

DIVERSITY OF LAURACEAE FAMILY IN HON BA NATURE RESERVE, KHANH HOA PROVINCE

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SUMMARY

Lauraceae is a big plant family, distributed in the tropical and subtropical, including many different life-forms, mainly timber trees, and shrubs. This family has many important values not only for biodiversity but also for economic, ecological and conservation values. However, in Vietnam in general and Hon Ba Nature Reserve, Khanh Hoa province in particular, there is very little research on Lauraceae family. Therefore, an assessment of the plant resource of the Lauraceae family was carried out. In this study seven survey transects, 22 plots with an area of 1000 m² (25 x 40 m) passing seven elevation belts, four different forest status was established to clarify the diversity of species composition, life-form spectrum, geographical factors, use-value, conservation status, species diversity by elevation belt and forest status. The results showed that 28 species, nine genera, which add a genus, seven species were found for this area. There are three plant species of threatened were listed in Vietnam Red Data Book (2007) and two species of group IIA of Decree No.32/2006/ND-CP of the Government. The life-form spectrum of Lauraceae family was determined as SB = 28.57Mg + 28.57Me + 17.86Mi + 10.71Na + 14.28Pp. Three major geographical factors were recorded, in which the endemic factor is the most abundant with 19 species (67.86%). Among the four groups of used value, the group for timber is dominant with 44.07%, the lowest is medicine with 10.17%. The Lauraceae family distributed mainly at the elevation belt of 401 - 600 m with seven genera, 26 species (35.13%). At IIA status has a most diverse number of species with 11/28 species.

Keyword: Conservation value, Hon Ba nature reserve, Lauraceae, plant diversity.

1. INTRODUCTION

In the world, the Lauraceae family has about 2000 to 2500 species and 45 genera, including trees and shrubs, distributed in tropical and subtropical but mainly in tropical Southeast Asia, and tropical America. The Lauraceae family is economically important as medicine, timber, food, essential oils, and oils, etc (Shu Gang Li *et al.*, 2008). In addition to economic value, the Lauraceae family also has conservation value for many species listed in IUCN (2019), Vietnam Red Data Book (2007), Decree 32/2006/ND-CP of the Government.

In Vietnam, the study of the Lauraceae family conducted by several authors such as Nguyen Kim Dao (2003) found 280 species 21 genera widely distributed from North to South Vietnam, Dau Ba Thin *et al.* (2017) identified in 57 species 13 genera in Ben En National Park Thanh Hoa province, Pham Hong Ban *et al.* (2017) found 58 species and 11 genera in Pu Hoat Nature Reserve Nghe An province and Gian Tu Dung *et al.* (2017) also recorded 52 species 12 genera in Thanh Chuong Nghe An province. In general, the researches of the Lauraceae family in Vietnam are still very limited, not yet fully reflect the diversity, distribution, use-value, conservation status, etc.

Thus, the continuation of research on the Lauraceae family is necessary.

Hon Ba Nature Reserve located 30 km to the west of Nha Trang City and belongs to the administrative area of eight communes and four districts: Cam Lam, Dien Khanh, Khanh Son, and Khanh Vinh, Khanh Hoa province with the geographical coordinates: From 12°01'45'' to 12°12'00'' North latitude and from 108°53'45'' to 109°02'34'' East latitude. Hon Ba has a total area of 19,285.83 ha including three subdivisions: Strict protection zone: 9,623.51 ha; the ecological restoration area: 9,553.51 ha and the administration service area: 108.81 ha. The place has unique natural conditions and convergence of 752 species, 468 genera, 120 plant families, of which 43 species listed in the Vietnam Red Data Book (2007) (Joongku Lee *et al.*, 2014). Also in this study Joongku Lee *et al.* (2014), recorded and described 22 species, 8 genera belonging to Lauraceae family in Hon Ba. However, there is no in-depth study of the Lauraceae.

