

# GOVERNMENT DEGREE COLLEGE

## SHADNAGAR

### DEPARTMENT OF SERICULTURE



#### A PROJECT WORK ON

### MULBERRY AND NON – MULBERRY FOOD PLANTS

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## DECLARATION

We the following students studying B.Sc I year at Govt Degree College ,Shadnagar during the academic year 2021-22 here by declared that is our original project work On\_MULBERRY AND NON – MULBERRY FOOD PLANTS submitted under the guidance of J.KARTHIK.

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# Mulberry

- \* Mulberry trees are perennial, live for number of year either in cultivated or wild conditions.
- \* The branching nature of a plant is once again influenced by type of cultivation.
- \* Since the cost of producing of cocoon reflects the efficiency of leaf producing utilization of leaf by silkworm
- \* The mulberry can be grown under various types of climatic conditions.
- \* Mulberry leaf protein is the source for the silkworm to bio-synthesize.
- \* Type of cultivation, harvesting methods and duration of storage, season fertilizer and irrigation schedules.
- \* Thus the success of good quality cocoon yield totally depends upon proper planning and maintenance.
- \* The CSIS has recommended certain specific mulberry garden/plant.
- \* Mulberry varieties to suit the eco climatic conditions of particular state/area.

# Distribution of Mulberry

- \* The Distribution of mulberry Karnataka, Andhra Pradesh, West Bengal, Tamilnadu and Manipur States, etc.....
- \* The top under mulberry area known as Philippine variety.
- \* Kadambi [1949] reported that of the mulberry varieties were introduced into India from China, European, Japan, and Philippines.

## Mulberry Silkworm

Scientific  $\div$  *Bombyx mori*

Origin  $\div$  China

Primary food plants  $\div$

- \* *Morus alba*
- \* *Morus multicaulis*
- \* *Morus indica*.

# Defination Food Plant

## Leaves :

- \* The Leaves are alternate, rarely opposite pinnat, ptopalmate and stipulate.
- \* The Stipules are often caducous and leaves a scar.
- \* They are small and lateral forming a cup over the young bud and drop off as the bud unflod.

## Flower :

- \* The small flower are arranged basically in flower which form spikes heads, disks or shallow ~~receptales~~ receptales.
- \* In morus the male flowers are arranged in catkins and female flowers a pseudo spikes.

**Seed** : The mulberry seed is oval shaped with flat surface at the micropyle region.

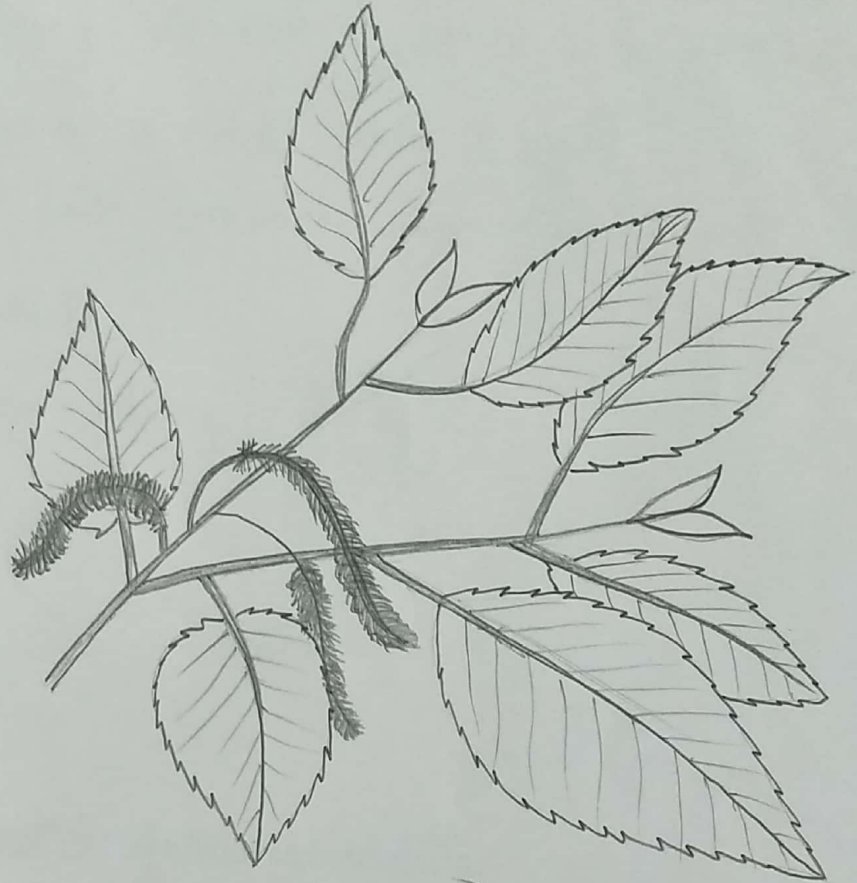
- \* The mulberry seed are available for longer period at low temperature [ $5^{\circ}\text{C}$ ] and low relative humidity.



