Taxonomic	Family	Genus	Species
1	***Pinophyta***	***1***	***1***	***1***
2	***Magnoliophyta***	***71***	***133***	***145***
2.1	Dicotyledones	56	108	117
2.2	Moncotyledones	14	25	28
3	***Pteridophyta***	***3***	***3***	***3***
3.1	Polypodiopsida	2	2	2
3.2	Equisetopsida	1	1	1
	Total	**74**	**137**	**149**

Table 1 shows that there are 145 species in Magnoliophyta found (97.32% of total species) in 133 genera (accounting for 97.08% of the total) and 71 families accounting for 95.94% of the total), whereas there are 3 species in Pteridophyta in 3 genera and 3 families used as medicine. In addition, there is a species in Pinophyta has been used as medicine (Cycas revolute), accounting for 0.67% of the total number of found species. The common use of Magnoliophyta for medicine is probably due to the fact that the flora in the study area is mainly Magnoliophyta, which are common in the surrounding hamlets, hills, rivers and streams. Therefore, these species are more common species having chosen to make drugs than other plants.

Magnoliophyta plays a particularly important role in the medicinal plants and the research analyzed the composition of the taxon levels in the two layers of Magnoliophyta including Dicotyledones and Monocotyledones. The results of the specific numbers and percentages are shown in table 2.

Dicotyledones have the number of family, genus, species used as medicine are predominant over the Moncotyledones. Dicotyledones have 117 species, accounting for 78.52%; 108 branches, accounting for 78.83% and 56 families, accounting for 75.67% of the total number of species. The valuable species are: *Achyranthes bidentata* Blume used to treat hepatitis, nephritis, *Fibraurea tinctoria* Lour used to treat stomach, inflammation, sedation...

Table 2. Number of family, genus, species belonging to 2 classes in Magnoliophyta in Yen Ninh commune, Phu Luong district, Thai Nguyen provice

Magnoliophyta	Family		Genus		Species	
	Number	Percentage	Number	Percentage	Number	Percentage
Dicotyledones	56	80	108	81.2	117	80.69
Moncotyledones	14	20	25	18.8	28	19.31
Total	**70**	**100**	**133**	**100**	**145**	**100**

Table 2 shows that Moncotyledones contain only 28 species (19.31% of Magnoliophyta), 25 genera (18.8%), 14 families (20%). Although it is not a large proportion, Moncotyledones also has some valuable trees such as *Nervilia fordii* Schultze for tuberculosis, bronchitis; *Homalomena occulta* Lour for joint pain, sedation, kidney failure; *Pandanus tectorius* Sol effect heat, detoxification, diuretic, milk benefits, etc.

Thus, it can be seen that the some species in Magnoliophyta, especially the Dicotyledones species, accounting for a large proportion and play an important role in healing with plan by the Tay and San Chi ethnic communities in Yen Ninh commune.

Some medicinal plants in the study area were showed in figure 1.

(a) *Stephania glabra* (Roxb.) Miers

(b) *Ricinus communis* L.

