Traditional knowledge and practices involved in Muga culture of Assam

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Received 18 May 2005; revised 28 November 2005

The golden Muga silk culture is associated with the traditions and customs of Assamese people. An attempt has been made in the paper to report the traditional knowledge, practices and skills of Assamese people involved in Muga culture of Assam and to assess problems faced by this unique culture.

Key words: Muga culture, Silk, Traditional knowledge, Assam
IPC Int. Cl.: A01B7/00, A01B7/02, A01B7/04, A01B7/06, D01C3/02, A01K67/04

The Muga silk culture of Assam is as old as Assamese culture. It is believed that the Tai-Ahoms introduced the Muga culture into Assam, and is a remarkable contribution of Tai-Ahoms to Assamese culture1. Muga culture of Assam is associated with traditions and customs of Assam. The most characteristic industry of Assam during the reign of Ahoms (1228-1826) was the rearing of silkworms and cloth manufacture from the thread2. The varieties of fabrics produced with fineness of texture and beauty in design, and harmony in colour were magic skills of weaving, mainly inherited from generation to generation3. The traditional skills involved in Muga culture plays a very important role in socioeconomic & cultural life of Assamese people. But the present status of Muga culture has been very deteriorating. The declining trend set in during British period and the area under Muga host plants reduced considerably due to the combined impact of various factors.

Methodology

For the collection of primary data about the traditional Muga culture, two Muga concentrated districts was been selected purposively, one from North bank (Lakhimpur) and another from South bank (Sivasagar). A questionnaire was prepared to collect primary information of 100 sample respondents from each district, which was selected randomly. Utmost care was taken to collect reliable information. Secondary sources were also used whenever necessary. Earlier, several workers have investigated in different fields of Muga culture4-19.

Results and discussion

Out of 200 sample Muga silkworm rearers (Muga sungia) of Sivasagar and Lakhimpur, 75 % of h/hs (150) are from Tai-Ahom communities and the remaining is from Kachari, Chutia, Koch, Kalita, Jogi and other communities of Assam. It was also found that Tai-Ahom rearers are well acquainted in reeling, weaving of Muga fabrics. 3% of the rearers are found as commercial reeler and weaver, 65% of the rearers reel and weave for domestic purposes and most of the rearers from other communities' sale their cocoons soon after harvesting. All the rearers use traditional appliances made of bamboo and biological method to control pest and predators during rearing period. Cocoonage (Jali) made of dry leaves, Khorika (a stick-like bundle of straw or culms), bamboo tray of different size and design called chandali, chalani, bamboo pera (cocoon cage) for collection & storage of cocoons, bow (Dhenu), clay pellets (Batalu guti), Khurung (basket for keeping clay pellets), etc. are different types of traditional appliances used by traditional rearers in rearing.

It was observed that 90% of the sample rearers of Upper Assam prefer Som (Machilus bombycine King) plants for silkworm rearing and only 10% prefer other plants, viz. Sualu (Litsaea polyantha Juss), Dighloti

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considered best, black colour (kukurbahi) spread humidity and to make the room hygienic the rearer place inside room. To maintain the temperature, cocoons rearers store them in bamboo cages in a safe place. Investigation, few rearers from Lakhimpur were found cocoons from upper part of North bank. During field South bank, while Sivasagar rearers prefer seed cocoons from Sivasagar and other districts of Northeastern region and prefer to carry the same in special goggles. Moreover, the rearers of Lakhimpur district prefer numbers. When both male and female descend down in equal continuation of generation, as in most part of Northeastern region and prefer to carry the same in special goggles. During the time of transplantation they use cow dung to the pits (1m²) ready for this purpose and cover the whole area with bamboo fencing which is required for 2-3 yrs. After 4-5 yrs of age of the plants, most of the plants are left uncared except during rearing period, when the site is cleaned according to requirement. The traditional rearers collect seed cocoons (honch or kothi) from different seed growing areas of Assam & other states of Northeastern region and prefer to carry the same in special goggles. In the night to avoid sun, jerk and other disturbances which may damage the chrisalids inside the newly formed cocoons. The rearer prefers well-observed healthy seed cocoons. With thickness of excretes (laad) on the ground; presence of least egg shell on khorikas used, because the healthy young worms starts chewing the egg shell soon after emergence; presence of two excreta in the inner most part of the body of worms by gently pressing one or two mature worms with finger; copper colour worm (pavomukhia), specially the mouth colour are considered best, black colour (kukurbahi) are discarded, which are disease infected; unaffected worms from diseased broods, which are immune; worms which take both leaves and tender leaf-stalk and the 'cast off skin' during moulting; and worms from peak period of harvest (Bhorpok) is preferred, when both male and female descend down in equal numbers.

