

## Traditional practices and terminologies in *Muga* and *Eri* culture

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Northeast region of India occupies a unique position in the global sericultural map for production of golden *muga* silk. *Muga* culture for the people of Assam is part of their culture, tradition and customs, rather than a profitable profession. Factors like natural golden colour of the silk, availability of abundant host plants and skill ness on rearing, reeling and weaving make *muga* culture a unique profession for the people of Assam. The Ahom kings of Assam (1228-1826 AD) patronized the culture of muga silkworm *Antheraea assamensis* (Helfer) for production of rare golden silk. Presently, about 30,000 families in Assam are directly associated with *muga* culture. Apart from Assam, *muga* culture is also practiced in certain pockets of Meghalaya, Nagaland, Arunachal Pradesh, Mizoram, Manipur and West Bengal.

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Northeast India is considered as the original home of *eri* silkworm, *Samia ricini* (Donovan). *Eri* culture is also an age old agro-based small scale industry, which provide livelihood to around 1.3 lakh families in the region. It is a traditional culture inherited from generation to generation and treated as leisure time occupation among the people to meet the partial need of their warm clothing and also food. Because, *eri* pupae is a delicacy among the tribal people of the region, *muga* and *eri* farmers of Assam adopt different indigenous technology practices and traditional terminologies in *muga* and *eri* culture. The paper deals with certain indigenous technology practices and terminologies used in *muga* and *eri* culture to facilitate extension workers and sericulture professionals associated with *muga* and *eri*.

### ***Muga* culture**

#### **Selection of host plant**

*Muga* farmers apply their traditional knowledge to identify suitable host plant for *muga* silkworm rearing. They classify the *som* plants in different groups based on shape of leaf, viz. *Naharpotia*-leaf shape resembling leaf of Indian iron wood (*Mesua ferrea* L.), *Belpotia*-resembling custard apple (*Aegle marmelos* Correa), *Jampotia*-resembling blackberry (*Syzygium cumini* (L) Skeels), *Kathalpotia*-resembling jack fruit

(*Artocarpus heterophyllus*), *Aampotia*-resembling mango (*Mangifera indica*) leaf and so on. Based on farmers' traditional knowledge, *Naharpotia* is the most preferred variety for *muga* silkworm rearing<sup>1</sup>. Experienced *muga* farmers use to identify the preferred variety of *som* plants by chewing the leaves. According to the farmers, taste of the suitable leaves is sweet.

#### **Selection of seed cocoon**

In Assamese, there is a proverb, *Namonir sonch ujanir goch* that means, seed cocoon from lower Brahmaputra valley reared in upper Brahmaputra valley always ensures successful harvest of cocoons<sup>2</sup>. The traditional rearers usually select seeds by seeing the larval colour, movement, number of ridges on the silkworm litter (preferred 6 ridges) and by touching the tubercles of the larvae. Further, feeding behaviour of silkworm is a criterion for seed cocoon selection, since feeding of leaves from top to bottom is a sign of healthy worms, they consider<sup>3-6</sup>. Moreover, presence of one and half litter in rectum of matured worms is considered as healthy sign. Farmers usually prefer to conduct one rearing in one place taking advantage of the luxuriant nature of *muga* silkworm.

#### **Seed preparation**

*Muga* farmers store seed cocoons in a bamboo-made box, *Chakori-pera*. They use to tie and hang paired moths in *khorika*, a stick with hook made of

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thatch grass, for coupling and egg laying<sup>2</sup>. Some farmers hang *Tulsi* twigs in between *khorikas* and believe that this practice will prevent outbreak of pebrine disease. Traditional farmer decouple the male moths by smoking (rotating a torch like device made of paddy straw) in grainage.

#### **Muga rearing**

Farmers rear *muga* silkworm in natural *som* plantation commonly known as *Somoni*. During the rearing period, they restrict entry of people to the rearing plot as they believe that the evil sight of outsider may cause *Mukhloga* disease (Flacherie, a bacterial disease of *muga* silkworm)<sup>1,2</sup>. During scarcity of leaves, they transfer the worms from one plant to another using a bamboo made triangular device *Chaloni*. They tie *Gari bandh* a barrier on tree trunk, to prevent crawling down of *muga* larvae during rearing. Dry leaves of *Singari*, *Bhomloti*, *Azar*, etc. are utilized for preparation of jail, the mounting device for cocooning of worms, by the farmers. It is believed that cocooning in *singari* leaves produces shining and compact cocoons.