Mulberry  
Fruit



Mulberry  
Twig



- ⇒ In non-mulberry silkworm types & their distribution
- ⇒ Silkworm again divided into 3 types
- ⇒ Non mulberry wild cultural, high employment earning potential.
- ⇒ 3 types non-mulberry
- ⇒ Tasar
- ⇒ Muga
- ⇒ eri

### \* **Tasar Silk**

**Scientific name** ∘ *Antheraea mylitta*

### **Food plant**

#### **Primary**

∘ *Terminalia tomentosa*

*Terminalia arjuna*

#### **Secondary**

∘ *Terminalia catappa*

*Zizyphus jujube.*

## Tasar Silk Distribution

- \* Tasar producing States in India are :-
- \* Jharkhand, Chattisgarh contributing 70% of the production.
- \* Andhra Pradesh, Orissa, West Bengal to the appreciable quantities
- \* While Uttar Pradesh, Maharashtra, Bihar and Madhya Pradesh are minor producing States.
- \* In Andhra Pradesh tasar growing districts are Adilabad, Karim Nagar, Warangal, Khammam and East Godavari - East Godavari



# Tasar Food Plants

## *Terminalia arjuna*

### Description of plant parts:

**Leaves:** Sub opposite

coriaceous, usually 10-15 cm in length

**Flowers:** Sessile and white coloured

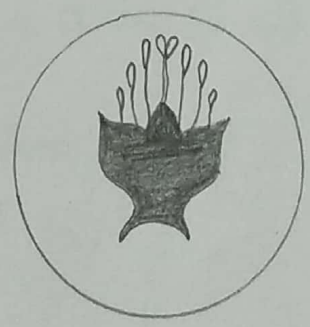
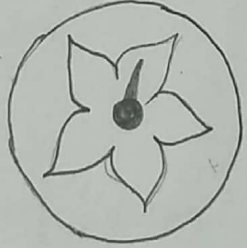
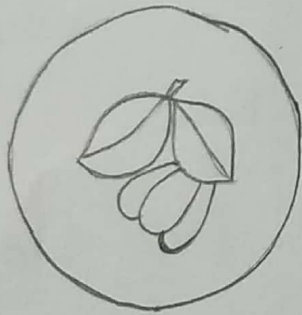
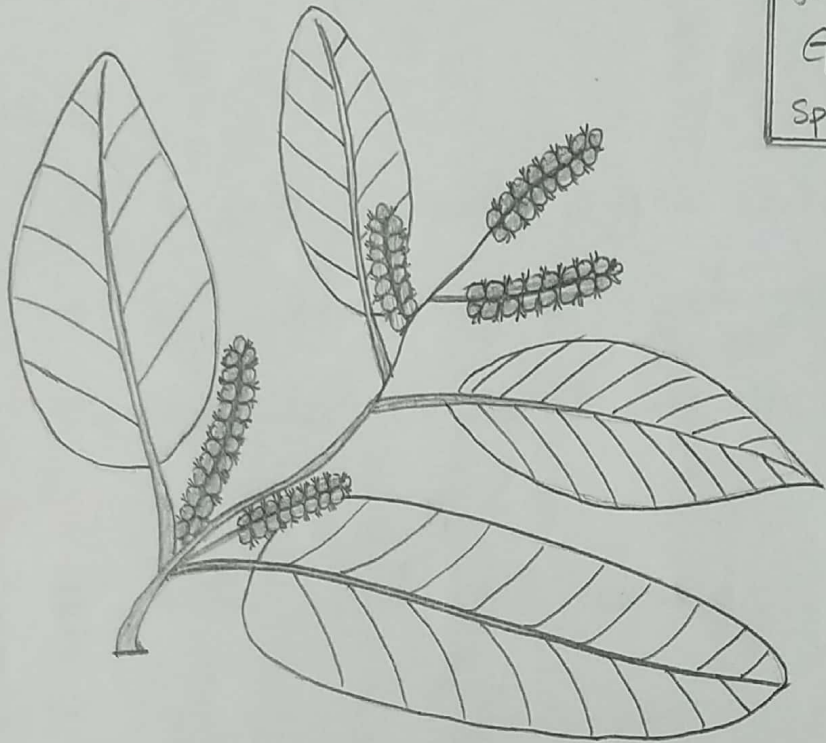
**Fruits:** Freshly 2.5 long Some what oval in shape and dark brown provided with 5-7 hard, winged angles.