(c) *Leonurus japonicas* Houtt

(d) *Achyranthes bidentata* Blume

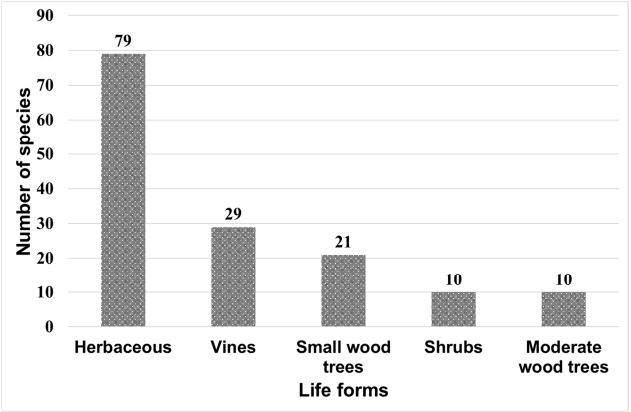
(e) *Amomum villosum* Lour

(f) *Heliciopsis Lobata* Sleumer

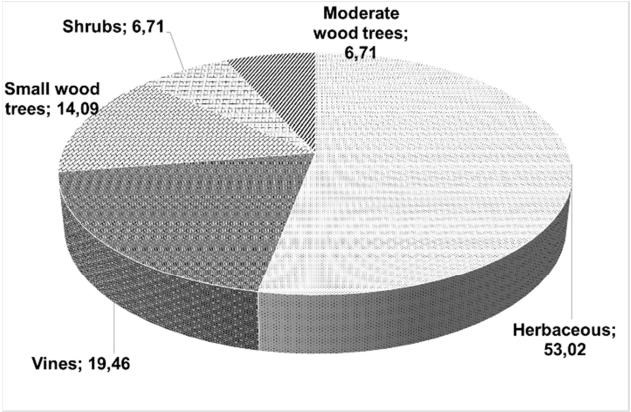
Figure 1. Some species of plants used as medicine in Yen Ninh commune, Phu Luong district, Thai Nguyen provice

3.2. Diversity of life forms of medicinal plant resources

The diversity of life forms of medicinal plants in the study area is shown in figure 2.



(a)



(b)

Figure 2. Diversity of life forms of medicinal plants in Yen Ninh commune, Phu Luong district, Thai Nguyen provice

(a) Number of species; (b) Percentage of species

The results in figure 2 demonstrated that most of the medicinal plants used by the Tay and San Chi ethnic communities are herbaceous, with 79/149 species (53.02% of all medicinal plants) mainly belonging to Asteraceae and Lamiacese family; following by the vines life forms with 29/149 species (19.46%), this species mainly belong to Menispermaceae family which have been used to treat diseases such as gastric ulcer, occlusion milk, painful swelling, sedation, bone pain and so on. In addition, the species of Vitaceae are also used to treat gastric ulcer, bronchitis, digestive good; the third was small wood tree species with 21/149 species (14.09%), are in the Dicotyledones, represented in this group are Euphorbiaceae and some species Apacynaceae, Lauraceae, etc. The least species were shrubs and moderate wood trees which is 10/149 species (6.71%). Shrubbery is a species in Verbaceae used to treat diseases such as bone pain, inflammation of the colon, hemorrhoids, boils, scabies, fever, etc. The life forms as moderate wood trees are mainly species of Lauraceae, Araliaceae, Fabaceae which have been used to treat diseases such as bone bones, sleep deprivation, anti-inflammatory, fatty acids, menstrual bleeding, bronchitis.

In general, the above data proved that the experience of using medicinal plants as medicine by Tay and San Chi in the study area is very diverse and abundant.

3.3. Diversity of habitat of medicinal plant resources

Habitats classification is based on terrain, land, climate where the medicinal plants grow. Medicinal plants in the study area have the following habitats:

- Hills: trees live in hills, wild hills, dusty fields, foothills;
- Gardens: trees live in the garden, the pond, around the village;
- Forests: trees live in dense forest, secondary forest, forest edge;
- Near streams: trees live near flowing water, near streams, rivers, wetlands.

Table 3. Distribution of medicinal plants in different habitats in Yen Ninh commune, Phu Luong district, Thai Nguyen provice

No.	Living environment	Species	Percentage
1	Forests	84	56.37
2	Gardens	56	37.58
3	Hills	33	22.14
4	Along stream, rivers, and wetlands	13	8.72

(Note: The percentages in the table are more than 100% because some species can live in different environments)

The results in table 3 indicated that:

- A number of species distributed in the forest are relatively high with 84 species (accounting for 56.37% of the total number of collected species) and most of the species are distributed in deep forests, for example: *Eclipta prostrata* L. used as a tonic for postnatal women, *Litsea cubeba* for treating eye pain, blood tonic, furuncle, ulcer, *Heliciopsis Lobata* (Merr.) Sleumer for the treatment of rheumatism, pain, kidney stones, eczema, *Eurycoma longifolia* for irregular menstruation, bleeding root, scabies, boils, joints, etc.

- Meanwhile, the frequency of finding precious medicinal plants is lower than the past, even some endangered species only could be found in primary forests such as *Nervilia fordii* Schultze for the treatment of tuberculosis, bronchitis, *Homalomena occulta*

Lour. for joint pain, sedation, kidney failure, *Achyranthes bidentata* Blume, inflammation of the kidney, etc. Being aware of the fact that medicinal plants in the forest have been in danger situation because of over-exploitation for trading and exporting to China, many herbalists and local people grew the medicinal plant in their garden with 37.58% of medicinal plants distributed in the gardens in the study area.