Moreover, the rearers of Lakhimpur district prefer seed cocoons from Sivasagar and other districts of South bank, while Sivasagar rearers prefer seed cocoons from upper part of North bank. During field investigation, few rearers from Lakhimpur were found rearing Bhodia seed crop in Sivasagar for continuation of generation, as in most part of Lakhimpur district, rearers cannot rear Bhodia cropping due to flood. After collection of seed cocoons rearers store them in bamboo cages in a safe place inside room. To maintain the temperature, humidity and to make the room hygienic the rearer spread Tulsi (Ocimum sanctum Linn.) and Neem (Azadirachta indica A. Juss.) mixed water on the floor, which is antibacterial and insect repellent. After emergence of moths, female is tied on khorikas and the male moth are allowed to couple (ar-joa) naturally. In case of insufficient quantities of male moths, they are also tied with female for 2nd or 3rd coupling. Decoupled (ar-bhonga) male moths as well as female moths after laying eggs are taken as delicious food by several rearers. Prior to brushing of khorika with newly hatch worms (lai-khorika), the rearers tie dead scaly fishes, frogs and keep molasses at the base of the host plants to attract ants colony and finally burn them, as ant colonies affect Muga worms heavily in the initial stage. During the daytime of rearing period, some rearers destroy nest of ant colonies to keep them busy, to check them from climbing above to affect worms. The effect of ants is very high in Sivasagar as compared to Lakhimpur, because most of the surveyed areas of Lakhimpur are flood affected. In Lakhimpur, algae affect most of the plants and rearers tie a blade on the top of a long piece of bamboo to remove it from the main branches of the plants for easy crawling of worms.

Moreover, the base of the host plants is rounded with a ring (Gari bandh) of slippery leaves and bark of banana plants, Tora (Zingiberaceae), buffalo dung, ash, etc. in order to stop the Muga worms further coming down and to keep the ants' colony not to climb on the plants. During the time of maturity of worms, the rearers use coil of straw rope as Gari bandh. The rearers also build a temporary shed in the sumonis, which are far away from home to protect them from strong sun and rainfall in the daytime. In the night, some rearers stay in the temporary shed till the time of removing of cocoons from jails, which is most common in big sumonis and also during the time of maturity of worms. Finally, at the time of brushing lai-khorika, rearers perform a type of ceremonial function to drive out the evil spirits from the site and also to pray for good harvest. Due to outdoor rearing, worms are exposed to various pest and predators. During daytime birds & other animals predacious on Muga silkworm are driven away by shooting clay pellets with a bow. Some rearers use pieces of bamboo by splitting one side, which make a sound to keep the birds away. During night, some rearers place bamboo leaves on the top of the plants, which reflect the moonlight and the nocturnal predators are driven away. Some rearers put a duck in a bamboo cage at the top of the host plant, and when the nocturnal
predatory birds & bats come the duck screams, to
drive away the nocturnal predators.

When the leaves of a plant are exhausted, the
worms descend down to the base naturally and the
rearers sorted out the worms according to different
size of growth on triangular bamboo trays
(Chendelai), which are then hung on another plant
with leaves. To observe Pebrine (Dobaphutuka) and
Balichanda (earlier stage of pebrine, called
baliphutuka) infected worms, some rearers use a
special type of magnifier by filling water in a glass or
broken bulb. Infected worms are then placed on
separate plants from uninfected ones. It is important
to note that most of the rearers reared Muga
silkworms by taking one or two share partners. This is
mainly because Muga rearing operation is labour-
intensive, time consuming and hazardous one.