#### **Muga reeling**

*Muga* reelers reel *muga* yarn in *Bhir* or *Bhawri* operated by two persons<sup>2</sup>. For degumming of cocoon, they use alkali *khar* made by burning banana peel/pseudostem or paddy straw/husk. *Muga* farmers also produce *ghisha* or spun *muga* yarn known as *jotha-muga* from pierced/flimsy cocoons and reeling waste using pitcher.

#### **Eri culture**

Like *muga* culture, *eri* farmers also adopt various traditional indigenous practices during *eri* silkworm rearing:

#### **Seed preparation**

Most of *eri* farmers prepare *eri* seed by themselves. They also keep *eri* seed cocoons in bamboo made moth cage *chakori pera*. After coupling of moths, they allow the female moths to lay egg on a piece of cloth. Some farmers use thatch grass *khorika* to tie the female moths for egg laying.

#### **Eri rearing**

During early stage, the farmers rear *eri* silkworms in *Dola*, a bamboo made tray. During fourth and fifth instar, they practice bunch feeding method hanging the host plant twigs in bunch from a horizontally kept bamboo or rope. For cocooning of worms, the farmers

use dry leaves of banana as cocooning substratum known as *jali*.

#### **Eri spinning**

Spinning of *eri* cocoon is traditionally done using *Takuri* or *Takli*<sup>3</sup>. Like *muga*, *eri* spinners also use *khar*, an alkali made by burning banana peel or paddy straw/husk for degumming of cocoons.

#### **Traditional terminologies**

To understand both *muga* and *eri* sericulture at farmers level, it is necessary to know their traditional terminologies used by the rearers. Of late, both *muga* and *eri* culture, particularly *eri* culture is being introduced in certain non-traditional states of India, viz., Andhra Pradesh, Madhya Pradesh, Uttar Pradesh, Chattishgarh, Utrakhand, etc. Knowledge of traditional terminologies in *muga* and *eri* culture will help the farmers/sericulturists of non-traditional areas in understanding indigenous technological knowledge (ITK) as well as terminologies. Some of the most commonly used traditional terminologies are:

*Aherua*: Pre-seed crop of *muga* conducted during the month of June-July named as per Assamese calendar month *Ahar*.

*Ampotia som*: *Som* leaves resembling mango leaf.

*Amphutukoni*: *Cricula trifenestrata*, a voracious leaf pest of *som* (Fig.1).

*Ar-joa*: Mating of moths.

*Ar-bhonga*: Decoupling of moths.

*Bali-phutukia*: Appearance of small black spots on larval body due to infection of micro-sporidian disease, pebrine.

*Banh*: Crop.

*Belpotia som*: *Som* leaves resembling custard apple leaf (Fig.15).

*Bhodia*: *Muga* seed crop conducted during the month of August-September named after Assamese calendar month *Bhada*.

*Bhekur bemar*: Muscardine, a fungal disease of *muga* silkworm (Fig.3).

*Bhir* or *Bhawri*: A traditional *muga* reeling device operated by two persons (Fig.2).

*Bhorpok*: Highest ripening day of mature worms.

*Borbhogia*: A stock of *muga* silkworm with big size larvae<sup>2,5</sup>.

*Chai-ura*: First moulting of *muga* silkworm.



Fig.1 Amphutukoni



Fig.2 Bhir or Bhawri



Fig.3 Bhekur bemar



Fig.4 Dola



Fig.5 Jali



Fig.6 Khorika



Fig.7 Eria chadar



Fig.8 Phutuka



Fig.9 Mukhloga rog



Fig.10 Dal dhora



Fig.11 Chaloni



Fig.12 Gach bindha



Fig.13 Gari bandh



Fig.14 Takuri



Fig.15 Belpatia som



Fig.16 Nahor potia som



Fig.17 Jam potia som

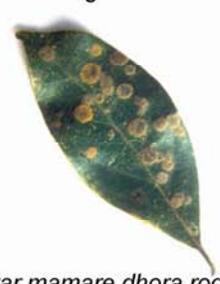


Fig.18 Patar mamare dhora rog

*Chaloni*: A triangular shaped device made of bamboo strips for transferring of *muga* worms from one plant to another (Fig.11).

