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Serial No. 03/24

## CHEMICAL CONTROL OF WEEDS IN TEA LANDS

*(This Advisory Circular supersedes the Advisory Circular PU 3, Serial No. 03/23 issued in May 2023 and previous related circulars and links with Circular No. WM1, Serial No.24/24 issued in February 2024)*

Integrated Weed Management (IWM) approach includes manual, mechanical, cultural and chemical methods (in rotation) as specified in TRI Advisory Circular WM 1. The use of herbicides has some advantages, such as selectivity and cost-effectiveness, but sometime, causes crop damages, residue issues and environmental problems that need to be avoided by limiting the number of applications to two rounds per annum and strictly adhering to the recommended rate.

When using herbicides, the TRI recommendations should always be followed along with a minimum of one week Pre-Harvest Interval (PHI). Precautions should also be taken to avoid spray drift onto the tea foliage and green stems.

### 1. Common Weeds

A volume of 450 - 500 L of herbicide solution is required to cover one hectare of tea field when using a Knapsack sprayer fitted with a nozzle having a swathe of 0.5 – 1 meter at 1 - 2 bars pressure, while holding the nozzle at 35 - 50 cm above the ground.

#### 1.1 Fields not in plucking (new clearing/pruned until tipping)

Active ingredient (a.i.)	Trade name/s	ROP Registration No.	Dosage/hectare	Remarks
Oxyfluorfen (24%)	Goal 2E	H260000	1.2 L in 500 L of water (10 ml in 4.5 L of water)	Apply to bare moist soil.
Oxyfluorfen (48%)	Goal 4F	M550000	700 ml in 500 L of water (6 ml in 4.5 L of water)	

### 1.2 Plucking fields (mature fields/ after the first prune)

Active ingredient (a.i.)	Trade name/s	ROP Registration No.	Dosage/hectare	Remarks
Diuron (80% WP)	Hayleys Diuron	K570700	1.2 kg in 500 L of water (10.8 g in 4.5 L of water)	Apply to bare <u>moist soil</u> only (as a pre-emergent weedicide).
	Ducron Diuron	K570500		
	Oasis Diuron	K570100		
	Viron Diuron	K570000		
	CIC Diuron	K570300		
	Agstar Diuron	K570200		
	Plantchem Diuron	K570400		
Diuron liquid 50% SC	Liquido Diuron	M590000	1.5 L in 500 L of water (13.5 ml in 4.5 L of water)	Apply to bare <u>moist soil</u> (as pre and post emergent weedicide).
Oxyfluorfen (24%)	Goal 2E	H260000	1.2 L in 500 L of water (10.8 ml in 4.5 L of water)	Apply to bare <u>moist soil</u> .
Oxyfluorfen (48%)	Goal 4F	M550000	700 ml in 500 L of water (6.3 ml in 4.5 L of water)	
Glyphosate (36% w/v)	Ceypetco Glyphosate	N530200 N540200	2.5 L in 500 L of water (22.5 ml in 4.5 L of water)	For new clearings and pruned fields, avoid spraying.
	Glytoll Glyphosate	N530300 N541000		
	Fast Glyphosate	N530400 N541100		
	Countup Glyphosate	N530500 N541500		
	ICS Glyphosate	N530600 N540500		
	CIC Glyphosate	N540300		
	Sunpower Glyphosate	N540400		
	Browns Glyphosate	N540600		
	D-Dash Glyphosate	N540700		
	Countlan Glyphosate	N540800		
	Pure Glyphosate	N540900		
	Comeon Glyphosate	N541200		
	Hayleys Glyphosate	N541300		
	Robin Glyphosate	N541400		
	G2 Glyphosate	N541600		
	Jivro Glyphosate	N541700		