- There were 33 species of medicinal plants found in hills at 22.14% of the total species in the study area, such as: *Ocimum gratissimum* L. to treat headache and sunburn, *Xanthium strumarium* L. is used to treat gastritis, digestive disorders, boils, etc., *Stemona tuberosa* Lour for detoxification, liver, hypotension, cough, etc.

- The number of species which found along streams were low, with only 13 species (accounting for 8.72% of total species). They are mainly moisturizing species such as: *Phyllanthus reticulatus* Poir has the effect of snakebite, blood pressure, cough, pulmonary tuberculosis, *Polygonum chinense* L. to treat cough, colitis, detoxification, heat bar, melasma in children, etc.

3.4. Diversify of used parts of medicinal plants

The current use of plant materials for medicine based on the experience of the Tay and San Chi ethnic minorities in Yen Ninh commune are shown in table 4.

Table 4. Diversity of plants' parts used as medicine by Tay and San Chi in Yen Ninh commune, Phu Luong district, Thai Nguyen provice

No.	Used parts	Species	Percentage
1	Leaves	52	34.90
2	Whole plant	48	32.21
3	Roots	41	27.52
4	Stem	25	16.77
5	Fruits	14	9.39
6	Bark	7	4.70
7	Sap	1	0.67

(Note: The percentages in the table are more than 100% as some species may use different components for drug use)

Table 4 shows that, Tay and San Chi ethnic people commonly use seven parts of the medicinal plants. In particular, leaves are the most common component used for medicine with 52 species (accounting for 34.49% of the total species). Leaves are generally collected from the living plants without cutting down the trees, hence medicinal plants can be used for long term, which helps to protect the medicinal plant resources. There were 48 species (accounting for 32.21% of total species) that the local people can use whole parts of the plant for medicine. Roots, stem and sap were also used for medicine with the number of species found in this study area were: roots with 41 medicinal plant species (27.52%); stem with 25 medicinal plants (accounting for 16.77%); and the lowest is sap with 1 species (0.67% of total species), it is *Carica papaya* L. to treat sputum, fever, diuretic.

3.5. Diversity of medicinal uses of medicinal plant resources

Based on folk experience, a medicinal plant could be effective in a disease treatment but there are some diseases requires many types of plants to treat.

The results of the survey on the diversity of medicinal plants are shown in table 5.

Table 5. Proportion of species to treat specific diseases based on the experience of the Tay and San Chi ethnic communities in Yen Ninh commune, Phu Luong district, Thai Nguyen province

No.	Treatment disease group	Species	Percentage
1	Weather sickness (flu, sunburn, headache, sickness, fever, headache, etc.)	44	29.53
2	Osteoarthritis disease (joint pain, arthritis, bone pain, lumbar spine, etc.)	42	28.19
3	Stomach disease (stomach pain, stomach ulcers, colon, etc.)	39	2617
4	Respiratory diseases (cough, throat, bronchus, lung, cough, cough with sputum, etc.)	33	22.15
5	Skin diseases (boils, scabies, ulcers, rash, urticaria, etc.)	32	21.48
6	Wound diseases (hemostasis, hematoma, swelling, disinfection, sprain, etc.)	30	20.13
7	Heat bar (cool body, cool blood, etc.)	30	20.13
8	Digestive diseases (diarrhea, constipation, abdominal distention, abdominal pain, etc.)	28	18.79
9	Kidney disease (glomerulonephritis, kidney stones, diabetes, diuretic, etc.)	25	16.78
10	Detoxification (food allergy, insect allergy, etc.)	24	16.11
11	Supplement (kidney, blood, liver, health, tonic, etc.)	18	12.08
12	Women's disease (menopause, menstrual irregularities, pregnancy control, etc.)	17	11.41
13	Cardiovascular disease (heart failure, high blood pressure, etc.)	15	10.06
14	Neurological disease (sciatica, sedation, insomnia, etc.)	12	8.05
15	Men's disease (physiological weakness)	11	7.38
16	Diseases of children (chrysanthemum, orange, yellow skin, melaleuca, etc.)	10	6.71
17	Diseases caused by animal bites (snake bite, centipede bite, etc.)	9	6.04
18	Liver disease (hepatitis, hepatomegaly, etc.)	8	5.37
19	Eye disease, nose (red eyes, nosebleeds, etc.)	8	5.37
20	Diseases of the mouth (gingivitis, tooth decay, etc.)	6	4.03
21	Burns treatment	5	3.35
22	Tumors (cancer, lymphadenopathy, mumps, etc.)	3	2.01