**Seeds:** Exalbuminous oily fleshy.

**Bark:** Light, gray, Exfoliating in thin sheets

**Wood:** Coarse textured, Very hard, Strong and Some what lustrous.

Classification  
Order: Myrtales  
Family: Combretaceae  
Genus: Terminalia  
Species: caribaea



# *Terminalia tomentosa*

## Description of plant parts ÷

### Leaves ÷

- \* Coriaceous, usually 10-15cm in length
- \* It's upper surface is pale green and the underside is pale brown in younger stages.

### Flower ÷

- \* Sessile and white coloured.

### Fruits ÷

Fleshy 2.5 cm long, somewhat oval in shape and dark brown, provided with 5-7 hard winged angles.

### Bark ÷

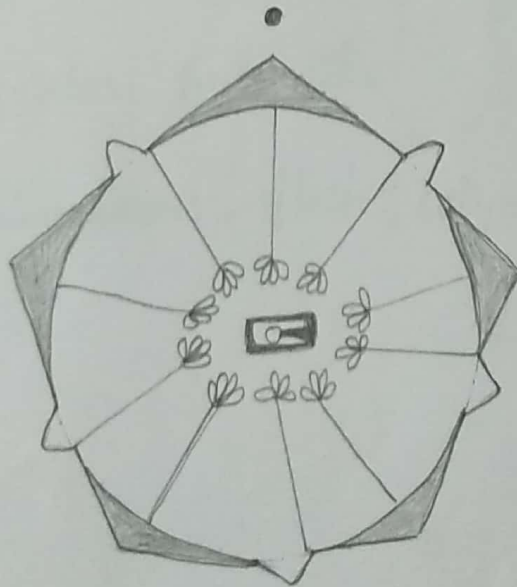
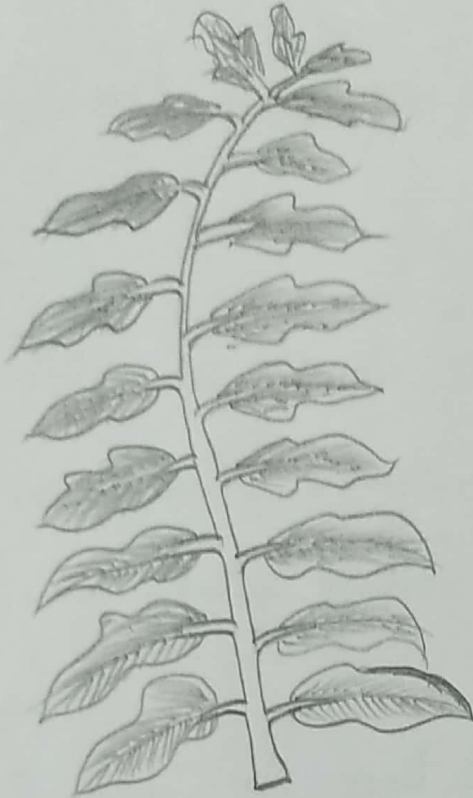
Light grey exfoliating in thin sheets.

Wood ÷ Coarse - textured very hard, strong and somewhat lustrous.

Terminalia tomentosa

Classification

Order: Myrtales  
Family: Combretaceae  
Genus: Terminalia  
Species: tomentosa



F.F ⊕ ♀ K(5) C(5) A(5) S GT

# Shorea robusta

## Description of plant parts

### Leaves :

Alternate, Simple stipulate, Oval, oblong acuminate tough, glabrous and shining when fully mature 10-25 cm in long Entire.

