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CHEMICAL CONTROL OF DISEASES

(This circular supercedes Advisory Circular PU 2, serial No. 04/08, issued in November 2008 and links with Circular Nos. DM1, DM2, DM3, DM4 & DM5)

1. Introduction

For disease management in tea, an integrated approach inclusive of cultural, biological and chemical methods is recommended as specified in Advisory Circular DM 1 - 6. Majority of tea diseases are caused by fungi. Chemicals used in the control of fungal diseases are called fungicides.

Two fundamental groups of fungicides are used to control tea diseases. They are either contact or systemic. Contact fungicides can kill a pathogen (fungus) only upon contact and are not absorbed into plant tissues. Systemic fungicides on the other hand have the ability to be absorbed into plant tissues and therefore may leave behind residues for a longer period with better controllability. This can become counterproductive when it comes to residues in the final product (made tea). This makes necessary to take all the precautions in resorting to control diseases using systemic fungicides.

It is very important to use only the recommended fungicides as per TRI guidelines following the required Pre Harvest Interval (PHI).

2. Blister Blight Disease

Active ingredient (a.i)	Trade names	Nursery		Fields not in plucking (Immature/pruned)		Plucking fields		
		Dosage (for 30,000 plants)	Spray interval (days)	Dosage (per hectare)	Spray interval (days)	Dosage (per hectare)	Spray interval (days)	PHI (wks)
Contact Fungicides								
Copper oxide	Perenox	120 g/ 45 L water	4	450 - 560 g/ 170 L water	4 - 5	280 - 420 g/ 170 L water Refer*	7 - 10	1
Copper oxychloride	Cobox							
Copper hydroxide	Champion Champ Kocide	90 g/ 45 L water	4	320 - 420 g/ 170 L water	4 - 5	220 - 320 g/ 170 L water Refer *	7 - 10	1
Systemic Fungicides								
Hexaconazole	Contaf 5 E Shakthi	25 ml/ 45 L water	10	85 ml/ 170 L water	10	Refer **	7	1
Tebuconazole	Folicur 250 EW	25 ml/ 45 L water	10	85 ml/ 170 L water	10	Temporarily suspended		
Propiconazole	Tilt 250 Bumper	25 ml/ 45 L water	10	85 ml/ 170 L water	10			
Bitertanol	Baycor 300 EC	25 ml/ 45 L water	10	85 ml/ 170 L water	10			

* Dilution given above are for knapsack sprayers (high volume spray). Mist blowers (low volume spray) are recommended only for plucking fields diluting the above dose in 40L water. Lower dosage of copper fungicide is for normal monsoon conditions and the higher dosage is for misty and cloudy conditions.

** Cocktail mixture of 43 ml of Hexaconazole - either with 140 g Copper oxychloride/ Copper oxide or 110 g Copper hydroxide

3. Black Blight Disease

This disease is confined to Low country regions.

Active ingredient	Trade name/s	Dosage	Application rate	PHI (Weeks)	Remarks
Copper oxide copper oxychloride Copper hydroxide	Perenox Cobox Kocide Champion	0.25% solution (25 g in 10 L or 11.3 g in 4.5 L (1 gallon) of water	Apply 170 L of solution per hectare per application with a knapsack sprayer	1	If the rain continues, second spraying should be undertaken after fortnight

4. Red Rust Disease

This disease is confined to Low country regions. When applying chemicals, it is essential to wet the green stems and the older wood with the spray solution, on which the alga is sporulating.

Active ingredient	Trade name/s	Dosage	Application rate	PHI (Weeks)	Remarks
Copper oxide copper oxychloride Copper hydroxide	Perenox Cobox Kocide Champion	0.25% solution (25 g in 10 L or 11.3 g in 4.5 L (1 gallon) of water. Apply three rounds a year	Apply 170 L of solution per hectare per application with a knapsack sprayer	1	For young tea, first spray in late April. second spray in May. Third spray in June

5. Stem and Branch Canker Disease

Active ingredient	Trade name/s	Dosage	Application rate	PHI (Weeks)	Remarks
Bitertanol	Baycor 300EC	0.05% solution. 5 ml in 10 L of water or 2.25 ml in 4.5 L (1 gallon) of water	Apply 170 L of solution per hectare per application with a knapsack sprayer	2	In new clearings, apply the fungicide once in 2-3 months, with a knapsack sprayer, from the time of planting up to the first prune

6. Red Root Disease

Active ingredient	Trade name/s	Treatment of peripheral bushes	Treatment of infills	Frequency of application
		Apply 250 - 350 ml of solution per bush		
Bitertanol	Baycor 300EC	0.3% solution. 30 ml in 10 L or 13.5 ml in 4.5 L (1 gallon) of water	0.2% solution. 20 ml in 10 L or 9 ml in 4.5 L (1 gallon) of water	Minimu of 3 rounds at 2-3 monthly intervals
Hexaconazole	Contaf 5 E	0.2% solution. 20 ml in 10 L or 9 ml in 4.5 L (1 gallon) of water	0.1% solution. 10 ml in 10 L or 4.5 ml in 4.5 L (1 gallon) of water	
Propiconazole	Tilt 250			
Tebuconazole	Folicur 250			

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