



## Research Article

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Habitat and Frequency Distribution of *Codonopsis Javanica* (Blume) Hook. F & Thoms

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**Abstract:** This study goal aims at presenting **Habitat and Frequency Distribution of *Codonopsis Javanica* (Blume)**. Research on distribution characteristics of *C. javanica* has important implications in proposing solutions on planting areas to conserve and develop species. From that fact, the article presents part of the research results of the topic B2019-TTB-03, focusing on the distribution characteristics of *Codonopsis javanica* (Blume) Hook.F & Thoms in Son La.

**Keywords:** *Codonopsis Javanica*, Habitat, Frequency Distribution , Routes, Son La Province.

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## INTRODUCTION

*Codonopsis javanica* (Blume) Hook.F & Thoms :

Identification characteristics: Herbaceous perennial, climbing stem, 2-3m long, much branched. The whole plant has white latex. Roots cylindrical, long, branched, lean, pale yellow. Leaves simple, opposite, ovate or heart-shaped, size 2-5 x 2-4.5 cm, thin, soft, pale green, underside with white villi, edges whole or serrated; peduncle 3-7cm long. Flowers are solitary in the interstitium, bell-shaped, white or yellowish, purple veined throat. Calyx 5-lobed, lanceolate, slightly fused at the base. Corolla 5 lobes, pointed triangle. Stair 5. Vote 5 cells. Berries, 5 sides, when ripe purple, gills persist. Seeds many, round, small, yellow-brown. (Pictures 103a, b).

Biology and ecology: Flowering season May-July, fruiting July-September (10). Natural propagation from seeds. The ability to regenerate from tuber roots left over at harvest is poor. The plant is moisture-loving, light-loving, but tolerant of shade. Usually grows in fertile, humus-rich soils, in open spaces and along secondary forests and upland fields, at an altitude of 600-2000 m.

## Distribution

Domestic: Son La, Lai Chau (Sin Ho, Phong Tho), Dien Bien (Tua Chua), Lao Cai (Sa Pa, Bat Xat, Than Uyen), Son La (Moc Chau, Muong La), Yen Bai

(Mu Cang Chai) , Ha Giang (Quan Ba, Dong Van, Meo Vac, Yen Minh), Cao Bang (Chong Khanh, Tra Linh), Bac Kan (Bach Thong), Thai Nguyen (Tam Dao), Lang Son (Trang Dinh), Hoa Binh (Da Bac, Mai Chau), Ninh Binh (Cuc Phuong), Thanh Hoa (Son Ba Muoi), Nghe An (Muong Long), Quang Nam (Tra My), Kon Tum (Dak To, Dak Glei: Ngoc Linh) , Lam Dong (Da Lat, Lac Duong).

World: India, China, Myanmar, Laos, Thailand, Indonesia.

Value: Precious medicinal plants are widely used in Vietnam. The roots are used as a tonic, to treat weakness, anemia, jaundice, indigestion.

Status: Regularly exploited for its roots to make medicine. Deforestation for swidden cultivation has directly reduced the natural distribution area rapidly. Natural reserves are greatly reduced (source: <https://botanyvn.com/>).



**Fig 1.** *Codonopsis Javanica*  
Source: Internet

In Vietnam, *C. javanica* is distributed in many places, but mainly in the northern mountainous provinces such as: Lai Chau, Dien Bien, Lao Cai, Son La, etc. and some southern provinces such as Quang Nam, Kon Tum, Lam Dong, etc.

Hence authors conduct this topic “**Habitat and Frequency Distribution of *Codonopsis javanica* (Blume)**”.

Men & Truong (2019) pointed Ginseng (*Codonopsis javanica*) is a traditional medicine that has been used for a long time in Vietnam and many other countries in East Asia. The research was conducted through interviews, line surveys, typical standard plots, and vegetation type determination according to UNESCO (1973). The results show that: Ginseng Party is distributed in Ho Chi Minh City. Da Lat and Duc Trong, Don Duong and Lac Duong districts; mainly on black and gray soils; the soil has an average layer of decaying mats of  $2.82 \pm 0.12$ cm and a layer of humus with a thickness of  $12.93 \pm 1.13$ cm; pH: 5.8 – 6.4; The trees grow mainly at an altitude of 1,400 - 1,800m above sea level. The tree is usually present in 3 types of vegetation I.A.9.b: Medium and high montane evergreen coniferous forests; type IV.A.1.b: Lowland shrubland and shrubland and type IV.C.1.3: Grassland with *Pteridium aquilinum* predominance. The average density of Ginseng Party is about 341.0 plants/ha (I.A.9.b) and 665.0 plants/ha (IV.A.1.b; IV.C.1.3). The important value index (IVI%) of tree species in the