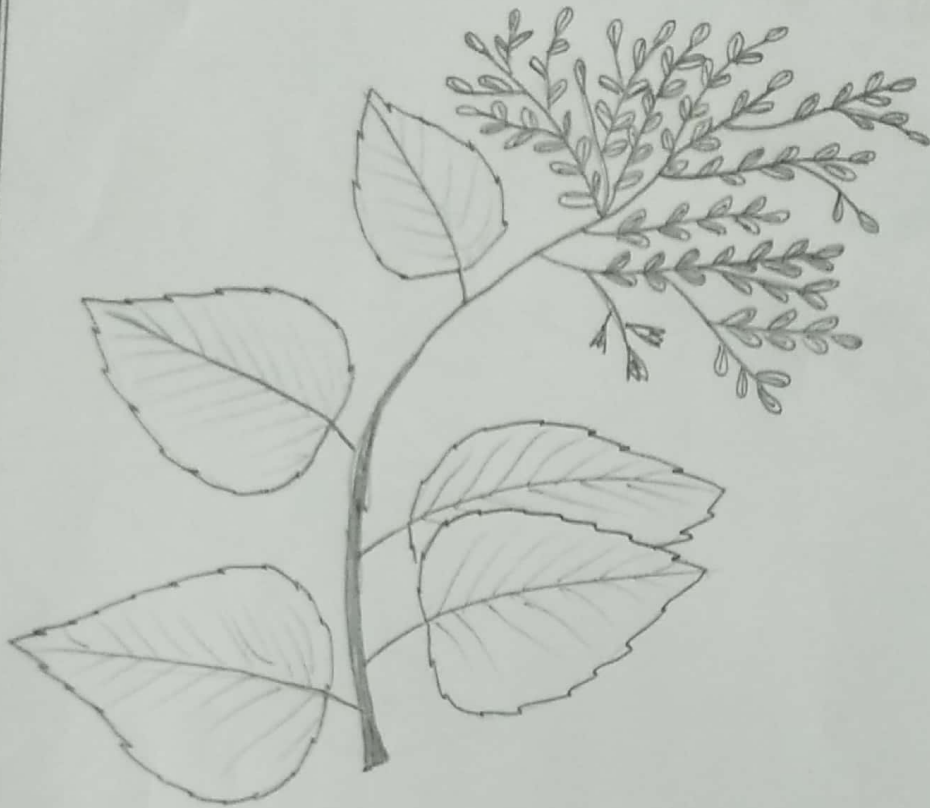
### Flowers :

Regular, bisexual subsessile, terminal and quasi-terminal racemes panicles.

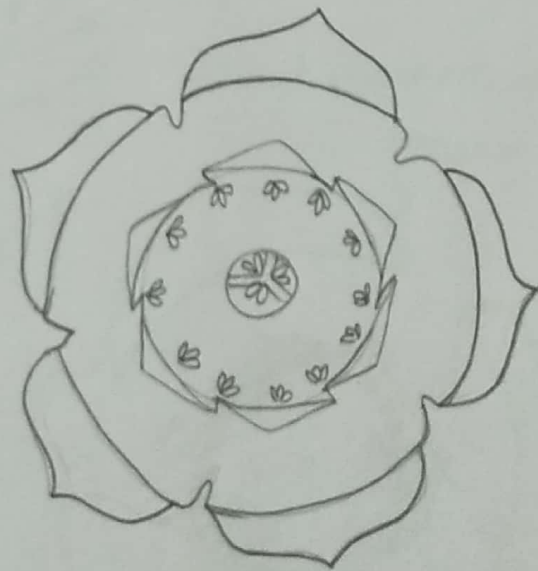
Fruits : Capsular nut like

Seeds : Exalbuminous, flesh, cotyledonous.

# Shorea robusta



Classification  
Family: Dipterocarpaceae  
Order: Theales  
Genus: Shorea  
Species: robusta



