

Experience of and use of compassion (*Codonopsis javanica* (Blume) Hook.F & Thoms) of ethnic Minority Communities in Van Ho District, Son La Province

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Received: 22 Aug 2022; Received in revised form: 10 Sep 2022; Accepted: 15 Sep 2022; Available online: 21 Sep 2022

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Abstract— This study was conducted with the aim of summarizing and evaluating the experiences of ethnic minority communities in the process of exploiting and using *Codonopsis javanica* (Blume) Hook.F & Thoms in Van Ho district, Son La province. The research method community interview is applied, the interviewees are those who directly use, exploit, trade and the village heads, healers, mothers, interviewed 80 households in total. The data processing method calculates the percentage based on the answer sheet and notebook. The results show that, 100% of the surveyed households know, can recognize and use *C. javanica*. This is a fairly popular product locally, but now the quantity is not much. The community clearly describes the growing place, morphology, season, knows how to use the product for health care and trade; 100% harvesting activities are carried out from the wild, breeding activities have not been carried out, only 6.25% of households have tried sowing seeds and only 2.5% of households have tried to plant some *C. javanica* around the house; 87.5% of mining households are to sell for income; 86.25% of interviewed households want to learn more experience in propagation and planting but only 75% of them are willing to plant if the output market is stable. Experience in commercializing the product is not available, the community only brings the harvested products to the local market or shops to resell. The results from this study show that the local community has a good source of knowledge about *C. javanica*, but it has not been exploited and applied to conservation and sustainable development of the species. Therefore, this is an issue that needs attention and support, combining both local and technical knowledge, both in terms of the output market so that *C. javanica* becomes a strength in supporting household economic stability.

Keywords— *Codonopsis javanica* (Blume) Hook.F & Thoms, indigenous knowledge, exploitation experience, use experience, medicinal herbs, Son La province.

I. INTRODUCTION

Indigenous knowledge is traditional knowledge that is passed on from generation to generation and between communities (Pieroni and Quave, 2005) [6]. For people living near the forest, the knowledge about recognizing, exploiting and using medicinal plants is of great importance. Because, medicinal plants not only have medicinal effects but are also a commodity sold in local markets that significantly increase livelihoods.

Codonopsis javanica (Blume) Hook.F & Thoms has long been known as a precious medicinal species in

traditional medicine in Vietnam and Asian countries such as China, Japan, Korea, Thailand. The root of *C. javanica* has high medicinal value, used as a tonic, to treat weakness, anemia, jaundice, indigestion, etc. (Nguyen Tien Ban, (2007) [1]). In Vietnam, *C. javanica* is distributed in many places such as: Lai Chau, Dien Bien, Lao Cai, Son La, Quang Nam, Kon Tum, etc. (Nguyen Tien Ban (2007) [1]; Do Tat Loi (2006) [4]; Nguyen Tap (2007) [5]). However, most people only exploit from nature, the main product is tubers, so after harvesting, it often destroys the mother plant layer. *C. javanica* is recorded in the Vietnam Red Book

(2007) under VU level [1], in group IIA in the List of endangered and rare forest plants and animals of Decree No. 06/2019 of the Government of Vietnam [2].

Scientific name: *Codonopsis javanica* (Blume) Hook.f. et Thoms. – *Campanumoea javanica* Blume

Family: Bellflowers (Campanulaceae)

Uses: Tonic. Cure anemia, jaundice, lymphatic disease, adrenal inflammation; fatigue, poor appetite, cough, stomach pain, lack of milk, loose stools, painful swollen feet (Roots).

Distribution: The tree grows naturally and is also grown in some high mountainous areas.

Van Ho district, Son La province has long recorded the natural distribution and is the place to exchange and trade many medicinal species, including *C. javanica*. The roots of *C. javanica*, which are collected in the wild, especially under the forest canopy, are very clean and healthy organic products that are popular with consumers. Together with the sharing from the community about the experience in using *C. javanica* products for health care, this product has become even more attractive. Population with a specificity, up to 85% are ethnic minorities, mainly H'Mong, Thai, Dao, Muong, Tay, this is a treasure containing a rich source of indigenous knowledge in the use of medicinal plants for daily life, including *C. javanica*. However, not all indigenous knowledge of the community is relevant to the promotion and sustainable development of *C. javanica*. Therefore, it is necessary to have summary studies to promote the advantages, recognize the limitations to overcome, and the wishes to build. The article presents part of the research results of the project code B2019-TTB-03, focusing on the experiences in exploitation and use and its potential in conservation and sustainable development practice *C. javanica* in the community in Van Ho district, Son La province.