Constant care and watch on different stages
(moulting) of development of worms, pest and
predators, diseased, etc is required in each and every
step. Now a days, some rearers use 'net' to protect
worms from pest and predators. About 30% of seed
cocoon rearers and 10% of commercial rearers are
found using 'net' during field investigation. When the
worms become matured, they stop feeding and rest
motionless (jholom dhara). Prior to descend towards
the base of the plants, they start discharging liquid
faeces (jhelema) and finally move towards the base of
the plants during dusk. Rearers gently rubb the
worms, which make a hollow sound and are put
inside a bamboo basket (Khora or Khang) and carried
safely for spinning in cocoonage made of dry leaves
of sum, sualu, hingori (Castanopsis sp.), nahar
(Mesua ferrea L.), azar (Lagerstroemia speciosa
Pers.), patihonda, bhomlati (Celastrus monospermus
Roxb.), mango (Mangifera indica Linn.), jackfruit
(Artocarpus heterophyllus Linn.) etc. Neighbors,
family members and other rearers in the 'sumonis' also
help each other in collecting wipe worms. The
immature weak and lazy worms (Ledhemdhem) are
left in the sumonis. The spinning room is kept safe
from insect, pests and predators. Some worms escape
from the cocoonage and such straggling worms,
called polorua Muga do not spin, and some rearers
use them as delicious food.

For reeling purposes, the reelers remove the
cocoons from cocoonage and kill the pupae inside the
cocoon by putting the cocoons on bamboo tray over
fire (dhowachung) or by keeping the cocoons on a
bamboo tray over a tin drum where they are put under
fire-heat and/or in strong sun without damaging the
cocoon shell. Muga cocoons are then boiled in an
alkaline solution (Kharoni or khar of soda and straw
ash) to remove the natural gum of cocoons and add
some slimy substances like the core of owtenga
(Dilenia indica Linn.), simalu (Bombax malabaricum
DC.) bark, leaves of agaru, leaves of lafa (Malva
arvensis Prisl.), etc. to the solution for easy tracing of
filaments. The traditional Bhir or Bhowri is used for
reeling by the traditional reelers. After the removal of
outer surface of the cocoons (floss) the inner filament
is drawn out one by one and according to the
thickness of yarn 5 to 10 nos of such filament are put
together (Heer diya) and twisted to form a thread
which is then passed over the reel. Two people are
required in this operation and can handle about 500
cocoons for producing 100-130 gm of silk yarn in one
day. The outer surface of the cocoons, flimsy
cocoons, Khula cocoons, etc are called Jhutha and are
spun like Eri yarn on traditional Takuri for weaving
Bor kapur and Eria chadar (mixed with Eri yarn),
which are used in winter as shawl or blanket.

The traditional weaver generally weaves female
apparel like Mekhela, Chadar, Riha and plain clothes
for both male and female from Muga yarn to meet
household demand and use throw-shuttle looms (Matia
haal). Commercial weaving of Muga fabrics is
concentrated in Sualkuchi and Palashbari of Kamrup
district of Assam, where fly-shuttle looms are used.
Muga yarns have to be sized (Tahun diya) in order to
bind the split and uneven end of the fibre and
traditional weavers used rice gruel for this purpose.
Some weavers mix it with rotten shaddock (Citrus
grandis (Linn.) Osbeck), to give the fabrics a smooth
and shinning appearance. For designing fabrics,
indigenous technique called Saneki is used. In this
procedure, thin bamboo sticks are used to depict the
picks in the repeat of the design. The sticks are
inserted into a plain weave fabric by counting the
thread to be crossed over and under according to the
picks. Later, the skilful weavers on to the cloth
transfer the design from the Saneki, by inserting extra
weft yarns with separate shuttles. Together with the
shading for the ground picks, an additional shedding
arrangement for insertion of the extra weft is required.

The practices of Muga silkworm rearing from
searching of seed cocoons to the production of reeling
cocoons are laborious. The younger generations of
the rearer’s families are not interested to continue this
culture. Being pursued mostly by rural illiterate and
partially educated people, the industry projects an image, which is not attractive to the new educated generation. Therefore, they are not interested in pursuing this culture. Moreover, due to various constraints like lack of healthy seeds in proper time and place, pollution created by tea gardens, deforestation, absence of organised cocoons market, availability of cheaper Muga alike fabrics, etc., most of the traditional rearers had given up this occupation. The annual production of Muga raw silk has been stagnating around 90 t during the last decades. The deteriorating trend of production and alarming prices of fabrics compelled the weavers, common customers to look for cheaper Muga alike fabrics, which is not a good sign for this unique craft.

There is lots of scope to develop this agro-based crafts in Assam. For this, modernisation of traditions through the transfer of technology to the grass-root level is as important as the tradition itself. There is a need to popularise new technologies among the farmers for widespread adoption in the field. Moreover, the image of the industry is to be changed from its present rustic, low-tech profession to a modern high-tech industrial activity through Research and Development. Proper interest and respect are needed to be given to the tradition and beliefs attached with this culture and attempt should be made to replace crude methods in a phased manner.

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