Sl.No. 1: Information on all technologies of Muga and Eri

A) TECHNOLOGIES IN THE FIELD UNDER MUGA SECTOR

1. **Superior morphotype of muga food plant Som.**

Title of the Technology: Improved S-3 morphotype of som, *Persea bombycina*

Year of recommendation: 1994

Salient feature:

- Leaf shape: Lancelate with entire margin.
- Leaf size: Length-7.3 cm (av) Width: 2 cm (av)
- Potential leaf yield: 18 kg/plant.
- Moderately resistant blight and less susceptible to leaf spot disease.
- Palatability by muga silkworm: 98.8%

Recommended for all locations.

For any query details Contact Dr. (Mrs) R.Das. Mob.: +91 9435357210
2. Propagation of muga host plant

Title of the Technology: Raising of seedling from seeds  
Year of recommendation: 1994

Salient feature:

- 80% survival.
- Easy to adopt.
- Seeds with 3.0 g. in weight and 7.0 mm in diameter are to be selected for sowing.
- Germination will take place within 40-60 days in case of Som seeds.
- Reduce the period of establishment and save wastage of precious seed materials.
- Germination: 90%
- Post transplantation survivability: 90%
- Time of seed sowing: April-May
- Time of transplanting: 10-12 months old seeling (June-July)

Recommended for all locations.

Som Nursery

For any query details Contact Dr. (Mrs) R.Das. Mob.: +91 9435357210
3. **Intercropping in between muga host plantation for better economic dividend**

Title of the Technology: Intercropping in between Som plantation

Year of recommendation: 2010

Salient feature:

- Intercropping with shade loving crops like Ginger (*Zingiber officinale* Rosc), Turmeric (*Curcuma longa* L.) and Colocasia (*Colocasia esculenta* L.) is advisable for all stages of som plants.
- It may generate additional income by 47-85 % over sole cropping of som.
- It checks weed growth.
- For gestation period of som, any vegetable crops can effectively be grown as intercrops.
- For maintaining soil fertility and soil health, intercropping with legume crops like Blackgram, greengram etc. is advisable.

Recommended for all locations

For any query details Contact Dr. (Mrs) U. Hazarika Mob.: +91 9435316849
4. **Pruning/ pollarding schedule of som and soalu plantation for quality leaf**

Title of the Technology: Pruning technology

Year of recommendation: 1996

Salient feature:

- Maintain the manageable height of the host plant for muga silkworm rearing
- Newly sprouted leaves are nutritious and succulent.
- It also help in controlling some diseases and pests.
- Pruning schedule is prepared for all the crops.
- Pollarding is recommended for every 5 years interval at the height of 6 ft from ground level.

Recommended for all locations

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For any query details Contact Dr. (Mrs) R.Das. Mob.: +91 9435357210
5. **Organic manure based farming system**

Title of the Technology: Organic manure based muga farming system

Year of recommendation: 2010.

- Organic farming system with incorporation of green manure (Dhaincha), FYM (5 t /ha), vermicompost (1t /ha)
- Cost effective technology.
- Ensures 16.83 t leaf yield /ha som plantation which is at par with recommended inorganic fertilizer ( 100 : 50 : 50 kg NPK/ha and 10 t FYM/ha)
- Easily accessible
- Improves soil fertility & sustainability

For any query details Contact Dr. (Mrs) U. Hazarika Mob.: +91 9435316849
6. **Muga Rearing Technology**

Name of the technology: Chawki rearing of muga silkworm.

Year of Recommendation: 2004

Salient features:

- It provides succulent and nutritious leaves.
- Worms feed on chawki plots are healthy.
- Minimises the loss and mortality at young age worms.
- 15-20% increase in cocoon yield as compared to traditional.

Usage:

- For brushing, prune 20-30% of the plants at 5-6 feet above ground before 4 months in summer and 5 months in winter.
- Within 7 days of pruning, apply FYM @0.5cft followed by NPK @44:62:17g/ plant.
- Irrigate chawki garden before brushing in ‘chatua’ seed crop.
- Pluck old leaves and spray 5% bleaching powder solution on the tree and dust slaked lime powder in the soil @800 kg/acre.
- Conduct the brushing inside nylon net cover.

Recommended for all locations

For any query details Contact Dr. N.I.Singh Mob.: +91 9678000491
7. Pest management of muga host plant

Title of the Technology: Control of stem borer (*Zeuzera indica*), the pest of muga host plant


Salient feature:

- Eco-friendly procedure.
- Easily available botanicals are considered for the technology.
- Control the infestation up to 80%.

Usages:

Plugging of holes with 5-15% plant extract of neem (*Azadirachta indica*), dotura (*Datura metel*), titabakah (*Adhatoda vasica*), castor (*Ricinus communis*) and Positia (*Budelia adciatica*) followed by mud plastering control the infestation.

Recommended for all locations

For any query details Contact Dr. (Mrs) R.Das. Mob: +91 9435357210
8. Disease management of muga host plant

Title of the Technology: Use of “Phytoblighton to control of leaf blight (Colletotrichum gloeosporioides) disease of soalu.