In the Hon Ba Nature Reserve, during the preliminary surveys, we have recorded many species Lauraceae family distributed in the ecological recovery area, especially in sub-area

233, 234, 238, 239, 240, 241, and 242. In the years before to the establishment of the Nature Reserve, due to the difficult terrain, forest protection and management faced many difficulties, many valuable species used and high conservation values listed in Vietnam Red Data Book (2007) and Decree 32/2006/ND-CP such as *Cinnamomum parthenoxylon*, *Cinnamomum balansae*, *Cinnamomum cambodianum*, etc. Therefore, a study of the Lauraceae family in Hon Ba Nature Reserve carried out. This study aims to identify the diversity of species composition, life-form spectrum, geography factors, use-value the status of distribution and conservation values as a basis for proposing solutions for management, conservation, and development of the Lauraceae family in the study area.

2. RESEARCH METHODOLOGY

Table 1. Coordinates of survey location

No.	Transect	Coordinates (VN2000)			
		First point of transect		Final point of transect	
		X	Y	X	Y
1	Transect 1	580500	1343900	579400	1345300
2	Transect 2	582320	1347040	581260	1345700
3	Transect 3	577710	1340350	577140	1339270
4	Transect 4	582640	1339550	582390	1337510
5	Transect 5	584190	1340850	584560	1339520
6	Transect 6	584120	1343780	582800	1343230
7	Transect 7	584750	1342950	583300	1342130

2.2. Data analysis

Plant specimens were determined by the method of morphological comparison. The identification of plant specimens was made based on the major literature such as Pham Hoang Ho (1999), Nguyen Tien Ban (2000), Nguyen Kim Dao (2003).

Assess species diversity and geographical factors based on the method of Nguyen Nghia Thin (1997). Assess the diversity of life-forms spectrum was made based on Raunkiaer's method (1934). Identification of the usage value of plant species based on documents: 1900 useful plants in Vietnam (Tran Dinh Ly, 1993), Vietnamese medicinal plants and medicine (Do Tat Loi, 2004), List of Vietnamese plant, Volume II, Lauraceae (Nguyen Kim Dao, 2003). Assess the conservation status of the Lauraceae family

This research was conducted from June 2017 to December 2017 in Hon Ba Nature Reserve, Khanh Hoa province.

2.1. Field work

Collecting field data on seven transects through all elevations and forest status of the study area. The width of transect is 10 m, and the length of transect is from 4 to 6 km. On the survey transects, we established 22 plots of area 1000 m² (25 m x 40 m). Sample plots were established to study the influence of elevation belt and forest state on the species composition of the Lauraceae independently of each other. Of which, 14 plots were established at seven elevation belts (Each elevation belt 2 plots); 8 plots were established in four forest status (Each state 2 plots). Then collect specimen, photos, and information about Lauraceae family.

based on the Vietnam Red Data Book (2007), Decree 32/2006/ND-CP of the Government.

Assess the diversity of the Lauraceae family according to elevation based on documents of Thai Van Trung (1978), topographic map of Nature Reserve, and GPS. Method of assessing the diversity of Lauraceae family according to forest status: based on the current forest map of Nature Reserve and by Article 8, Circular No. 34/2009/TT-BNNPTNT of the Ministry of Agriculture and Rural Development: Regulate criteria for identifying and classifying forests (2017); Mapinfo 11.5 software and GPS.

3. RESULTS

3.1. Species composition of the Lauraceae

A total of 28 species belonging to 9 genera, and identified geographical factors, life-forms, and use-value were recorded in Hon Ba Nature Reserve. The result is presented in Table 2.

