Soil Suitable for Mulberry Cultivation - FAQ’s

01. What is Soil Fertility?
   Soil Fertility is the capacity of soil to provide all essential nutrients to plants in available form.

02. How to know the Soil Fertility?
   Soil Fertility can be known by soil testing.

03. What is Soil Productivity?
   It is the capacity of soil to produce crops. It is measured influencing leaf yield.

04. What is Soil Testing?
   The scientific analysis of soil samples for its properties to improve the Agronomical practices.

05. What are main objectives of the soil testing?
   a) To know the soil fertility
   b) To know the soil provoems i.e., Acidic soil or alkaline soil or socid soil and reclaim the soil by using lime or gypsum.

06. Explain the soil sampling method?
   Soil sampling can be done on selected spot first scrap the surface to remove litter and organic material. Then make ‘V’ shaped or tube shape pit to a depth of 30 cm then cut the slice from top to bottom to a thicker of one inch. Collect the soil in a clean container.

07. What is the composite soil sample? Explain.
   These samples taken from 05-06 selected should be mined well in a container or on a clean cloth by breaking all clods etc., with a wooden hammer. Romove pebby, plant and animal residues other foreign materials etc. The composite sample should be reduced by successive quartering to about 500 gm to about 500 gm to 600 gm.

08. How to send soil samples to laboratory?
   The representative soil samples collected should be dried under shade. Afterwards these samples can be packed in bags polythene cover outside or
ordinary clean cloth (coro cloth) bags and sent to the soil testing laboratory along with detailed field information sheet.

09. What are the precautions to be taken for collecting the soil samples?
Soil samples should be collected after 2 months of application of Farm Yard manure or chemical fertilizer for soil saplings do not select the spot near the compost pit, near the roads and bunds, near the irrigation channels shady place (below the tree) and old FYM heap. For drying the soil samples should not use fertilizer bags.

10. What is the suitable reason for collecting the soil samples from the mulberry gardens?
December to May is the suitable season for collection of soil samples from the mulberry gardens.

11. What are the soil parameters to be tested in soil testing laboratory?
In soil testing laboratory soil parameters such as pH, electrical conductivity, organic carbon, available nitrogen, available phosphorus, potash and sulphur contents and micronutrients viz., Zu, Fe, Mn, Cu and Boron are tested. Lime requirement for acidic soil and gypsum requirement for alkaline soil also tested.

12. What is soil pH? Its advantages?
Soil pH is the negative Hydrogen ion concentration of soil. It can be used to decide the soil as acidic as neutral and alkaline soil basic soil.

13. What is electrical conductivity (EC) of soil? How its effect on mulberry?
Soluble salts in the soil indicates the soil health. For mulberry cultivation the required electric conductivity of soil is less than 1.0 dsm\(^{-1}\) based on the quantity of soluble salts in the soil. Soil is grayed into three type \(i.e.,\) normal soil (<1. dsm\(^{-1}\) , 1-2 dsm\(^{-1}\) ---------- ----- soil and most problematic soil (<2dsq-1).

14. What indicates organic carbon in the soil?
Organic carbon in the soil indicates quantity of organic matter and capacity of supply of nitrogen present in the soil. Based on the organic carbon content in the soil help to recommend the supply of quantity of nitrogen and farm yard manure to the mulberry gardens.
15. Mention the quantity of organic carbon centre in the organic soil for irrigated mulberry gardens?
In irrigated mulberry garden the organic carbon content in the normal soil nearly in the from 0.5% to 1.0%. The quantity of organic carbon in the soil for irrigation mulberry garden classified as less (<0.5%), medium (0.5 to 1.0%) and more (>1.0%).

16. Mention the quantity of organic carbon content in the normal soil for rainfed mulberry gardens?
In rainfed mulberry gardens the organic carbon content in the normal soil ranges from 0.5% to 0.75%. The quantity of organic carbon in the soil for rainfed mulberry gardens classified a less (0.5%), medium (0.5% to 0.75%) and more (>0.75%).

17. What are the micronutrients of the soil can be analysed in the soil testing laboratory?
Zinc, iron, manganese, copper and boron and are the micronutrients available in the soil can be analysed in the soil testing laboratory.

18. What is zinc deficiency of soil and how to reclaim it?
The zinc content in the mulberry gardens is less than 2.0 ppm is called zinc deficiency of soil. It can be reclaimed by applying 8 to 10 kg of zinc sulphate per acre of mulberry garden soil once in 2-3 years on the basis of soil testing.