The results in table 5 show that the Tay and San Chi ethnic communities in the study area can use their indigenous knowledge and experience on medicinal plants to treat 22 different diseases, including infectious diseases such as liver, kidney, heart, bone, joint, intestinal, respiratory tract, etc. The number of medicinal plants used for treatment mainly are 7 specific types of diseases as follows:

- The diseases related to weather: there were 44 species out of 149 species (29.53%). These species are in families such as Fabaceae, Asteraceae, Verbenaceae, etc. Some species can be mentioned including *Pueraria thomsonii*, *Callerya speciosa* Schot, *Vignaunguiculata* sp. Cylindrica, *Gynura procumbens* L., *Leonurus japonicas*, *Herba verbenae*, etc.

- Osteoarthritis: there were 42 species (28.19%), which are family of Apiaceae, Menispermaceae, Araliaceae, Araceae, etc. For example: *Alocasia odora* C. Koch, *Homalomena occulta* Lour, *Tinospora capillipes* Gagnep, *Tinospora tomentosa* Miers, *Schefflera octophylla* Harm, *Centella asiatica*, *Cnidium monnieri* Cuss, etc.

- Stomach disease: there were 39 species out of 149 species were found (accounted for 26.17%), some popular species are: *Eleusine indica* (L.) Gaertn, *Cissus repens* Lamk, *Wedelia chinensis* (Osbeck) Merr, *Clerodendron cyrtophyllum* Turcz, *Abutilon indicum* (L.) Sweet, *Cratoxylum pruniflorum* Kurz, *Dorscorea cirrhosa* Lour, *Leonurus japonicus* Houtt., *Euodia lepta* (Spreing) Merr, etc.

- Respiratory disease: there were 33 species (22.15%), which are mainly in families: Iridaceae, Malvaceae, Asteraceae, Solanaceae, etc. Some examples are: *Physalis angulata* L., *Capsicum sp*, *Bidens bipinnata* L., *Corchorus capsularis* L.

- Skin diseases: There were 32 species (21.48%), are mainly familie: Malvaceae, Convolvulaceae, Oleaceae, Leeacea, etc. For example: *Leea rubra* Blume, *Jasminum sambac* (L.) Ait., *Ipomoea aquatica* Forsk., *Abutilon indicum* L., etc.

- There were 30 species for curing wounds (20.13%), which are families: Boraginaceae, Cucurbitaceae, Rosaceae, etc. Some species are *Sanguisorba officinalis* L., *Momordica cochinchinensis*, *Heliotropium indicum* L., etc.

- There were 30 out of 149 plant species for antipyretic, accounting for 20.13% of the total number of species. The species in this family are: Amaranthaceae, Oleaceae, Menispermaceae, Ranunculaceae, etc. Some species are *Clematis chinensis* Osbeck, *Fibraurea tinctoria* Lour, *Sanguisorba officinalis* L., *Celosia cristata*.

In general, the results proved that: the experience of using medicinal plants as well as the treatment methods applied by Tay and San Chi ethnic communities in Yen Ninh commune is very diversified and original.

3.6. Endangered medicinal plants

This research has identified the rare medicinal plants that need to be protected in the table 6.

Table 6. List of preserved medicinal plants in Yen Ninh commune, Phu Luong district, Thai Nguyen province

No.	Species	Granted regulations		
		Vietnam Red Book, 2007	Decree 32 of the Government of Vietnam	List of red medicinal plants in Vietnam
1	*Nervilia fordii* Schultze		IIA	
2	*Fibraurea tinctoria* Lour		IIA	
3	*Cycas revoluta* Thunb.		IIA	VU. B2a,b(ii, iii,v)
4	*Rauvolfia verticillata* (Lour.) Baill	VU A1a, c		
5	*Tinospora capillipes* Gagnep	VU A1c,d		
6	*Ardisia silvestris* Pit., 1930	VU A1a,c,d+2d		

(Note: VU –Vulnerable; IIA: Limit the exploitation, use for commercial purposes)

There were 6 rare endangered medicinal species belonging to 6 genera and 6 families. There were 5 genera and 5 families of Magnoliophyta and there was 1 genus and 1 family of Pinophyta. There were three species listed in the Vietnam Red Book (Ministry of Science and Technology, 2007), three species listed in Decree 32 of the Government of Vietnam (Government of Viet Nam, 2006) and one listed in the Catalog Red Medicinal Plants of Vietnam (Nguyen Tap, 2007). Specifically:

- VU level - endangered by Vietnam Red Book, including the following species:

+ *Rauvolfia verticillata* (Lour.) Baill belong to the Apocynaceae, which is used to treat high blood pressure and burns.