Table 2. Plant species composition of the Lauraceae family

No.	Scientific name	Vietnamese name	Geographical factor	Life-form	Use-value
Gen 1. <i>Actinodaphne</i> Nees		Bộp			
1	<i>Actinodaphne rehderiana</i> (Allen) Kosterm.	Bộp rehder	6	Pb	M, T
Gen 2. <i>Beilschmiedia</i> Nees		Chấp			
2	<i>Beilschmiedia foveolata</i> Merr.	Chấp lửa	6	Na	M, T, E
3	<i>Beilschmiedia percoriacea</i> C. K. Allen	Chấp dai	6	Na	M, T, E
4	<i>Beilschmiedia tonkinensis</i> (Lecomte) Ridl.	Chấp bắc	6	Na	M, T, E
Gen 3. <i>Cinnamomum</i> Schaeff.		Quế			
5	<i>Cinnamomum balansae</i> Lecomte* (+)	Vù hương	4.1	Me	T, Oil
6	<i>Cinnamomum cambodianum</i> Lecomte*	Re cam bốt	6.1	Me	T, Oil
7	<i>Cinnamomum curvifolium</i> (Lam.) Nees (+)	Quế ô được	4.2	Me	T, Oil
8	<i>Cinnamomum iners</i> Reinw. ex Blume	Quế rừng	4	Me	
9	<i>Cinnamomum parthenoxylon</i> (Jack.) Meisn.* (+)	Re hương	4.2	Me	T, Oil
10	<i>Cinnamomum tonkinense</i> (Lecomte) A. Chev.	Quế bắc	6.1	Me	T, Oil
Gen 4. <i>Cryptocarya</i> R.Br.		Ấn hạch			
11	<i>Cryptocarya densiflora</i> Blume	Cà đuối hoa vàng	4.1	Pb	M, T
Gen 5. <i>Lindera</i> Thunb.		Lòng trứng			
12	<i>Lindera annamensis</i> H.Liu	Liên đàn Trung Bộ	6.1	Pb	E, T
Gen 6. <i>Litsea</i> Lam.		Bời lời			
13	<i>Litsea baviensis</i> Lecomte	Bời lời ba vì	6.1	Mg	T, Oil
14	<i>Litsea clemensii</i> C.K. Allen	Bời lời clemen	6.1	Mg	T, Oil
15	<i>Litsea cubeba</i> (Lour.) Pers	Màng tang	6	Mg	T, M, E, Oil
16	<i>Litsea glutinosa</i> (Lour.) C.B. Rob.	Bời lời nhót	6	Mg	E, T
17	<i>Litsea lancifolia</i> (Roxb. ex Nees) Fern. -Vill.	Bời lời thon	5.4	Mg	E, T
18	<i>Litsea mekongensis</i> Lecomte	Bời lời cừ long	6.1	Mg	E, T
19	<i>Litsea salmonea</i> A. Chev. (+)	Bời lời đỏ tươi	6	Mg	T, Oil
20	<i>Litsea viridis</i> H.Liu (+)	Bời lời xanh	6.1	Mg	E
Gen 7. <i>Machilus</i> Nees (+)		Kháo			
21	<i>Machilus cochinchinensis</i> Lecomte (+)	Kháo Nam Bộ	4.2	Me	T
22	<i>Machilus glaucina</i> A. Chev. ex H. Liu (+)	Kháo tái	4,2	Me	T
Gen 8. <i>Neolitsea</i> (Benth. & Hook.f.) Merr.		Nô			
23	<i>Neolitsea buisanensis</i> Yamam. & Kamik.	Nô buisan	6.1	Mi	T, E
24	<i>Neolitsea chui</i> Merr.	Nô trung bộ	6.1	Mi	T, Oil, E
25	<i>Neolitsea elaeocarpa</i> H. Liu	Nô dầu	6	Mi	T, E
26	<i>Neolitsea merrilliana</i> C.K. Allen	Tân bời lời Merrill	6.1	Mi	T, Oil, E
27	<i>Neolitsea polycarpa</i> H. Liu	Nô nhiều quả	6.1	Mi	T, Oil, E
Gen 9. <i>Phoebe</i> Nees		Re trắng			
28	<i>Phoebe attenuata</i> (Nees) Ness	Re trắng thon	4.2	Pb	T, Oil

Note: *: Vietnam Red Data Book; (+): additional species and genera; M: Medicinal; T: Timber; E: essential oils; Oil: Oil; F: Food; 4. Asian tropical elements (India - Malezi); 4.1. Indochina continental element - Malezi; 4.2. Tropical Asia Continent; 5. The temperate zone of North; 5.4. East Asia; 6. Endemic to Vietnam; 6.1. Close endemic Vietnam.

