[1]**Annexure-5**

PESTICIDES RECOMMENDED FOR THE CONTROL OF VARIOUS DISEASES AND INSECT PESTS OF TABLE GRAPES FOR EXPORT TO THE EUROPEAN UNION IN 2009-2010

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S. No.	Pesticide recommended for major disease and pest	Nature of pesticide	Dose on formulation basis	EU MRL (mg/kg) as per 1st July 2009	Pre-harvest Interval (PHI in days)
I	**Downy Mildew**				
1.	Mancozeb 75 WP	NS	1.50-2.00 g/L	5.0	35 (Avoid using after fruit set)
2.	Ziram 80 WP, 27SC	NS	1.50-2.00 g/L, 3.5 mL/L	0.10	66 (Avoid using after fruit set)
3.	Propineb 70 WP	NS	3.00 g/L	1.0	40 (Avoid using after fruit set)
4.	COC 50 WP	NS	2.50 g/L, 2.40g/L	50.0	42 (Avoid using after fruit set)
5	Copper hydroxide 77 WP	NS	2.00 g/L	50.0	42 (Avoid using after fruit set)
6.	Bordeaux Mixture (Copper Sulphate+ Lime (ISI mark chemicals preferred))	NS	Pre-sprouting 1.00 % Post-sprouting 0.50%	50.0	42 (Avoid using after fruit set)
7.	Captan 50 WP, 75 WP	NS	2.50 g/L, 1.67 g/L	0.02	60
8	Chlorothalonil 75 WP	NS	2.00 g / L	1.0	60
9.	Fosetyl AL 80 WP	S	1.40-2.00 g/L	100.0	7
10.	Metalaxyl + Mancozeb 8+64 WP	S+NS	2.50 g/L	2.0 + 5.0	66
10a.	Metalaxyl-M + Mancozeb 4+64 WP	S+NS	2.50 g/L	2.0 + 5.0	66
11.	Cymoxanil + Mancozeb 8+64 WP	S+NS	2.00 g/L	0.2 + 5.0	66

[1] Recommendation of pesticides for the management of various insect pests and diseases along with their dose, PHI and MRL values are of advisory nature for the good viticulture practices and therefore, not covered under any legal scrutiny.

S. No.	Pesticide recommended for major disease and pest	Nature of pesticide	Dose on formulation basis	EU MRL (mg/kg) as per 1st July 2009	Pre-harvest Interval (PHI in days)
12	Dimethomorph 50 WP + Mancozeb 75WP as tank mixture	S + NS	0.50 to 0.75 g/L + 2.00g/L	3.0 + 5.0	66
13	Fenamidone + Mancozeb 10+50 WG	S + NS	2.5 to 3 g/L	0.5 + 5.0	66
14.	Azoxystrobin 23 SC	S	200.00 mL /Acre	2.0	7
15.	Iprovalicarb + Propineb 5.5+61.25WP	S +NS	2.25 g / L	2.0 + 1.0	55
16	Famoxadone 16.6 % + Cymoxanil 22.1 % SC	S + NS	500 ml / ha	2.0 + 0.2	27
17	Kresoxim methyl 44.3 SC	S	600-700 mL / ha	1.0	7
18	(Pyraclostrobin 5% + Metiram 55%) 60 WG	S + NS	1.5 – 1.75 kg / ha	1.0 + 5.0	15
19	Fenamidone 4.44% + Fosetyl Al 66.66% WDG	S	2.0 to 2.5 kg / ha	0.5 + 100	27
II	**Powdery Mildew**				
20.	Penconazole 10 EC	S	0.50 mL/L	0.2	50
21.	Triadimefon 25 WP	S	0.50-1.00 g/L	2.0	45
22.	Myclobutanil 10 WP	S	0.40 g/L	1.0	30
23.	Flusilazole 40 EC	S	25.00 mL / 200.00L	0.05	50
24.	Fenarimol 10 EC	S	0.40 mL / L	0.3	30
25.	Difenoconazole 25EC	S	0.50 mL / L	0.5	45
26.	Tebuconazole 25SC	S	0.50 ml / L	2.0	50
14a.	Azoxystrobin 23 SC	S	200.00 mL / Acre	2.0	7
17a	Kresoxim methyl 44.3 SC	S	600-700 ml / ha	1.0	7
27.	Dinocap 48 EC	NS	0.30 - 0.35 mL/L	0.05	50 (avoid when tender shoots are present in canopy)
28.	Sulfur 40 SC, 55.16 SC, 80 WP, 80 WDG, 85 WP	NS	3.00 mL, 3.00mL, 2.50 g, 1.87-2.50 g, 1.50-2.00 g per L respectively	50.0	15