+ *Tinospora capillipes* Gagnep belongs to the Menispermaceae, used to treat stomach ulcers, joint pain, back pain, heat bar, detoxification.

+ *Ardisia silvestris* Pit belongs to the Primulaceae, which is used to treat stomach diseases.

- IIA level - Limit the exploitation, use for commercial purposes by Decree 32 of the Government of Vietnam, including the following species:

+ *Nervilia fordii* Schultze belongs to the Orchidaceae, used to treat tuberculosis, bronchitis.

+ *Fibraurea tinctoria* Lour belongs to the Menispermaceae, is used to treat stomach diseases, inflammation, swelling pain, sedation.

+ *Cycas revoluta* Thunb in Cycadaceae, which is used to treat kidney disease. There're also in VU level - vulnerable by the Red catalogue sources medicinal plants in Vietnam 2006.

In general, there were six threatened species

in Yen Ninh could be extinction, they are medicinal plants with high medicinal and economic value. Therefore, it is necessary to raise awareness for the local people of medicinal plants protection and prioritize the conservation of precious and rare genetic resources for a long-term.

From the above results, it has proved that this result will be an important information, which will contribute to the databases for functional departments and agencies to formulate strategies and policies for conservation and exploitation these medicinal plants on planned and sustainable, Especially rare medicinal plants that are at risk of deterioration. In addition, these results is also the scientific basis for other further research on the conservation and sustainable development of medicinal plants and the experience of using medicinal plants as medicine for treatment of Tay and San Chi in the study area

Some photos of medicinal plants that need to be protected in the study area were presented in figure 3.

(a) *Fibraurea tinctoria* Lour

(b) *Nervilia fordii* Schultze.

(c) *Cycas revolute* Thunb

(d) *Ardisia silvestris* Pit., 1930

Figure 3. Pictures of some medicinal plants need to be protected in Yen Ninh commune, Phu Luong district, Thai Nguyen province

4. CONCLUSIONS

We concluded that medicinal plant resources were abundant in Yen Ninh commune, Phu Luong district, Thai Nguyen province. These resources play a crucial role in using for medical prevention and treatments of the local people. In some main findings of this study were summarized as follows:

- Identified 149 medicinal plants species in the Pinophyta, Pteridophyta and Magnoliophyta. Among them, Pinophyta has 1 species belonging to 1 genera and 1 family; The Pteridophyta has 3 species elonging to 3 genera and 3 families; Magnoliophyta has 145 species belonging to 133 genera and 70 families that have medicinal uses.

- There were 79 species of herbaceous, 29 species of vines, 21 species of small wood species, 10 species of shrubs and 10 species of moderate wood species.

- Habitats: most of the medicinal plants are in forests with 84 species, 56 species in gardens, 33 species in hills and 13 species near streams.

- About used parts of the plants for medicine: there were 52 species' leaves, whole plant of 48 species, 41 species' root, 25 species' trunk, 14 species' fruit, 7 species' shell and only 1 species' resin could be used as medicine.

- There were 22 different groups of diseases could be treated by using the medicinal plants as Tay and San Chi ethnic minorities' methods in Yen Ninh commune.

- There were 6 endangered species need to be preserved, accounting for 4.03% of the total medicinal plants, including: *Nervilia fordii* Schultze, *Fibraurea tinctoria* Lour, *Cycas revolute* Thunb, *Rauvolfia verticillata* (Lour.) Baill, *Tinospora capillipes* Gagnep and *Ardisia silvestris* Pit., 1930.