In this study, we added a genus *Machilus* and seven species of the Lauraceae family compared to that of Joongku Lee *et al.* (2014). In which, *Cinnamomum balansae* and *Cinnamomum parthenoxylon* listed in the Vietnam Red Data Book (2007) and Decree 32/2006/ND-CP of the Government.

The statistical results of Table 3 showed that the Lauraceae family plant biodiversity in Hon Ba Nature Reserve is lower than in several other areas: Pu Hoat Nature Reserve, Thanh Chuong District, and Ben En National Park.

Table 3. Compare the diversity of Lauraceae in Hon Ba with other regions and Vietnam

No.	Study area	Number of genera	Number of species
1	Hon Ba, Nature Reserve, Khanh Hoa province	9	28
2	Pu Hoat Nature Reserve, Nghe An province ¹	11	58
3	Thanh Chuong District, Nghe An province ²	12	52
4	Ben En National Park, Thanh Hoa province ³	13	57
5	Vietnam ⁴	21	280

Note: ¹Pham Hong Ban *et al.*; ²Gian Tu Dung *et al.*; ³Dau Ba Thin *et al.*; ⁴Nguyen Kim Dao

The species diversity of the Lauraceae family is also shown by the distribution of

species at the genera. The result is shown in Figure 1.

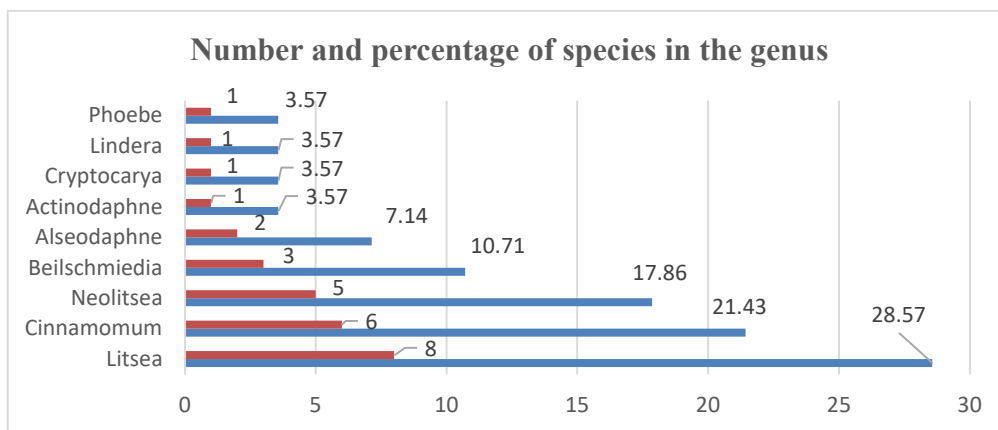


Figure 1. Number and percentage of species by genus

Among genera was recorded, *Litsea* has the most species, followed by *Cinnamomum* with six species, others genera from one to five species.

3.2. Threatened species composition

Three plant species (0.58%) of endangered, rare were found in Hon Ba Nature Reserve, while in Vietnam, there are 11 species (2.14%). In particular, *Cinnamomum balance* is in the Critically Endangered group (CR) listed in the Vietnam Red Data Book (2007) and group IIA (the group restricted from commercial exploitation) Decree 32/2006/ND-CP, *Cinnamomum parthenoxylon* belongs to group

IIA of Decree 32/2006/ND-CP, and *Cinnamomum cambodianum* belong to Vulnerable group (VU) listed in Vietnam Red Data Book (2007).