II. RESEARCH MATERIALS AND METHODS

2.1. Research Materials

Indigenous knowledge of ethnic communities in the exploitation and use of *C. javanica* in Van Ho district, Son La province.

2.2. Research Methods

- Interview survey: Number of interviews 80 votes. Subjects were selected for interviews based on consultation with village heads, commune and district officials. Select experienced people in the village who regularly participate in activities of exploiting, trading and using medicinal herbs and village chiefs, village secretaries, healers, and mothers.

- Interviews were conducted on the basis of simple questionnaires stating a number of key questions to meet the content objectives of the research. The interview process was conducted flexibly, and local languages were used to facilitate collection information.

- Questions to be asked include: Information about interviewees (name, gender, age, education, occupation, ethnicity, address); experience in identifying *C. javanica* (morphology, flower season, fruit season, autumn); exploitation and use experience; experience in exchange and trade; experience in breeding and planting; other information such as: The village's regulations on the collection of forest specialties, the desire for development and the desire for the market, suggestions and additional open-ended questions on the topic of freedom (if any). For the management team, they will ask more questions about the status of exploitation, government solutions in protection, planting and development, effectively contributing to the economy. Objectives: To assess the habits and experiences of exploitation, use and consumption, cultivation and propagation (if any) in the community about *C. javanica*.

- The survey data were processed by mathematical statistical method in forestry on Microsoft Excel software [3]. Summarize all interview opinions on each content then give general comments on experiences in exploitation (recognition, collection, propagation, cultivation) and use (remedy, personal use, etc.) purchase. Calculate percentage by topic.

III. RESULTS AND DISCUSSION

3.1. Experience of the community in mining *C. javanica*

C. javanica is called by local people with many other names such as Cang ho (H'Mong), Man Ray Cay (Tay), but the name *C. javanica* is still the most common. Through the interview survey, 100% of the surveyed households confirmed that they knew about *C. javanica* and at least once had collected, exploited and used. In particular, people all confirmed that many years ago, *C. javanica* still had a lot, going to the forest to collect firewood, going to the fields to work in the fields, they all met a lot.

100% of the surveyed households confirmed that they could recognize the species in the wild. Of which 77.5% (62/80 votes) said that *C. javanica* usually grows in natural forests but has been exploited a lot, found in sparse forest canopy, often found on the edge of the forest, sometimes in upland fields, especially in spring (February to April), many trees regenerate in clusters, very rare in old forests where the canopy is thick, dark and moist. The remaining 22.5% (18/80 votes) said that they often

encounter *C. javanica* in grasslands, shrubs, and underground orchids; 100% of households confirmed that *C. javanica* is a herbaceous plant with a main body length of 2.5 - 3.5 m, large dust is rare, low creeping, can climb on any nearby substrate and can crawl to the ground. . When asked about the experience of identifying species, flowering and fruiting seasons, 87.5% (70/80 households) understood

and could say the period of flowering, fruit and fruit ripening, 100% of the households knew the time of the tree. lui. The collection of tubers can be carried out all year round when they encounter big dust, the experience of the community shows that it is best to harvest at the end of the year, from December of last year to March of next year, to collect better quality tubers.

Table 01: *C. javanica* interview survey results in the community

Interview content	Number of interview votes	Number of votes yes (votes)	No votes (votes)	Percentage of yes (%)	Note
Do you know about <i>C. javanica</i> ?	80	80	0	100	
C. javanica can be recognized in the wild	80	62	18	77.5	
Have harvested tuber products at least once?	80	80	0	100	
Fruit products are harvested	80	5	75	6.25	Sometime
Have you used Dandelion in your life at least once?	80	80	0	100	
Have regular use?	80	20	60	25	Make medicine, boil water, soak alcohol, sometimes for sale
<i>C. javanica</i> is available for sale	80	70	10	87.5	As often as you can harvest
Can grasp the season of fruit and growth?	80	70	0	87.5	100% know when the tree sheds leaves
Can you grasp where it grows?	80	80	0	100	77.5% commonly grows in poor natural forests, forest edges, upland fields; 22.5% only found in the savanna
Have you tried breeding?	80	5	75	6.25	Try sowing seeds in your garden
Have you tried planting?	80	2	78	2.5	Try planting in the garden
Do you think this is a tree with economic value for the family's income?	80	69	11	86.25	
Have a desire to be guided in planting techniques?	80	69	11	86.25	
Are you willing to participate in planting in the forest?	80	60	20	75	Ready to plant if the market stabilizes