	Uproot Glyphosate	N541800		
	Major Glyphosate	N541900		
	Baursate Glyphosate	N542000		
Glufosinate ammonium	Lifeline Glufosinate Ammonium (28% 280 g / L SL)	M890100	700 ml in 500 L of water (6.3 ml in 4.5 L of water)	Apply as a post-emergent and non-selective weedicide.
	Zagro Glufosinate Ammonium (15% 150 g / L SL)	N910000	1.4 L in 500 L of water (12.5 ml in 4.5 L of water)	
MCPA 60%	Haydol MCPA 60 Harcros MCPA 60	0070000 0070001	2.0 L in 500 L water (18 ml in 4.5 L of water)	Spray to control only broad- leaf weeds such as Girapala (Amalai), Getakola ( <i>Borreria</i> ), Wathupalu ( <i>Mikania</i> ), <i>Polygonum sp.</i> and Morning glory as a spot application. Strictly avoid spraying on to tea foliage.
Glyphosate Iso propyl Amine 29.3% + MCPA Iso propyl Amine 5.8%	RAPID	Q380000	2.5 L in 500 L of water (22.5 ml in 4.5 L of water)	For new clearings and pruned fields, avoid spraying.

## 2. Hard- to- kill Weeds

The following cocktail mixtures are recommended as spot application to control the hard-to-kill weeds in tea fields.

Weed type	Dosage per 200 square meter
Getakola ( <i>Spermacoce ocymifolia</i> ) Wal Bovitiya ( <i>Miconia crenata</i> )	24 g of Diuron (80%) + 28 ml of Glyphosate per 10 L of water
Couch ( <i>Panicum repens</i> )	200 ml of Glyphosate in 10 L of water
	100 ml of Glyphosate + 60 g Kaolin in 10 L of water
Illuk ( <i>Imperata cylindrica</i> )	100 ml of Glyphosate in 10 L of water
	50 ml of Glyphosate + 60 g Kaolin in 10 L of water



### 3. Guidelines for safe and effective use of herbicides

- a) Adopt a selective spraying program in order to retain desirable weeds and to control resistant weeds. Such resistant weeds should be treated with specific herbicides at dosages recommended. Alternately, other more effective control measures may be adopted.
- b) Select the most suitable herbicide based on the range and growth stage of weed species present in the field. Use correct dosage of herbicide and mix thoroughly in clean water and then make up the spray volume required to cover the area to be treated. Wash spray tanks thoroughly in clean water before use to avoid any contamination.
- c) Maintain the number of herbicide applications for the year to a minimum (maximum two from a single herbicide), and use a range of herbicides of different mode of action in rotation than continuing with a single herbicide. This would help in preventing build-up of resistant weed species.
- d) Do not spray herbicides on creepers growing over the tea bush. These should be pulled down and laid on the inter-row space and then sprayed. Mature woody plants and deep-rooted species should be slashed, and the regrown tender parts to be sprayed.
- e) Spray weedicides, when weeds are relatively young, before they flower / bear seeds.
- f) Select a calm day for spraying, as wind could carry the spray drift away from the intended area of spray. Also avoid spraying during very hot period of the day.
- g) Use a spray guard when spraying on the inter-rows of tea. This would prevent excessive spray drift on to peripheral branches and green stems.
- h) Use lever operated, diaphragm type Knapsack sprayers which are more appropriate for herbicide applications. All sprayers must be checked for proper performance and, the trigger valves and nozzles need to be checked for leaks.
- i) Use the correct type of Poly jet / Flood jet nozzles (yellow: swathe 0.5 m, spray output 0.6 L per minute or green: swathe 1.0 m, spray output 1.2 L per minute).
- j) Wear protective clothing when mixing and spraying herbicides.
- k) Clean the tank, nozzle and lance after use thoroughly and wash the self and protective clothing used. Do not throw empty herbicide containers (particularly into streams and waterways).
- l) Supervise the entire operation carefully to ensure safe and effective weed control.
- m) Store agro-chemicals separately to prevent mishandling.
- n) Maintain proper records of purchases, storage, issuance and usage of herbicides.

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