*Chak*: Circular bamboo device for hanging *khorika* for egg laying.

*Chokora*: Male moth of silkworm.

*Chokori*: Female moth of silkworm.

*Chokori pera*: A bamboo-made box for keeping seed cocoons and moths.

*Chotua*: *Muga* seed crop conducted during the month of February-March named after Assamese calendar month *Chot*.

*Dal-dhora*: Preparation of air-layers (Fig.10).

*Dola*: Rearing tray made of bamboo (Fig.4).

*Eri chadar*: Shawl made of *eri* yarn used as warm clothing (Fig.7).

*Gach-bindha*: Stem borer of plant (Fig.12).

*Gari-bandh*: Barrier on tree trunk with thatch grass/ banana pseudostem to prevent crawling down of *muga* larvae during rearing (Fig.13).

*Gneror khola*: *Muga* worms ripened during last three days of ripening period.

*Hati-phutukia*: Appearance of large black spots on larval body due to heavy infection of micro-sporadial disease, pebrine.

*Jali*: A substratum for cocooning of *mugaleri* silkworms, made of dry leaves (Fig.5).

*Jam potia som*: *Som* leaves resembling raspberry leaf (Fig.17).

*Jarua*: Pre-seed crop of *muga* conducted during December to January named after Assamese season *Jar* (means winter).

*Jethua*: *Muga* commercial crop conducted during the month of May-June named after Assamese calendar month *Jeth*.

*Jotha muga*: *Muga* spun yarn obtained from pierced/flimsy cocoons and reeling waste.

*Jumuthi*: Torch like device made of paddy straw for using in decoupling and for collection of ripened worms.

*Kalam diya*: Pruning of plants.

*Kathal potia som*: *Som* leaves resembling Jack fruit leaf.

*Khon*: Counting unit of *muga* cocoon (1,000 cocoons = 1 *khon*).

*Khorika*: Stick with hook made of thatch grass or twig to tie the female moths for egg laying (Fig.6).

*Khora*: Bamboo made basket for collection of mature worms *Kotia*: *Muga* commercial crop conducted during the month of October-November named after Assamese calendar month *Kati*.

*Laad*: Litter of silkworms.

*Labang*: A stock of *muga* silkworm with medium size larvae<sup>2,5</sup>.

*Leta*: Pupa.

*Leta kundua*: Spinning of cocoon.

*Mahi pora*: Appearing of black scars on larval body due to *uzi* fly infestation.

*Maiki-olowa*: Entering of 4<sup>th</sup> stage when male and female markings become clearly visible.

*Muga-chungia*: Person(s) engaged in *muga* rearing.

*Mukhloga rog*: A bacterial disease of *muga* silkworm (Flacherie) (Fig.9).

*Nahar potia som*: *Som* leaves resembling Indian iron wood plant leaf (Fig.16).

*Patar mamare dhora rog*: Leaf rust disease (Fig.18).

*Patar temuna dhora*: Leaf gall.

*Phutuka*: Pebrine, the micro-sporadial disease of *muga* and *eri* silkworm (Fig.8).

*Poka-olowa*: Starting of ripening of worms.

*Polu*: Larvae.

Polu poka: Ripening of silkworm larvae.

*Somani*: *Som* plantation.

*Sonchua khola*: Seed cocoons.

*Sorubhagia*: A stock of *muga* silkworm with small size larvae<sup>2,5</sup>.

*Takuri*: A traditional *eri* spinning device (Fig.14).

*Tingar-khola*: *Muga* worms ripened during early part of ripening period.

*Tini-olowa*: Entering of 4<sup>th</sup> stage after 3<sup>rd</sup> moult.

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