4. Health status of larvae

- Collect the suspected diseased larvae/ dead/weak/unsettled larvae from different trays
- Subject them to visual diagnosis for different diseases. For confirmation, conduct microscopic examination for the presence of pathogen by technically qualified personnel

Diagnosis of diseases

Visual symptoms	Microscopic examination
Grasserie	
Unsettled larvae, aimless crawling, inter segmental swelling, shining skin and oozing milky fluid.	Presence of polyhedra
Flacherie	
Undersized and inactive larvae exhibiting vomiting and flaccidity.	Presence of bacteria
White muscardine	
Restricted larval movement followed by mortality. Hardened and white mummified larvae.	Presence of hyphal bodies
Pebrine	
Undersized larvae and delayed moulting.	Presence of oval/ ovo-cylindrical spores

Inference: If sample revealed pebrine disease, the batch is not fit for distribution and it should be rejected and burnt. Disinfect the CRC immediately.

CERTIFICATION

Name of the CRC:	Address:
Date of Brushing:	Hatching %:
Source of dfls:	Lot No. :
Breed/hybrid:	No. of dfls:
Stage of larvae:	No. of trays kept/100 dfls :

Parameters assessed

Parameters	Norms	Obser-vation
Missing larvae	Less than 5%	✓
Larval uniformity [under sized larvae]	Less than 15%	✓
Growth of larvae(wt.)		
Bivoltine hybrid	3.4-3.8 g/100 larvae	✓
Cross breed	2.2-2.6 g/100 larvae	✓
Visual and Microscopic examination results		
Grasserie	Free from polyhedra	✓
Flacherie	Free from bacteria	✓
Muscardine	Free from hyphae	✓
Pebrine	Free from spores	✓
Recommendation: Batch is fit for distribution		

Date:

Signature:
Name:
Designation:

Text:
M.T. Himantharaj & M. Balavenkatasubbaiah

For further details Contact:

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CHAWKI CERTIFICATION

HEALTHY CHAWKI FOR SUCCESSFUL SILKWORM CROP

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The supply of disease free quality chawki worms is a basic pre-requisite for the production of Bivoltine silk. Chawki/ young age silkworm rearing is a vital aspect for the development of healthy larvae in harvesting successful cocoon crop. CRCs were established to supply healthy and robust chawki worms to farmers. Before supply of chawki worms to farmers, chawki certification is essential during II moult.

Why chawki certification?

- Chawki certification is to certify the status of health and growth of young silkworms prior to distribution
- Certification system is to implement the CRC concept efficiently for achieving better production and productivity at farmers level

Chawki certification consists of the following four tests

- Quantification of missing larvae
- Quantification of larval uniformity
- Assessment of larval growth
- Health status of the larvae

1. Quantification of missing larvae

- Collect the information on hatching % from CRC
- Place square paper board (10 × 10 cm) on a rearing bed and collect all the larvae available in the cut space of 100 sq cm
- Collect one sample per 100 dfls
- Count the number of larvae collected
- Estimate the total larvae in a tray (60 × 90 cm = 5,400 sq cm) using following formula :

$$\text{Larvae/tray} = \frac{\text{Larvae/100 sq cm} \times 5400}{100}$$

$$\text{Larvae/100 dfls} = \text{Larvae/tray} \times \text{No. of trays}$$

$$\text{Missing larvae \%} = \frac{\text{Larvae brushed} - \text{Larvae estimated}}{\text{Larvae brushed}} \times 100$$

Inference: If the missing larval percentage is 5 and above it indicates poor rearing management.

2. Quantification of larval uniformity

- Randomly collect 3-5 batches of 100 larvae each from different trays
- Separate undersized larvae and count the number
- Calculate % of undersized larvae using the following formula:

$$\text{\% of undersized larvae} = \frac{\text{No. of undersized larvae}}{\text{Total number of larvae counted}} \times 100$$

Inference: If the percentage of undersized larvae is 15 and above, it indicates that larvae are weak/diseased or result of poor rearing management.

3. Assessment of growth of larvae

- For every 100 dfls randomly collect 100 under moult larvae from different trays
- Take the weight of larvae by using sensitive electronic balance

Inference: The standard weight of 100 bivoltine hybrid larvae during 2nd moult should be between 3.4–3.8 g and for cross breeds, between 2.2–2.6 g. If the weight is less than the standard, it indicates that larval growth is not optimum.