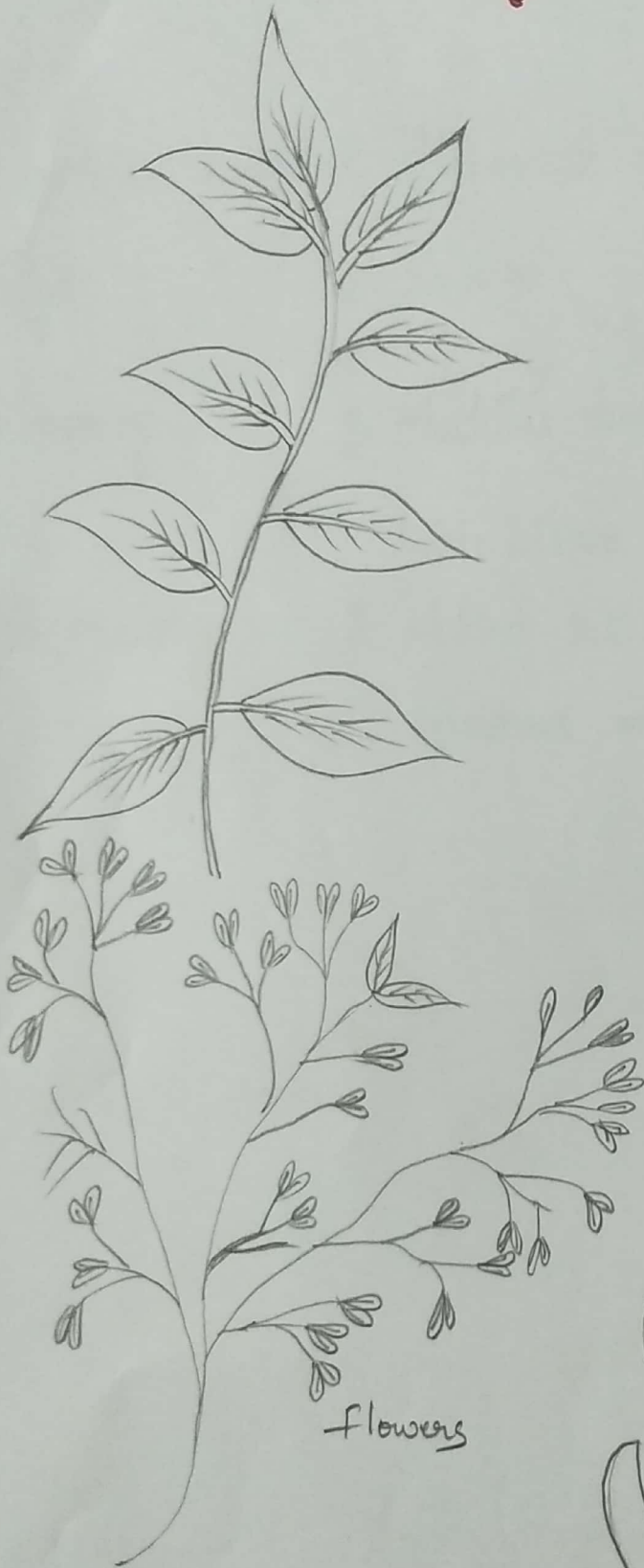
F.F.  $\odot$   $\text{♀}$   $K(5)(15)^A \infty G(3)$   
Floral Diagram.

# *Persea bonjycina* King

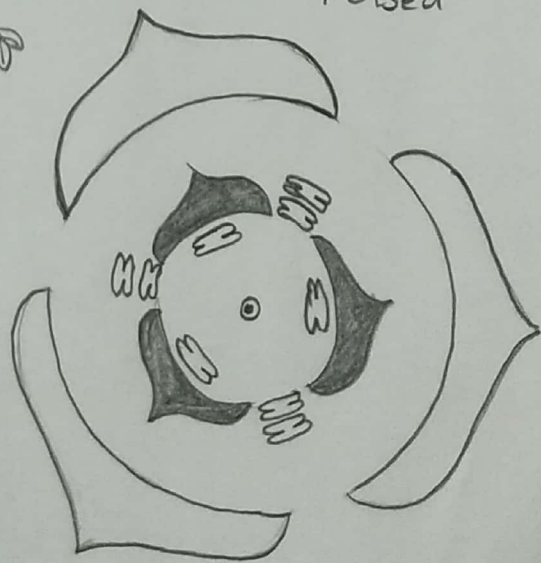
## Classification

Order : Laurales

Family : Lauraceae



Floral diagram of genus  
Persea



$F.F \ominus \overset{\sigma}{P}_3 + 3A_3 + 3 + 3G_1$

# Muga Silkworm

Scientific name ÷ *Antheraea Assama*.

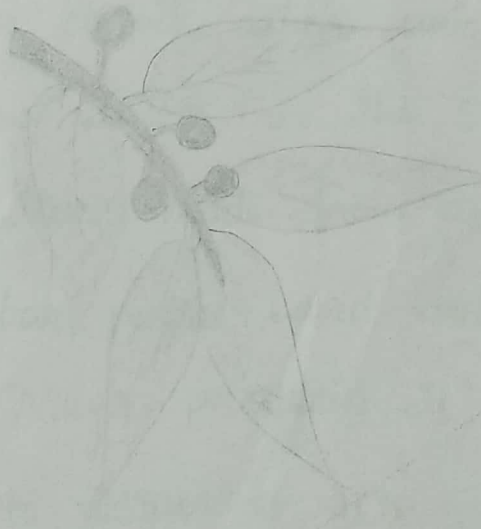
Origin ÷ India

Primary ÷ *Machilus bombycina* [Som]

~~Litsea~~ *Litsea polyantha* [Soalu]

Secondary ÷ *Litsea salicifolia*.