S. No.	Pesticide recommended for major disease and pest	Nature of pesticide	Dose on formulation basis	EU MRL (mg/kg) as per 1st July 2009	Pre-harvest Interval (PHI in days)
29.	Potassium bi-carbonate	NS	5.00 to 10.00 g / L	--	--
30.	Azadirachtin 0.03% (Tricure)	Neem based EC formulation	4.00 mL/L	1.0	2
III	**Anthracnose**				
2a.	Ziram 80 WP, 27SC	NS	1.50-2.00 g/L, 3.50 mL/L	0.10	66
3a	Propineb 70 WP	NS	3.00 g/L	1.0	40
4a.	COC 50 WP	NS	2.50 g/L, 2.40g/L	50.0	42 (Avoid using after fruit set)
5a.	Copper hydroxide 77 WP	NS	2.00 g/L	50.0	42 (Avoid using after fruit set)
31.	Iprobenphos (Kitazine) 48 EC	S	2.00 mL/L	0.01	50
32.	Carbendazim 50 WP, 46.27 SC	S	1.00 g/L, 1.00 mL/L	0.3	50
IV	**Post harvest berry rots**				
33.	Iprodione 50 WP	NS	2.00 g / L	10.0	7
V	**Flea beetles**				
34.	Imidacloprid 200 SL	S	0.30 mL/L	1.0	60
35.	Thiamethoxam 25 WG	S	0.25 g/L	0.5	40
36.	Lambda-cyhalothrin 05 EC/CS	NS	0.50 mL/L	0.2	30
37.	Clothianidin 50 WDG	S	0.12 g/L	0.60	40
VI	**Thrips**				
35a.	Thiamethoxam 25 WG	S	0.25 g/L	0.5	40
38.	Spinosad 45 SC	NS	0.25 mL/L	0.5	28
39.	Emamectin benzoate 05 SG	NS	0.22 g/mL/L	0.01	25
40.	Dimethoate 30 EC	S	1.00 mL/L	0.02	100 (Should not be used after blossom)
30a.	Azadirachtin 1% and 5% (Neemazal T/S 1%, Neemazal F 5%, Econeem plus 1%, Ozoneem Thrishul 1%)	Neem based EC formulation	1% & 5% @ 2.00 & 1.00mL/L	1.0	3
34a.	Imidacloprid 200 SL	S	0.30 mL/L	1.0	60
36a.	Lambda-cyhalothrin 05 EC/CS	NS	0.50 mL/L	0.2	30

S. No.	Pesticide recommended for major disease and pest	Nature of pesticide	Dose on formulation basis	EU MRL (mg/kg) as per 1st July 2009	Pre-harvest Interval (PHI in days)
37a.	Clothianidin 50 WDG	S	0.12 g/L	0.60	40
41.	Fipronil 5 SC Fipronil 80 WG	S	0.80 mL/L 0.05 g/L	0.005	60
VII	**Jassids**				
35b.	Thiamethoxam 25 WG	S	0.25 g/L	0.5	40
40a.	Dimethoate 30 EC	S	1.00 mL/L	0.02	100 (Should not be used after blossom)
30b.	Azadirachtin 1% and 5% (Neemazal T/S 1%, Neemazal F 5%, Econeem plus 1%, Ozoneem Thrishul 1%)	Neem based EC formulation	1% & 5% @ 2.00 & 1.00mL/L	1.0	3
34b.	Imidacloprid 200 SL	S	0.30 mL/L	1.0	60
36b.	Lambda-cyhalothrin 05 EC/CS	NS	0.50 mL/L	0.2	30
37b.	Clothianidin 50 % WDG	S	0.12 g/L	0.60	40
VIII	**Mealy bugs**				
42.	Chlorpyriphos 20 EC	NS	2.00 mL/L	0.5	40
43.	Buprofezin 25 SC	NS	1.25 mL/L	1.0	40
44.	Methomyl 40 SP	S	1.0 g/L	0.02	61 (one application only at pre-flowering stage)
34c.	Imidacloprid 200 SL	S	1.50 mL/L/vine as soil drench	1.0	60
34d.	Imidacloprid 70 WG	S	0.45 g/L/vine as soil drench	1.0	60
30c.	Azadirachtin 1% and 5% (Neemazal T/S 1%, Neemazal F 5%, Econeem plus 1%, Ozoneem Thrishul 1%)	Neem based EC formulations	1% & 5% @ 2.00 & 1.00 mL/L	1.0	3
IX	**Caterpillars (*Helicoverpa armigera* and *Spodoptera litura*)**				
30d.	Azadirachtin 1% and 5%	Neem based EC formulations	1% & 5% @ 2.00 & 1.00 mL/L	1.0	3
36c.	Lambda-cyhalothrin 05 EC/CS	NS	0.50 mL/L	0.2	30