3.3. Diversity of geographical factors

The statistical results showed that Lauraceae family at Hon Ba Nature Reserve including three major geographic factors, the Asian tropical factor with 8 species (28.57%); followed by the temperate factor accounting for the lowest (3.57%); the endemic factor accounting for the highest 19 species (67.86%).

Table 4. Comparing geographical factors of Lauraceae family in Hon Ba with other regions

No.	Geographical factors	Hon Ba	Pu Hoat ¹	Thanh Chuong ²	Ben En ³
1	Tropical Asia	28.57%	44.82%	38.46%	33.33%
2	Temperate	3.57%	8.62%	1.92%	1.75%
3	Endemic	67.86%	53.45%	57.70%	61.40%
4	undefined				3.51%

Note: ¹Pham Hong Ban et al.; ²Gian Tu Dung et al.; ³Dau Ba Thin et al.

The results of diverse research on the geographical factors of the Lauraceae family in Hon Ba Nature Reserve show the dominance of endemic factors, followed by Asian tropical factor and temperate factor. The results of this study are consistent with those of Pham Hong Ban et al. (2017), Gian Tu Dung et al. (2017) and Dau Ba Thin et al. (2017) (Table 4).

3.4. Diversity of life-form spectrum

The life-form spectrum groups of the Lauraceae family in Hon Ba Nature Reserve belong to the Phanerophytes (Ph) group.

Megaphanerophytes (Mg) and Mesophanerophytes (Me) is the highest life-form spectrum of the Lauraceae family (the same 28.57%), followed by Microphanerophytes (Mi); Parasite-hemiparasite phanerophytes (Pp), Nanophanerophytes (Na) from 10.71% to 17.86%. The results of the analysis, we set up the life-form spectrum for the group of Phanerophytes (Ph) as follows: SB = 28.57Mg + 28.57Me + 17.86Mi + 10.71Na + 14.28Pp (Table 5).

Table 5. Comparison life-form spectrum of Lauraceae in Hon Ba with other regions

No.	Life-form spectrum	Hon Ba		Pu Hoat ¹		Thanh Chuong ²	
		No. of species	Percentage (%)	No. of species	Percentage (%)	No. of species	Percentage (%)
1	Mg	8	28.57	4	6.90	4	7.69
2	Me	8	28.57	41	70.69	36	69.23
3	Mi	5	17.86	9	15.52	9	17.31
4	Na	3	10.71	3	5.17	2	3.85
5	Pp	4	14.28	1	1.72	1	1.92
Total		28	100	58	100	52	100

Note: ¹Pham Hong Ban et al.; ²Gian Tu Dung et al.

In this study, there was no significant difference between the groups of life-forms. Meanwhile, the proportion of life-form spectrum groups in previous studies of Pham Hong Ban et al. (2017), Gian Tu Dung et al. (2017) have a clear difference (Table 5).

3.5. Diversity of use-values

The results of research on the use values of the Lauraceae family in Hon Ba Nature

Reserve are presented in Table 6.

Based on the major literature of Tran Dinh Ly et al. (1993), Nguyen Kim Dao (2003), Do Tat Loi (2004), four use-value groups in the Lauraceae were determined. In particular, the highest group for timber (44.07%), followed by the group for essential oils (23.73%), the group for oil (22.03%), the lowest was the group medicine (10.17%).

Table 6. Comparison of use-value of Lauraceae family in Hon Ba with other areas

No.	Use-value	Hon Ba		Pu Hoat ¹		Thanh Chuong ²		Ben En ³	
		No. of species	Percent age (%)	No. of species	Percent age (%)	No. of species	Percent age (%)	No. of species	Percent age (%)
1	Medicine	6	10.17	28	22.76	24	22.22	19	21.35
2	Timber	26	44.07	46	37.40	41	37.96	38	42.70
3	Essential oil	14	23.73	32	26.01	28	25.93	14	15.73
4	Oil	13	22.03	16	13.01	13	12.04	9	10.11
5	Food			1	0.81	2	1.85	2	2.25
6	Spice							2	2.25
7	Others							5	5.62
Total		59	100	123	100	108	100	89	100

Note: A species has 1 to many different uses; ¹Pham Hong Ban et al.; ²Gian Tu Dung et al.; ³Dau Ba Thin et al.