19. What is iron deficiency of soil and how to reclaim it?
The iron content in the mulberry garden is less than 2.5 ppm is called iron deficiency. It can be reclaimed by applying 5-6 kg of ferrous sulphate per acre of mulberry garden soil once in 2-3 years on the basis of soil fertility.

20. What is manganese deficiency of soil and how to reclaim it?
The manganese content in the mulberry garden soil in leaf then 4.0ppm is called manganese deficiency of soil. It can be reclaimed by applying 5 to 6 kg of manganese sulphate prevailing of mulberry garden soil once in 2-3 years on the basis of soil testing.

21. What is acidic soil?
The soil having less than 6.2 pH is called acidic soil.

22. How to reclaim the acidic soil?
Acidic soil can be reclaimed by applying lime. Calcium content in the lime occupies the hydrogen of the soil helps to reduce the acidity.

23. What is the lime materials used to reclaim the acidic soil?
Lime neem agriculture lime (calcium carbonate or lime stem powder or lime stone or dolomite) and calcium hydroxide are used for acidic soil.

24. What are the uses for applying lime to acidic soil?
   a) Increases the soil pH by reducing the hydrogen content of the soil.
   b) It avoids the harmful effect of base material by reducing the control of ammonium, manganese and iron.
   c) It increases the availability of calcium, magnesium, potassium, nitrogen and phosphorus.
   d) It improves the soil structure and increases the activity of microorganisms.

25. How much lime required for acidic soil?
Quantity of lime can be applied to acidic soil in based on the soil testing report. It depends on the soil pH, clay content and organic matter content of the soil.

26. What is the method of applying lime and suitable season?
Locally available lime can be well powder and mix in the soil. Lime can be apply to the mulberry garden based on soil testing results ok 06 weeks before transplanting of mulberry saplings. Lime can be applied once in 2 or 3 years based on soil testing. Lime can be applied but preferably in the monsoon. At the time of application of lime sufficient moisture in the soil should be maintained.

27. What is a lime soil?
The soil heavy less than 8.5 pH, more than 4 dSm-1 electrical conductivity and less than 15% exchangeable sodium content M called saline soil.

28. What is cause of salinity in the soil?
   a) In dry weather area due to the more sun heat, evaporation of moisture is more than the rainfall. In such situation the salts in the soil should not drained or reach from the soil. So salts are accumulate in soil create salinity of the soil.
   b) Soil obtained from salted formal rock or sea water having salinity by birth.
c) If there is no proper drainages in the irrigated area, water should not drained out from the field/garden. So salts are accumulated in the soil create salinity.

d) Use of salt producing chemical fertility causes salinity of soil.

29. What is the reclamation of soil nutrients?
Soil salinity can be reclaimed by reducing the quantity of soluble salts in the soil. For the first plough the land levels it and forms bunds. While ploughing care should be taken that soil should not turned. Provide drainage for draining of water from the bed. Then allow good quality of water standing in the land. Repeat two or three times by draining water to reclaim salinity. For this soil provide more farmyard manure or green manure to reduce the effect of salts.

30. What is the cause of alkalinity?
Soil salinity is the first stage of soil alkalinity. More salts in the soil increases the sodium content which exchangeable form in the soil exchange with calcium and magnesium salts causes alkalinity.

31. Reform of soil alkalinity and management system?
By recommending or reducing the quantity of sodium in soil to reclaim the soil alkalinity garden of alkaline soil has to be ploughed well without turning the soil, level it with bunds. Then provide drainages as per the soil conservation method to flow water. Apply gypsum bases on soil testing with 20 tons of Farmyard manure per hectare. Also -------------- in the garden and incorporating in the soil to reclaim soil alkalinity.

32. What is the suitable soil to grow mulberry?
In general mulberry can be grown in all type of soil, particularly red loam, red sandy, loam soil are best. Soil should be well drained, good purity and good water holding capacity.

33. To one acre mulberry garden what is the recommended dose of Farm Yard manure?
To one acre mulberry garden provide minimum 8 tons of Farm yard manure in one year in two split doses (4 tons at monsoon (Kharif season) June & July months and 4 times during Rabi season – October & November).

34. In shoot harvest method for one hectare irrigated M5 mulberry garden for one year what is the recommended dose of chemical fertilizer?
In shoot harvest method for one hectare irrigated mulberry garden for one year applying 300:120:120 kg nitrogen, phosphorus and potash respectively in 5 equal split doses is recommended.

