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PREPARATION OF FRESH BORDEAUX MIXTURE AND BORDEAUX PASTE

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Bordeaux mixture and paste are commonly being used by farmers in different crops for controlling many fungal and bacterial diseases. However, its effectiveness depends on the right method of preparation. Please follow the below mentioned steps for best results.

I. Bordeaux Mixture

(a) Requirements

Copper Sulphate, Quick lime (Calcium Oxide) **OR** Hydrated lime (Calcium Hydroxide), Jute Bag, Muslin cloth Sieve or fine Strainer, vessel (Earthen/plastic/wooden) and Wooden/Plastic stick.

Bordeaux Mixture		
Ingredient	Quantity Required for Preparation of Bordeaux Mixture	
	1.0 %	0.5%
Copper Sulphate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$)	1 kg	0.5 kg (500 g)
Quick lime/Calcium Oxide (CaO) or Calcium hydroxide $\text{Ca}(\text{OH})_2$ [Use fresh stocks]	300-400 g*	150-200 g*
Water	100L	100 L

*Depending on purity

(b) Method

- Dissolve Copper sulphate overnight in half the quantity of water in one container (suspend in a jute bag to facilitate dissolving).
- Slaked / Quick lime (Calcium oxide), suspend in remaining half quantity of water in another container, and strain through a fine sieve. If quick lime is not available, hydrated lime ($\text{Ca}(\text{OH})_2$) can be used.

- Keep 200 ml of each solution for adjusting pH of solution.
- The two solutions are then poured together through a strainer into a third vessel or spray tank, constantly stirring for 20-30 minutes vigorously with wooden stick.
- This gives the most finely divided precipitate.

(c) Important Tests

- (i) **pH Test:** To test the pH of mixture, use portable pH Meter OR pH paper of good quality and match the colour of mixture to pH 7. If colour of pH paper is below 7, add some lime solution from 200 ml kept for adjusting pH; If colour of pH paper is above 7 add more copper sulphate solution from 200 ml kept to bring to pH 7. Adjust the pH to near 7.
- (ii) **Test for Bordeaux mixture:** The Bordeaux mixture prepared should not have excess copper in it, as it is toxic to plants. To test this, dip an iron knife or a nail in the upper layer of the solution for a few minutes. A brick red or rusty brown deposition on the metal surface indicates presence of excess copper in the mixture. In such a situation add more lime solution to the mixture till no rust appears on the iron knife.

		
Weigh required quantity of Lime and Copper sulphate and soak separately overnight in water.	Next day strain through sieve and mix simultaneously in third container.	Check and adjust pH to near 7.0
Preparation of Bordeaux Mixture		

(d) Points to Remember

- Use Bordeaux mixture immediately after preparation.
- Do not use iron or galvanized vessels for the preparation of copper sulphate solutions. Use plastic vessels, earthen or wooden barrels.

- Do not mix Bordeaux mixture with other chemicals or pesticides except insecticides like Chlorpyrifos or those recommended as per requirement.
- Always strain the mixture through a sieve before adding it to spray tank.

II. Bordeaux Paste

Bordeaux paste used for pasting tree trunks up to 1.5-2.0 feet from ground level should be 10% concentration. The ingredients and quantity required for preparation of 10% Bordeaux Paste are given below in the table.

10% Bordeaux Paste	
Ingredients	Quantity
Copper Sulphate (CuSO ₄ . 5H ₂ O)	1 kg
Quick lime/Calcium Oxide (CaO) or Calcium hydroxide Ca(OH) ₂ [Use fresh stocks]	1 kg
Water	10 L

Use the same procedure as above for preparation. Soak both ingredients separately overnight in 5 litre water. Mix together in the morning thoroughly to make thick paste. Here pH test is not required.

NOTE: For details can see video of the DD Kisan program Khet Khaaliyan on the Link given below: <https://www.youtube.com/watch?v=JXwWBDiUdyA>.