3.6. Species diversity by elevation

Altitude is an environmental factor that affects plant diversity. Because elevation affects too many environmental factors like solar radiation, therefore it affects temperature,

precipitation, humidity, soil properties, etc, and these will directly affect species diversity. Research results of elevation belt influence on species diversity of the Lauraceae family presented in Figure 2.

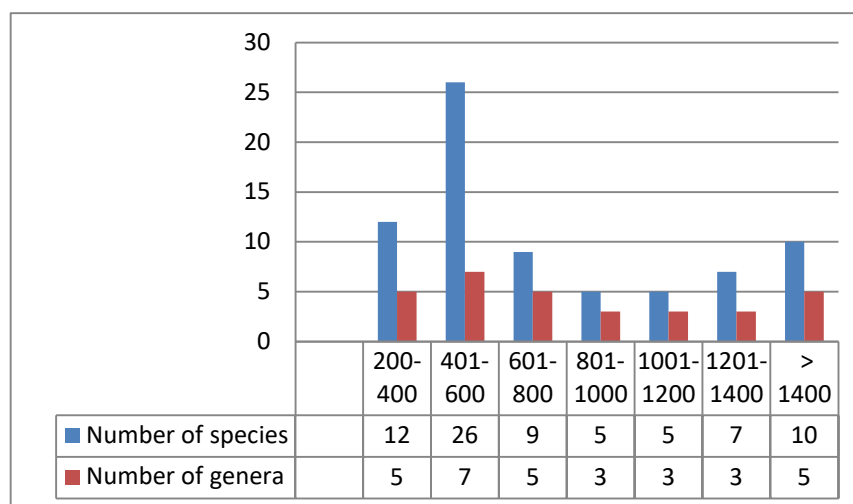


Figure 2. Distribution of plant species by elevation

The plant species of the Lauraceae family were determined distribution at all elevations from above 200 m to 1578 m above sea level. The analysis also showed that the plants at the elevation belt of 401 m – 600 m are the most diverse with seven genera, 26 species (35.13%). At other elevations belt, from 6.76% to 16.22%

for species and from 9.68% to 16.13% for the genus.

3.7. Species diversity by forest status

The research results of the diversity of the Lauraceae family by forest status are shown in Table 7.

Table 7. Plant species diversity of the Lauraceae family by forest status

No.	Forest status	No. of genera	Percentage (%)	No. of species	Percentage (%)
1	IA: Poor forest (10-100 m ³ /ha)	3	16.67	3	10.71
2	IIA: Medium forest (101-200 m ³ /ha)	5	27.78	11	39.29
3	IIIA1: Rich forest (201- < 250 m ³ /ha)	5	27.78	8	28.57
4	IIIA3: Very rich forest (>300 m ³ /ha)	5	27.78	6	21.43
Total		18	100	28	100

- In IA status: Least number of genera and species including *Beilschmiedia*, *Actinodaphne*, *Lindera* and *Beilschmiedia percoriacea*, *Actinodaphne Rehderiana*, *Lindera annamensis*.

- Status IIA: Most genera and species with *Litsea*, *Cinnamomum*, *Neolitsea*, *Beilschmiedi*, *Machilus*, *Neolitsea*, *Beilschmiedi*, *Machilus*; some of the species (39.29%) *Litsea baviensis*, *Litsea lancilimba*, *Cinnamomum tonkinense*, *Cinnamomum parthenoxylon*, *Cinnamomum curvifolium*, *Neolitsea elaeocarpa*, *Neolitsea underground*, *Beilschmiedia foveolata*, *Neolitsea merrilliana*, *Machilus cochinchinensis*.