35. What is the recommended doses of chemical fertility for one hectare irrigated V-1 mulberry garden (leaf harvest method) in one year?
Recommended doses of chemical fertilizer for one hectare. Irrigation V-1 mulberry garden (leaf harvest method) in one year in 350:48:48 kg nitrogen, phosphorus and potash respectively in six equal doses.

36. What is the recommended dose of chemical fertilizer for one hectare irrigated V1 mulberry garden?
Recommended dose of chemical fertilizer for one hectare irrigated V1 mulberry garden is 350:140:140 kg nitrogen, phosphorus and potash respectively in five split doses.

37. What is the recommended dose of chemical fertilizer for one acre irrigated M5 mulberry garden (shoot harvest method) in one year?
Recommended dose of chemical fertilizer for one acre irrigated M5 mulberry garden (shoot harvest method) in one year is 120:48:48 kg nitrogen, phosphorus and potash respectively in 5 equal split doses.

38. What is the recommended dose of chemical fertilizer for one acre irrigated M5 mulberry garden (leaf harvest method) in one year?
Recommended dose of chemical fertilizer for one acre irrigated M5 mulberry garden (leaf harvest method) in one year is 110:48:48 kg nitrogen, phosphorus and potash respectively in 6 equal split doses.

39. What is the recommended dose of chemical fertilizer for one acre irrigated V1 mulberry garden in one year?
Recommended dose of chemical fertilizer for one acre irrigated V1 mulberry garden in one year is 140:56:56 kg nitrogen, phosphorus and potash respectively in 5 equal split doses.

40. What is the recommended dose of chemical fertilizer for one hactre mulberry garden in hilly areas?
Recommended dose of chemical fertilizer for one hactre mulberry garden in hilly area one year is 250:100:100 kg nitrogen, phosphorus and potash respectively in 5 equal split doses.
41. What is the recommended dose of Farm yard manure for one acre mulberry garden in hilly areas?
Recommended dose of Farm yard manure for one acre mulberry garden in hilly area one year is 20 tons in 2 equal split doses.

42. What is the recommended dose of Farm yard manure and chemical fertilizer for one hectare rainfed mulberry garden for one year?
For one hectare rainfed mulberry garden in one year recommended dose of Farm Yard manure is 10 tons and chemical fertilizer is 100:50:50 kg nitrogen, phosphorus and potash respectively in two equal split doses. First dose of chemical fertilizer is 50:50:50 kg nitrogen phosphorus and potash respectively should be given before first time leaf picking and second dose 20 kg nitrogen should begin after two or three weeks of second time leaf picking.

43. What is the recommended dose of Farm yard manure and chemical fertilizer for one acre rainfed mulberry garden?
For one acre rainfed mulberry garden in one year recommended dose of Farm Yard manure is 04 tons and chemical fertilizer is 40:20:20 kg nitrogen, phosphorus and potash respectively in two equal split doses. First dose of chemical fertilizer is 20:20:20 kg nitrogen phosphorus and potash respectively should be given before first time leaf picking and second dose 20 kg nitrogen should begin after two or three weeks of second time leaf picking.

44. What is straight fertilizer? Mention types of straight fertilizer?
A fertilizer having only one nutrient is called straight fertilizer.
Types of straight fertilizer:
   a) Nitrogen supplying straight fertilizer
   b) Phosphorus supplying straight fertilizer
   c) Potassium supplying straight fertilizer

44. What are the Nitrogen supplying straight fertilizer?
   1) Ammonium sulphate (20 % N)
   2) Calcium Ammonium Nitrate (25 % N)
   3) Urea (46 % N)
   4) Ammonium Nitrate (32.33 % N)
   5) Ammonium chloride (26 % N)

46. What are the Phosphorus supplying straight fertilizer?
1) Super phosphate (16 % $P_2O_5$)
2) Rock phosphate (28 % $P_2O_5$)

47. What are the Potash supplying straight fertilizer?
   1) Murate of potash (60 % $K_2O$)
   2) Potassium sulphate (50 % $K_2O$)

48. What is compound fertilizers and mention them?
   A fertilizer having more than one and not more than two nutrients is called compound fertilizer.
   Eg. Di Ammonium Phosphate (DAP) (18 % N, 46 % $P_2O_5$)

49. What is complex fertilizer? Mention them?
   A fertilizer having three nutrients is called complex fertilizer.
   Eg. 15 X 15 X 15 NPK
       17 X 17 X 17 NPK
       19 X 19 X 19 NPK
       10 X 10 X 10 NPK