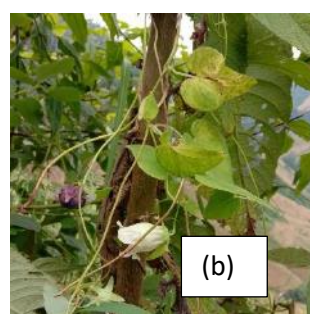
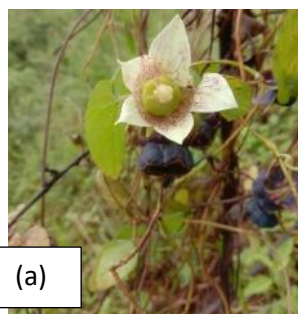


Fig.2: Flowers, fruits (a) and creeping of the *C. javanica* at the edge of the forest (b)



Fig.3. Burning of *C. javanica* stems growing extra roots when crawling on the ground



Fig.4. How people exploit *C. javanica*

A feature of *C. javanica* is that when burning the trunk of *C. javanica*, there is no climbing medium, but it has to spread on the ground, in those nodes, it can grow roots and form small tubers right there. However, when *C. javanica* grows such secondary roots, it will affect the roots (bulbs) at the main root, leading to nutritional deficiencies and small tuber quality. This is also an experience to note when growing, it is necessary to pay attention to making climbing medium for *C. javanica* to ensure the best tuber quality.

However, in the past few years, in the season of finding tubers, the amount of tubers earned is much less, mainly because of the small tubers, so the source of income is not much. Very few households experimented with breeding, accounting for 6.25% and only 2.5% of households tried to plant some *C. javanica* around the house in order to keep some for medicinal use when needed; 86.25% of interviewed households want to learn more experience in propagation and planting but only 75% of them are willing to plant if the output market is stable. The price they are paid is from 30,000 VND/kg to 50,000 VND/kg, depending on the season and year, the price is

different. People are willing to participate in forest protection and propagation so that they can meet future needs if they are given technical guidance.

From these data, it is shown that local people have only harvested from natural forests, they are aware of the value, market demand, the reality of the decline of *C. javanica*, but they are not confident and proactive. to carry out propagation and planting activities. Therefore, this is an issue that needs attention, both technical support and output market so that *C. javanica* becomes a strength in supporting local economic stability.

3.2. Experience of the community in using *C. javanica*

Results 100% of households interviewed confirmed that they had at least once used *C. javanica* for themselves or their families. *C. javanica* is a valuable medicinal herb to replenish the body, but they do not use much because they have to sell it for income.

Some of the main methods of exploitation and processing and preservation of the local people here, most of the people still use the manual method of using a hoe, knife, and spade (Figure 04) to dig out the tubers in their

soil. *C. javanica* dust, depending on the big or small dust, there will be more or less branches, an average of 1-3 branches/dust, sometimes up to 5 branches/dust for perennial bushes. Each year, there is a main harvesting season, which is around December to February next year,



when the tree has already produced all the fruit, the tree will dry out and die on the ground, leaving only the tubers in the soil. best for mining. After exploiting, if you sell it, you only need to do preliminary work and then sell it.



Fig.5: The roots of *C. javanica* are sold at the local market for tourists

If the roots are left to the family to use as medicine, they should be washed and then dried or used fresh depending on the remedy. Some simple tonic remedies with Dang ginseng such as: Cooking soup, stewing with chicken, soaking in wine (this is popular and often chosen by people). The steeping of Dang ginseng is also available for commercial purposes because it will not lose Dang ginseng and preserve the product for a long time if it is not sold immediately after harvesting. In addition, Dang ginseng is also combined with a number of herbs to create common remedies such as: Indigestion, fatigue, vomiting or diarrhea, etc. However, the formula combines all kinds of drugs that kept private because these are family secrets.

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IV. CONCLUSION

- *C. javanica* is a familiar product to the ethnic minority community in Van Ho district. The community here clearly describes the morphological characteristics, growing season, growing conditions. The community wishes to receive technical support to plant and develop species if the output is guaranteed to be stable.

- The community knows well the experience of exploiting tubers to obtain quality tubers, the exploitation of small tubers and extermination is still quite common because of economic needs. The community has good experience in using and trading. Trading activities are still very rudimentary, there are no breeding and planting activities to actively source products.

ACKNOWLEDGMENTS

The author would like to thank Ministry-level Scientific Research and Technology Development Project, Ministry of Education and Training of Vietnam B2019 – TTB – 03 for sponsoring this publication.

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