- Status IIIA3: *Litsea*, *Cinnamomum*, *Neolitsea*, *Beilschmiedia*, *Machilus* and several species *Litsea viridis*, *Litsea clemensii*, *Cinnamomum balansae*, *Neolitsea buisanensis*, *Beilschmiedia tonkinensis*, *Machilus glaucina*.

- Status IIIA1: *Litsea*, *Cinnamomum*, *Neolitsea*, *Cryptocarya*, *Phoebe* and *Litsea cubeba*, *Litsea glutinosa*, *Litsea salmonea*, *Cinnamomum cambodianum*, *Neolitsea polycarpa*, *Cryptocarya densiflora*, *Phoebe attenuata*, *Cinnamomum iners*.

4. DISCUSSION

The results showed that the Lauraceae in Hon Ba Nature Reserve is quite diverse and abundant (42.86% of the total genus in Vietnam). However, compared to other regions, the Lauraceae family in Hon Ba is the lowest. The difference is explained by climatic elements. Studies of Pham Hong Ban *et al.*

(2017), Gian Tu Dung *et al.* (2017), and Dau Ba Thin *et al.* (2017) belong to North Central, where the climate is mild. Meanwhile, Hon Ba Nature Reserve in the South Central region. Where has two distinct seasons, long dry season, low air humidity, the rainy season often appears cloudy with low temperature, which makes Lauraceae family less diverse than others?

The life-form spectrum of Hon Ba Nature Reserve showed that Phanerophytes (Ph) dominated 100% and had no other life forms. This result consistent with studies of Pham Hong Ban *et al.* (2017), Gian Tu Dung *et al.* (2017). However, an overall analysis of the proportion of life-form spectrum groups in Hon Ba shows more uniformity than that of another region. The difference was explained by the Lauraceae family in Hon Ba Nature Reserve includes mainly woody plants, and their height is not significantly different.

Comparing the usage values of the Lauraceae family in Hon Ba Nature Reserve with other regions showed that, the highest in the Ben En National Park (7 groups), followed by Pu Hoat, and Thanh Chuong districts (the same 5 groups), lowest in Hon Ba Nature Reserve (4 groups). A comparison of the percentages between groups showed that the wood group predominates, followed by essential oils and oils. This result is consistent with the study of Pham Hong Ban *et al.* (2017), Gian Tu Dung *et al.* (2017) and Dau Ba Thin

et al. (2017). Because most of the Lauraceae are woody plants, the whole plant contains essential oils the wood is less prone to termites. These species have high economic value for essential oils, medicines, especially good wood, so they are exploited a lot in nature, the number of these species is less and scattered. Therefore, we need policies to conserve and sustainably develop this resource.

Plant diversity is influenced by environmental factors. If hypothesis plant diversity is a dependent variable and environmental factors are independent variables. We can establish a relationship between plant diversity and environmental factors by a function. In particular, plant diversity is dependent variable $f(x)$ and environmental factors (temperature, humidity, light, soil type, rainfall, altitude, etc.) are independent variables $x_1, x_2, x_3, x_4...$ This means that changing the environment will make changes in plant diversity through changes in population density, species composition, number of species, number of genera, etc. In this study, altitude and forest status are two factors used to assess their influence on species diversity. For elevation factors, in the elevation belt 400 m – 600 m, the species diversity is the highest. This result is consistent with the characteristics of the Lauraceae family because they are mainly adapted to tropical climate. For forest status, the IIA state has the highest species diversity, which means that in this state, species grow and develop best. This result is the scientific basis for proposing solutions to preserve and develop plants of the Lauraceae family in the study area.

Compared to previous studies, two new contents were made by this study, including Lauraceae family distribution according to elevation belt and forest status. However, quantitative biodiversity indicators did not apply to assess the diversity of the Lauraceae family according to elevation belt and forest status. This is also the disadvantage of this

article and opens up new research directions for future research.