distribution area of Party ginseng was also determined. Through the survey, 20 species of trees belonging to 15 families were recorded and 12 species of shrubs and fresh carpets of 11 families were recorded. The records on ecological characteristics of Ginseng Party show that it is possible to plant and develop this species under the canopy of the three-leaf conifer forest in Lam Dong.

## RESEARCH METHODOLOGY

### Research Subject

*Codonopsis javanica* (Blume) Hook.F & Thoms natural distribution in Son La

### Research Objective

Present Frequency distribution of *C. javanica* species according to survey routes in Son La

### Research Methods

- Preliminary investigation based on consultation with forest rangers at Son La Forest Protection Department selected 5 study districts (research sites): Song Ma district, Sop Cop district, Thuan Chau district, Moc Chau and Van Ho dists.
- Survey by line: In 5 districts, continue to survey the opinions of local officials (rangers, village heads) to open survey lines. Each site establishes 5 lines, total 25 survey lines.
- The survey data is processed by mathematical statistical method in forestry on Microsoft Excel software.

## RESULTS AND DISCUSSION

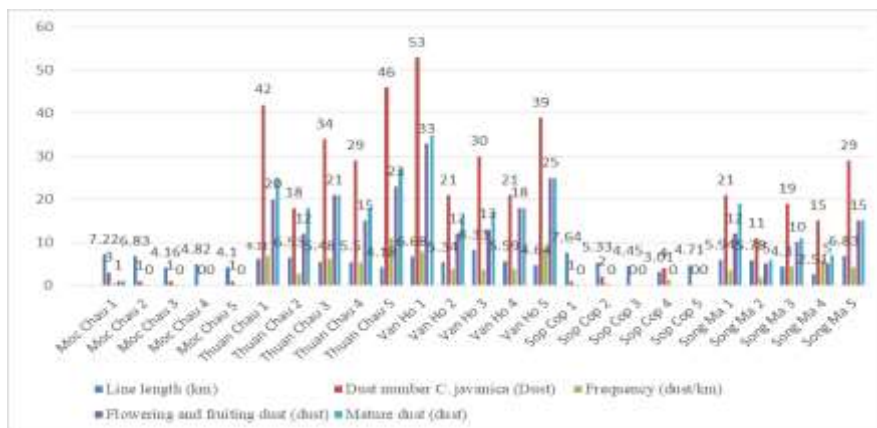
### Distribution of *C. Javanica* Species According To Survey Routes in Son La

#### Distribution According To Survey Route

First we look at below chart and see that:

- The average frequency of occurrence of *C. javanica* on the routes is 3.3 dust/km
- The rate of flowering and fruiting dust is 240/441, only 54.4%, the rate of flowering and mature dust is 240/279, accounting for 86%.
- Nam Lanh commune site did not encounter any dust during the process. investigation process
- Use of forest resources has reduced the quantity

**Chart 1.** Distribution of *C. Javanica* Species According To Survey Routes in Son La



Source: Author Analysis

**Distribution of C. javanica According To Habitat Types**

**Distribution of C. javanica by Habitat Type in Son La**

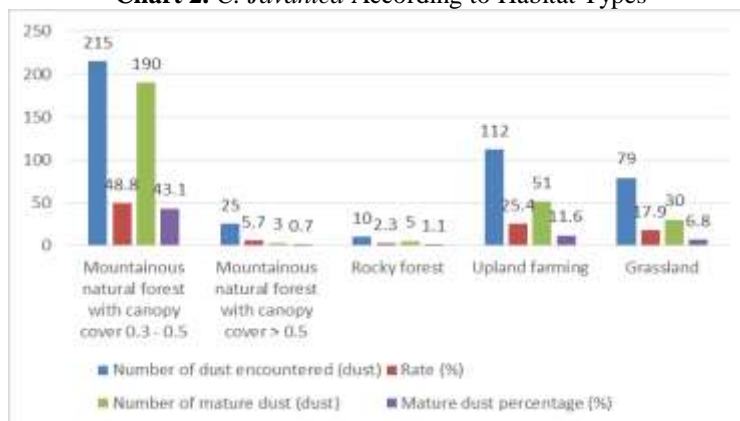
We see frequency distribution of C.javanica in below chart that:

- C. javanica occurs most in natural forest habitats in mountainous areas with canopy cover from 0.3 to

0.5 with 215 dusts, accounting for 48.8% of the dust encountered

- 190 (number of mature dust) accounting for 43.1%
- C. javanica occurs lower in natural forest habitats in mountainous areas with canopy cover > 0.5 with 25 dusts accounting for 5.7%
- 3 (number of mature dust) accounting for 0.7%

**Chart 2. C. javanica According to Habitat Types**



Source: Author Analysis

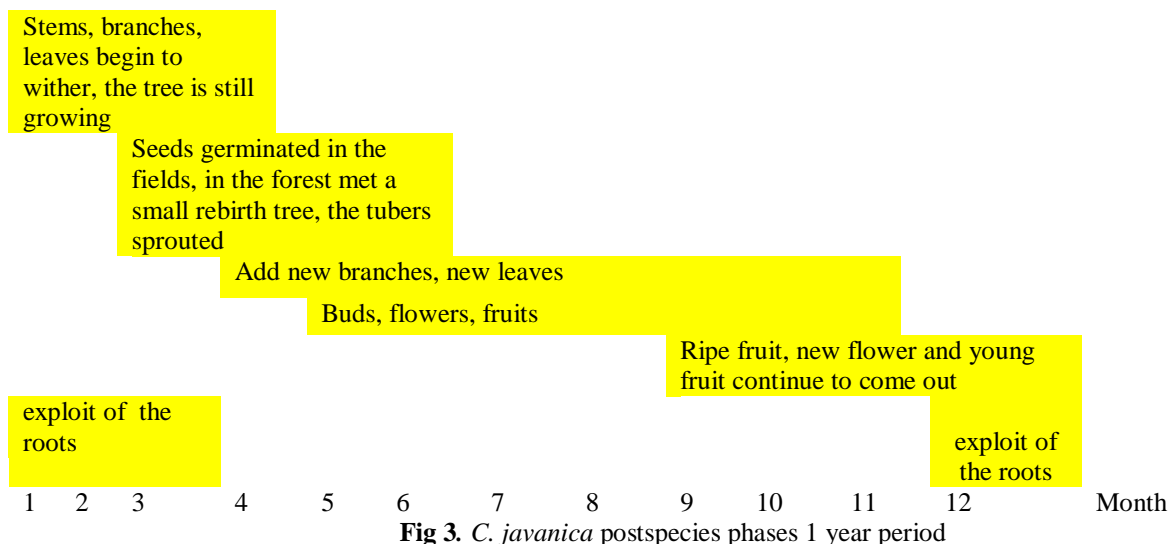
**Fig 2. Codonopsis Javanica Used in Medical**



Source: tracuuduoclieu.vn

On the basis of discussions and interviews, together with the villagers, we sketched out the

climatological phases of C. javanica in one year of growth.



*C. javanica* is a perennial herbaceous plant. The aboveground part dies out every winter. The underground part of the tuberous roots remains alive and grows over time (January to March). After that, the tip of the tuber's roots will give rise to new shoots (March to April can last until May depending on the year) and begin to grow and thrive from April to October. during this period. Ripe fruit can last from September to December

## CONCLUSION

Ngoc, N. T. B. (2022) shows that, *C. javanica* has a fairly wide distribution range along the high belt, at an altitude of  $\leq 1000\text{m}$  the amount of dust appears more than 60.1%, at an altitude of  $> 1000\text{m}$  above sea level, the number of dust appearing accounts for 39.9 %. Elevation occurs from 650 to 1150 m above sea level, in places where the soil is good, humus-rich, moisture-loving but not stagnant, not waterlogged. These are important bases for the proposal of *C. javanica* conservation and development planting areas for the locality.

### *Codonopsis Javanica* (Blume) Hook.f. et Thoms.

*Codonopsis javanica* (Blume) Hook.f. et Thoms. Vietnamese name is ginseng tree. The plant is often used as a tonic. Cure anemia, jaundice, lymphatic disease, adrenal inflammation; fatigue, poor appetite, cough, stomach pain, lack of milk, loose stools, painful swollen feet (Roots).



**Fig 4.** *Javanica*  
Source: Internet

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