*Celastrus monosperma*.



*Machilus macrocarpa*

*Entana indica*



# Muga Silkworm

- \* Muga Silkworm is one of the economically important wild silk moth genome is among the least understood.
- \* Native of Assam and named after Assamese word muga.
- \* The silk proteins of the species have not been studied.
- \* The confined to only Assam state in India.
- \* The silk proteins of this species have not been studied so far despite their unique properties of provided golden luster to the silk thread.
- \* The popular items made from the silk are 'dhoti', chaddai, Chapkan, pugree and methala.

**Distribution** :- Muga production is confined mainly to Assam to 95%

→ The integral part of traditional culture of the state.

→ To a small extent it is seen in Meghalaya, Nagaland, Manipur, Arunachal Pradesh and also West Bengal.

# Muga food plant *Persea bombycina* King

## Description of plant parts:

**Leaves:** Leaves are simple with a glabrous, upper surface and a pubescent lower surface, exstipulate petiolate alternate, entire obtuse.

## Flowers:

\* Flowers are borne on panicles

\* flowers are bisexual chypogynous regular  
Small in yellow colour.

## Calyx and corolla:

\* Perianth 6 in two whorls persistent imbricate.

## Fruits:

\* fleshy, globose and oblong berry of  
6.0-75 mm size.

**Seeds:** Exalbuminous pendulous.

## Eri food plant

*Ricinus Communis* [castor]

### Description of plant parts

#### Leaves :

- \* Leaves are simple alternate star shaped with long hollow petiole

#### Inflouescence :

- \* Terminalia raceme.

#### Flowers :

- \* Small, Incomplete unisexual monoecious upper female and lower male actinomor-  
-phic, hypogynous.

#### Fruits :

- \* Globose and capsulate mostly with spines.

Seeds : Albuminous.

# Eri Silkworm

Scientist name: *Philosomia ricini*

origin: India

Primary food plant: *Ricinus communis*

*Heteropanax fragrans*

Secondary: *Jatropha curcas*,

*Carica papaya*

*Plumeria rubra*.

Eri Silk: The name Eri derives from the Assamese word "Eri" which means castor-oil plant.

\* Which means castor-oil plant, the main food plant of the silkworm *Somia Cynthia ricini*.

\* The primary food plant of this polyphagous insect is castor [*Ricinus communis* L.].

\* The regions of north-east india show wide morphological and quantitative variations.

\* silk content, larval weight, cocoon weight, cocoon shell weight and Silkratio

\* Eri silkworm were successfully acclimatized in America and Europe but could not take firm hold.

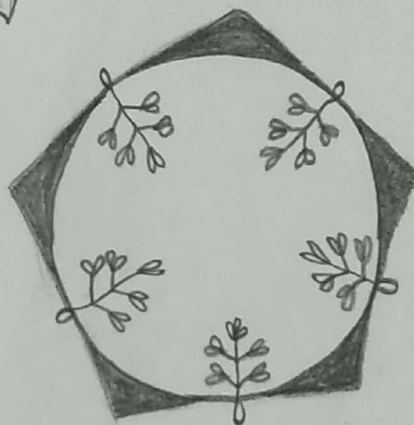
### Distribution ÷

The States of Assam, Nagaland, Meghalaya and Manipur contribute to 98% countries production.

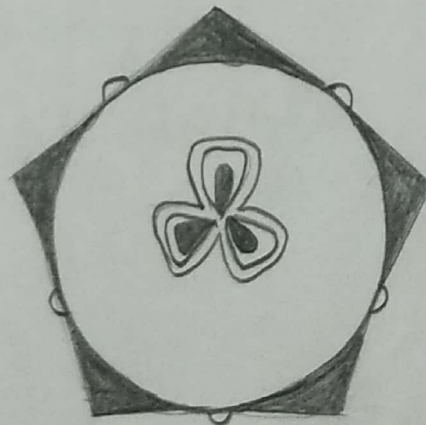
→ Other states practicing in small scale are Arunachal Pradesh, Uttar Pradesh, Bihar, Orissa, West Bengal, Andhra Pradesh and Tamil Nadu.



Seeds



F.F. ⊕ ♂ K(5) (S+5)



F.F ⊕ ♀ P(3) G(3)