Year of recommendation: 2009.

Salient feature:

- Eco-friendly bio-formulation.
- Control up to 84%.
- Peak season: Sept-Oct.

Usages:

- Doses: 50 ml /liter of water before the peak season of infection.
- Spraying intervals: Low infection : 7 days
  High infection 3 days.

Safe period: 1 day

Cost benefit ratio: 1: 1.24

Recommended for all locations

For any query details Contact Dr. (Mrs) R.Das. Mob.: +91 9435357210
9. Disease management of muga silkworm

Title of the Technology: Use of “Lahdoi” to control mascardine disease of muga silkworm

Year of recommendation: 2009.

Salient feature:

- Prevent the mascardine disease upto 70% .
- Non-corrosive formulation to muga silkworm
- Spraying of “Lahdoi” also improve the leaf quality.

Usages:

- Doses : 1 g / L of water.
- Spraying should be in the food plant and soil before 7 days of brushing of the worm.
- Spraying interval: After 15 days (spraying can be done on the larvae) till maturation.

Do’s

- Use clean sprayer.
- Spraying of the chemical should be done within 6 month from date of packing

Cost benefit ratio: 1: 3.5 in compared to 1:0.86 of control

For any query details Contact Dr. (Mrs) R.Das. Mob.: +91 9435357210
10. **Muga silkworm spinning device**

Title of the Technology: Use of “Bamboo mountage” to control muscardine disease of muga silkworm


Salient feature:

- A box type mountage fabricated from bamboo.
- Save 60% labour
- Shell percentage is improved.
- Save 90 % space.
- Increased silk yield by 10%.
- After every use disinfection is required.

For any query details Contact D. Goswami Mob.: +91 9435514976
11. **Name of the Technology: Integrated control of Uzi fly in muga culture**

Year of recommendation: 2009.

Salient features:

- Release of the hyperparasitoid, *Nesolynx thymus* and *E. phillipinensis* during rearing and grainage and rearing period reduces the uzifly infestation of the muga worms to the tune of 15-20%.
- Complete rearing under nylon net cover can save from uzifly infestation.
- It is eco friendly procedure.
- Can achieve a gain of 30 % cocoon yield during Jarua and Chatua crops.

For any query details Contact Dr. R. Kumar: Mob. +91 8011066646
12. **Muga silkworm Grainage Technology**

Title of the Technology: Mother Moth Examination for Detection of Pebebrine in Muga Silkworm.


Salient feature:

- Followed for preparation of Disease-free-laying.
- For detection and prevention of pebrine.

Usages:

- Crush the moth with 0.8% $\text{K}_2\text{CO}_3$.
- Centrifuge the filtrate @3000 rpm.
- Examine the pellet under the microscope.

Recommended for all seed production centres/seed producers.

For any query details Contact G. Rajkhowa : Mob.: +91 9435524334
13. REELING TECHNOLOGY

Name of Technology: BANI- a muga weft reeling machine.

Year of Recommendation: 2008

Salient features:

- A weft Muga yarn reeling machine.
- Motor cum pedal operated, single basin, 4 end capacity machine.
- Produces zero twist flat muga yarn.
- Operated by a single person in sitting posture.
- Productivity is 120-140 g/day against 80-100 g by two persons in Bhir.

For any query details Contact D. Goswami Mob.: +91 9435514976
14. MUGA COCOON COOKING TECHNOLOGY

Name of Technology: Muga silk plus - an effective cooking chemical for muga cocoon.

Year of Recommendation: 2009.

Salient features:

- Chemical formulation for cooking muga cocoon.
- Enhance the muga silk recovery up to 55%, against 40-48% silk recovery in traditional khar and soda.
- Soluble in water.
- The quality of reeled yarn is improved.
- No side effect.

Usages:

- 2.5 g in 1 litre water.
- Quantity: 50 cocoons can be boiled per litre of solution.
- Boiling time: 5-8 cocoons for fresh cocoons and 8-10 minutes for old cocoons

For any query details Contact D. Goswami Mob.: +91 9435514976
B) TECHNOLOGIES IN THE FIELD UNDER ERI SECTOR

1. Superior variety of Eri food plant Castor

Title of the Technology: High yielding Castor Variety.

Year of recommendation: 2001 (NBR-1), 2011 (NBR-2 & NBR-3)

Salient feature:

- Non-bloomy red variety of Castor.
- NBR1 gives leave yield of 12MT/ hectare/year which is 20% more than the traditional variety.
- High nutritive value.
- NBR2 and NBR3 give leave yield of >13MT/ hectare/year which is 11-14% more than NBR-1.
- The ideal planting seasons are March- April and September-October.

Recommended for all Eri rearing seasons.

For any query details Contact Dr. M.C. Sarmah. Mob.: +91 9435713514
2. Nursery technique of eri host plant.

Title of the technology: Raising of Kesseru nursery.