5. CONCLUSION

The Lauraceae family in Hon Ba Nature Reserve, Khanh Hoa province quite diverse and abundant with nine genera, 28 species, but compared to other studies in Vietnam such as Pham Hong Ban *et al.* (2017), Gian Tu Dung *et al.* (2017), and Dau Ba Thin *et al.* (2017) is the lowest. We found three plant species endangered, rare *Cinnamomum balansae*, *Cinnamomum cambodianum*, *Cinnamomum parthenoxylon* listed in Vietnam Red Data Book (2007); *Cinnamomum balansae*, *Cinnamomum parthenoxylon* listed in Decree 32/2006/ND-CP of the Vietnamese government. There are three major geographic factors recorded, the Asian tropical element, the temperate element (the lowest proportion), and the endemic factor (the highest proportion). Life spectrum of Lauraceae family in the study area $SB = 28.57 Mg + 28.57 Me + 17.86 Mi + 10.71 Na + 14.28 Pp$. Four groups of use-values found in this study, of which timber trees predominated. The Lauraceae family distributed through 7 elevation belts and 4 different forest states. At the elevation belt of 401 m – 600 m and status IIA, where is the most suitable for the growth and development of the Lauraceae family, the other elevations and status account for a low proportion.

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ĐA DẠNG HỌ LONG NÃO (LAURACEAE) TẠI KHU BẢO TỒN THIÊN NHIÊN HÒN BÀ, TỈNH KHÁNH HÒA

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TÓM TẮT

Họ Long nảo (Họ Re hoặc họ Nguyệt quế) là họ thực vật lớn, phân bố ở vùng nhiệt đới và cận nhiệt đới, bao gồm nhiều dạng sống khác nhau, chủ yếu là thân gỗ và cây bụi. Họ thực vật này không chỉ có giá trị về đa dạng sinh học mà còn có giá trị kinh tế, sinh thái và giá trị bảo tồn. Tuy nhiên, ở Việt Nam nói chung và Khu bảo tồn thiên nhiên Hòn Bà, tỉnh Khánh Hòa nói riêng, có rất ít nghiên cứu chuyên sâu về thực vật họ Long nảo. Do đó, một đánh giá về tài nguyên thiên nhiên của họ Long nảo đã được thực hiện. Nghiên cứu này đã thiết lập 7 tuyến khảo sát, 22 ô tiêu chuẩn (OTC) với diện tích mỗi ô tiêu chuẩn là 1000 m² (25 x 40 m) đi qua 7 đai độ cao, 4 trạng thái rừng khác nhau để làm rõ sự đa dạng về thành phần loài, phổ dạng sống, yếu tố địa lý, giá trị sử dụng, giá trị bảo tồn, tính đa dạng theo đai độ cao và trạng thái rừng của Long nảo tại Khu bảo tồn thiên nhiên Hòn Bà. Kết quả nghiên cứu đã xác định được 28 loài, 9 chi, trong đó bổ sung một chi, bảy loài cho Khu Bảo tồn. Có 3 loài thực vật nguy cấp, quý, hiếm được liệt kê trong danh lục Sách đỏ Việt Nam (2007) và 2 loài thuộc nhóm IIA, Nghị định 32 của Chính phủ. Phổ dạng sống của họ Lauraceae được xác định là SB = 28,57Mg + 28,57Me + 17,86Mi + 10,71Na + 14,28Pp. Họ Lauraceae có 3 yếu tố địa lý chính được ghi nhận, yếu tố đặc hữu chiếm ưu thế với 19 loài (67,86%). Trong số 4 nhóm giá trị sử dụng được ghi nhận, nhóm cho gỗ chiếm ưu thế với 44,07%, thấp nhất là nhóm dược liệu chiếm 10,17%. Các loài thực vật thuộc họ Lauraceae phân bố chủ yếu ở đai độ cao 401 - 600 m với 7 chi, 26 loài chiếm 35,13%. Trạng thái rừng IIA có số lượng loài phân bố lớn nhất với 11/28 loài.

Từ khóa: Đa dạng thực vật, giá trị bảo tồn, họ Long nảo, Khu Bảo tồn thiên nhiên Hòn Bà.

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