



Reduction in size by quartering



Opposite quarters are discarded



Collecting the samples in clean cloth bags

Reduction in size by quartering (300 to 500 g)

| | | | |
|--------------|--|--|--|
| Surface soil | | | |
| 0 to 30 cm | | | |
| 30 to 60 cm | | | |

X Discard two sides ✓ Select two sides

General Recommendations

- Farm yard manure @ 25 MT/hectare/year in two split doses to be applied mandatorily for sustained maintenance of mulberry garden
- Nitrogen can be given in the form of ammonium sulphate (AS)
- Phosphorus should be applied in the form of single super phosphate (SSP)
- Potash to be given as muriate of potash (MOP).

Favourable ranges of soil fertility for mulberry

| Parameter | Range |
|--------------------------------|--------------|
| pH | 6.5 to 7.5 |
| Electrical conductivity (dS/m) | < 1.00 |
| Organic carbon (%) | 0.65 to 1.00 |
| Available phosphorus (kg/ha) | 15 to 25 |
| Available potassium (kg/ha) | 120 to 240 |

Text:

Sibayan Sen, V. Sobhana and M. M. Reddy

For further details contact:

DIRECTOR

Central Sericultural Research & Training Institute
(ISO 9001 : 2008 Certified)

Central Silk Board, Min. of Textiles

Govt. of India, Srirampura, Mysore - 570 008

Tel: 0821-2362757, 2362406

Fax: 0821-2362845

Web: www.csrtimys.res.in

Email: csrtimys.csb@nic.in

SOIL HEALTH AND FERTILITY MANAGEMENT

Soil Health is the Wealth of Sericulture



Central Sericultural Research & Training Institute
(ISO 9001 : 2008 Certified)
Central Silk Board, Min. of Textiles
Govt. of India, Srirampura
Mysore-570 008

Soil is fundamental to crop production. It is a living medium, which serves as a natural nutrient source for growth of plants. The ability of soil to provide all essential plant nutrients in available forms and in a suitable balance is called soil fertility or soil health. Soil health is the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals and humans. Hence, balanced use of fertilizer is vital for improving productivity without deteriorating soil health.

All crops remove nutrients from the soil but when removal exceeds inputs, nutrient depletion occurs - a condition that is not sustainable and therefore fertilization practices need to be "balanced". Components of balanced fertilization include judicious use of chemical fertilizers in conjunction with organic manures and bio-fertilizers. Use of soil amendments for acidic/alkaline soils also needs to be promoted to improve soil health and adequate nutrient availability in soil. The amounts of major nutrients added through fertilizers must be based on what is already in the soil and what is removed by the crops. A proper soil test helps ensure the application of sufficient fertilizers to meet the requirements of the crop while taking advantage of the nutrients already present in the soil.

Soil sampling and testing

Soil testing is conducted to assess the fertility status of soil and to recommend required inputs like fertilizers and manures.

It also helps to determine the amount of amendments for problematic soil. Proper collection of soil samples for testing is the most important step in any nutrient/soil amendment management program.

Steps for collection of soil samples

- Remove the litters at the surface of sampling spots
- Collect surface soil from 25-30 spots randomly in a zig-zag pattern
- Select six to eight spots, dig up to 30 cm, scrape the sides of each pit and collect soil from all the pits in a cloth bag
- Same dugged pit to be deepened to 60 cm, scrape the sides from 30-60 cm and collect the soil in a separate bag
- Soil samples of the same depth of all the pits to be mixed well and spread as a thin layer in a cloth/plastic sheet/news paper for air drying in the shade
- Pick up and throw pebbles, debris, litter *etc.*
- Dried soil is to be spread in round shape and divide into four equal quarters
- Discard the soil mass of opposite quarters, mix the remaining two quarters again and repeat the same process to get 300-500 g of soil sample
- Surface, 0-30 cm and 30-60 cm soil samples to be packed separately in cloth/plastic bags, sent for testing with proper labels
- Labels should contain the name of the farmer, address, survey no. *etc.*

Points to be considered

- Collect soil samples after the pruning of mulberry plants and before the application of manures/fertilizers
- Do not collect samples immediately after rainfall and irrigation
- In the standing crop, collect samples between rows
- Avoid soil collection near trees, irrigation/drainage channels, bunds, shady spots, compost pits and near roots of mulberry plants
- If soil is not of same colour, texture, etc. make separate blocks and collect samples from each block.



Surface soil sample collection



0 to 30 cm soil sample collection



30 to 60 cm soil sample collection



Mixing and spreading of soil sample