Year of recommendation: 1998

- Season: February-March.
- Plough the land 2-3 times and level it.
- Make 6 x 2 m beds and lift up to 15 cm above ground level.
- Apply 6 cft FYM and sand to each bed, mix thoroughly with the soil and level it.
- Cover the kesseru fruits on the plant with nylon net to prevent consumption by birds.
- Collect the ripe fruit during February-March and store the fruits in shade for 1-2 days and soak the fruits overnight in water.
- Rub the fruits with a gunny cloth and put the fruits in water and select only the sunken ones.
- Treat the seeds with Bavistin @ 2-3 g/kg seed.
- Sow seeds thinly and mulch the seed bed with a thin layer of straw.
- For supply programme raising of poly-tube nursery is convenient.
- Use agro-net shed for better germination.
- Irrigate regularly during dry season.
- Remove the mulch after 90 % germination.

Different steps of raising of kesseru nursery

For any query details Contact Dr. M.C. Sarmah. Mob.: +91 9435713514
3. Agronomical practices in Kesseru

Title of the technology: Pollarding and manuring of kesseru.

Year of recommendation: 2000

Salient feature:

- Pollard the plants at a height of 1.75 m after attaining age of 5 years age.
- Practice at 5 years interval following step up down method.
- Proliferation of foliage up to two times of non pollarded plants.
- Leaf plucking is easier.
- Provides quality foliage for rearing.

For any query details Contact Dr. M.C. Sarmah. Mob.: +91 9435713514
4. **Package of practices for perennial castor cultivation**

**Title of the Technology:** Cultivation of perennial castor.

**Year of recommendation:** 2006

**Salient feature:**

- Application of NPK @ 120:40: 40 kg/ha along with 10 MT FYM/ha/year.
- Spacing: 1 x 1.5 m.
- Pruning: at the height of 1 m during March.
- Reduce recurring cost of annual castor cultivation with a BCR of 1:1.22.

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For any query details Contact Dr. (Mrs.) U. Hazarika. Mob.: +91 9435316849
5. Intercropping with Kesseru plantation for better economic dividend

Title of the Technology: Intercropping in kesseru plantation

Year of recommendation: 2010

Salient feature:

- Intercropping with shade loving crops like Ginger (*Zingiber officinale* Rosc), Turmeric (*Curcuma longa* L.) and Colocasia (*Colocasia esculenta* L.) is advisable for all stages of Kesseru plants.
- It may generate additional income by 40-50% over sole cropping of Kesseru.
- Recommended for all stages of Kesseru plants.
- Intercropping checks weed growth.
- For gestation period of som, any vegetable crops can effectively be grown as intercrops.
- For maintaining soil fertility and soil health, intercropping with legume crops like Blackgram, greengram etc. is advisable.

Recommended for all locations

For any query details Contact Dr. (Mrs.) U. Hazarika. Mob.: +91 9435316849
6. **High yielding Eri Silkworm breed**

Title of the Technology: Eri silkworm breed C2

Year of recommendation: 2014

Salient feature:

- Fecundity: more than 350 eggs
- Shell weight: Above 0.54g.
- ERR: Above 85%
- Cocoon shell yield per 100 dfls: 12 to 13.3 Kg against 7.71 Kg of traditional race.
- Suitable for rearing with Castor, Kesseru, Borpat and Tapioca
- Temperature 25-32 °C and RH 75-80% suitable for rearing.
- More than 1200 g leaf required to rear per dfl of the breed.

For any query details Contact Dr. S.A. Ahmed. Mob.: +91 9957176388
7. **Low cost rearing technology of castor**

Title of the technology: Platform rearing technique of eri silkworm.

Year of recommendation: 2005

Salient features:

- Platforms are placed in 3 tier in bamboo rack of size L 2.2 m x B 0.75 m x H 1.60 m.
- Two nos. of such racks can be placed in a room floor area 5.4 sq m. (1.2m x 4.5m).
- Maximum of 1200 eri silkworms at 5th instar can be reared in each platform to accommodate total 7200 silkworms by brushing 25-30 dlfs of eri.
- Almost double quantity of silkworms per unit against the traditional round bamboo try (1m dia. with capacity of 300 nos. 5th instar worms) rearing system.
- It is labour and space saving technology.

For any query details Contact Dr. M.C. Sarmah. Mob.: +91 9435713514
8. Improved mountage for eri silkworm

Title of the technology: Improved collapsible split type mountage

Year of recommendation: 2014

Salient features:

- 400 worms can be accommodate in 90 cm X 60 cm (length X breadth) size montage
- By pulling out the strips the cocoons can be harvested easily & labour can be saved.
- 99.75% good cocoon can be harvested.
- Space requirement is negligible in comparison to traditional jail.
- It can be utilized for brushing tray by removing the strips.
- In a 90 X 60 cm size montage 25 df ls of eri silkworm can be brushed and can be reared up to 2\textsuperscript{nd} instar.
- The cocoons are stain free against 10-25% stained cocoons in traditional jail.

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