REFERENCES

1. Vo Van Chi (2012). *Dictionary of medicinal plants in Vietnam*. Hanoi Publishing House, volume 1-2, Hà Nội.

2. Pham Hoang Ho (2001). *Vietnamese Herbs*. Young Publishers, Ho Chi Minh City.

3. Do Tat Loi (2005). *Vietnamese medicinal plants and herbs.* Hanoi Publishing House, Hanoi.

4. Nguyen Tap (2007). *Manual of medicinal plants for protection in Vietnam*. Publishing House of Non-Timber Forest Products Vietnam, Hanoi.

5. Nguyen Nghia Thin (1997). *Biodiversity Research Handbook.* Agricultural Publishing House, Hanoi.

6. Tran Thuy, Vu Nam, Nguyen Van Toai (2005). *Theory of Traditional Medicine.* Medicinal Publishing House, Hanoi.

7. Ministry of Science and Technology (2007). *Vietnam Red Book, Plant Section.* Natural Science and Technology Publishing House, Hanoi.

8. The Government of the Socialist Republic of Vietnam (2006). Decree 32/2006 on prohibiting and restricting the exploitation and use of wild fauna and flora species.

9. Research Center for Natural Resources and Environment - Vietnam National University Hanoi and Institute of Ecology and Biological Resources - Vietnam Academy of Sciences (2006). *List of plants of Vietnam.* Publishing House. Agriculture, Hanoi, Volume 2 - 3.

10. Institute of Medicine (1993). *Resource of medicinal plants in Vietnam.* Science and Technology Publishing House, Hanoi.

NGHIÊN CỨU ĐA DẠNG NGUỒN TÀI NGUYÊN CÂY THUỐC ĐƯỢC SỬ DỤNG TRONG CỘNG ĐỒNG MỘT SỐ DÂN TỘC Ở XÃ YÊN NINH, HUYỆN PHÚ LƯƠNG, TỈNH THÁI NGUYÊN

Nguyễn Thị Thu Hiền[1], Dương Văn Hưng[2], Nguyễn Hải Hòa[3], Đặng Hoàng Vương[4]

[1]Trường Đại học Nông Lâm Thái Nguyên

[2]Trung tâm Điều tra Quy hoạch Nông Lâm nghiệp Bắc Giang

[3,4]Trường Đại học Lâm nghiệp

TÓM TẮT

Nghiên cứu này được tiến hành nhằm đánh giá đa dạng nguồn tài nguyên cây thuốc ở xã Yên Ninh, huyện Phú Lương, tỉnh Thái Nguyên. Kết quả nghiên cứu bước đầu đã xác định được 149 loài cây thuốc thuộc 137 chi, 74 họ được cộng đồng dân tộc ở khu vực nghiên cứu sử dụng trong phòng và chữa bệnh cho người dân. Cây thuốc thuộc 5 dạng sống chính gồm: thân thảo (53,02%), dây leo (19,46%), cây gỗ nhỏ (14,09%), cây bụi (6,71%), cây gỗ trung bình (6,71%). Cây thường phân bố ở các dạng sinh cảnh là: sống ở rừng, sống ở vườn, sống ở đồi và sống ven suối. Trong các bộ phận được sử dụng làm thuốc thì lá, cả cây, rễ được sử dụng nhiều nhất. Nghiên cứu này đã điều tra được 22 nhóm bệnh được chữa trị bằng kinh nghiệm sử dụng cây thuốc của người dân ở khu vực nghiên cứu, trong đó có 7 nhóm bệnh chiếm tỷ lệ cao nhất là: bệnh do thời tiết, bệnh về xương khớp, bệnh về dạ dày, bệnh về đường hô hấp, bệnh ngoài da, bệnh về vết thương, giải nhiệt. Có 6 loài cây thuốc có nguy cơ bị tuyệt chủng đã được ghi nhận tại xã Yên Ninh, huyện Phú Lương, gồm có: Cây một lá - *Nervilia fordii* Schultze, cây Hoàng đằng - *Fibraurea tinctoria* Lour, cây Vạn tuế - *Cycas revoluta* Thunb, cây Ba gạc - *Rauvolfia verticillata* (Lour.) Baill, cây Củ gió - *Tinospora capillipes* Gagnep, cây Khôi tía - *Ardisia silvestris* Pit., 1930.

Từ khóa: Cây thuốc, đa dạng, Phú Lương, Thái Nguyên, Yên Ninh.

Received : 05/8/2018

Revised : 20/9/2018

Accepted : 28/9/2018