S. No.	Pesticide recommended for major disease and pest	Nature of pesticide	Dose on formulation basis	EU MRL (mg/kg) as per 1st July 2009	Pre-harvest Interval (PHI in days)
38a.	Spinosad 45 SC	NS	0.25 mL/L	0.5	28
42a.	Chlorpyriphos 20 EC	NS	2.00 mL/L	0.5	40
44a..	Methomyl 40 SP	S	1.0 g/L	0.02	61 (one application only at pre-flowering stage)
X	**Mites**				
30e.	Azadirachtin 1% and 5 % (Neemazal T/S 1%, Neemazal F 5%, Econeem plus 1%, Ozoneem Thrishul 1%)	Neem based EC formulations	1% & 5% @ 2.00 & 1.00 mL/L	1.0	3
45.	Abamectin 1.9 EC	NS	0.50 mL/L	0.01	7
46.	Fenpyroximate 5 SC	S	1.5 mL/L	0.30	45

NS= Non systemic, S= Systemic, -- = MRL not applicable

Note

- All the doses mentioned above are for high volume sprayers, where normal spray volume is 1000 L/ha. Spray volume can however be changed as per the efficiency of sprayers used. However, the amount of each pesticide (active ingredient) recommended for 1 ha on the basis of 1000 L spray solution should be strictly maintained to minimize pesticide residues.
- Recommended PHI will be valid only if maximum 2 sprays are applied per fruiting season at 7-15 days interval at recommended doses except for Flusilazole. The PHI of flusilazole pertains to one application by foliar spray only.

Annexure – 9

List of pesticides to be analyzed in grapes in 2009-2010

Sr. No.	Chemicals	**Harmonized EU MRL dated 16th September 2009** (mg/kg)
	I) Organochlorine	
1	Aldrin(expressed as dieldrin)	0.01
2	Chlordane (cis & trans)	0.01
3	Chlorothalonil	1.00
4	DDT (all isomers)	0.05
5	Dicofol	2.00
6	Dieldrin (See Aldrin)	0.01
7	Endosulphan (All isomers)	0.50
8	Endrin	0.01
9	HCH (alpha & beta)	0.01
10	Heptachlor	0.01
11	Lindane	0.01
	II) Organophosphorus	
12	4-bromo-2-chlorophenol	0.01
13	Acephate	0.02
14	Chlorfenvinphos	0.02
15	Chlorpyriphos	0.50
16	Chlorpyriphos-methyl	0.20
17	Diazinon	0.01
18	Dichlorvos	0.01
19	Dimethoate (Including Omethoate)	0.02
20	Ethion	0.01
21	Etrimphos	0.01
22	Fenitrothion	0.01
23	Iprobenphos	0.01
24	Malathion	5.00
25	Methamidophos	0.01
26	Monocrotophos	0.01
27	Omethoate (refer to Dimethoate)	0.02

Sr. No.	Chemicals	Harmonized EU MRL dated 16th September 2009 (mg/kg)
28	Oxydemeton-methyl	0.02
29	Parathion ethyl	0.05
30	Parathion-methyl	0.02
31	Phorate	0.05
32	Phosalone	0.05
33	Phosphamidon	0.01
34	Profenophos	0.05
35	Quinalphos	0.05
36	Triazophos	0.01
	III) Synthetic Pyrethroids	
37	Cyfluthrin	0.30
38	Cypermethrin	0.50
39	Deltamethrin	0.20
40	Ethofenprox **(**Etofenprox**)**	5.00
41	Fenvalerate & Esfenvalerate (sum of RR & SS isomers)	0.10
42	Fenvalerate & Esfenvalerate (sum of RS & SR isomers)	0.02
43	Lambda-cyhalothrin	0.20
44	Permethrin	0.05
	IV) Triazines	
45	Atrazine	0.05
46	Simazine	0.20
	V) Acylamino acid fungicides	
47	Metalaxyl & Metalaxyl-M	2.00
	VI) Carbamates	
48	Carbaryl	0.05
49	Carbofuran	0.02
50	Carbosulfan	0.05
51	Indoxacarb	2.00
52	Iprovalicarb	2.00
53	Methomyl	0.02
54	Thiodicarb (See Methomyl)	0.02
	VII) Pyrimidines	

Sr. No.	Chemicals	Harmonized EU MRL dated 16th September 2009 (mg/kg)
55	Fenarimol	0.30
	VIII) Triazoles	
56	Bitertanol	0.05
57	Flusilazole	0.05
58	Hexaconazole	0.10
59	Myclobutanil	1.00
60	Penconazole	0.20
61	Propiconazole	0.05
62	Tebuconazole	2.00
63	Triadimefon	2.00
64	Triadimenol	2.00
65	Difenoconazole	0.50
	IX) Imidazole	
66	Iprodione	10.0
67	Fenamidone	0.50
	X) Oxazole	
68	Famoxadone	2.00
	XI) Phthalimide	
69	Captafol	0.02
70	Captan	0.02
	XII) Benzimidazole	
71	Carbendazim (Including Benomyl)	0.30
72	Thiophanate-methyl	0.10
	XIII) Dithiocarbamates	
73	Carbon di sulfide (Mancozeb, Maneb, Propineb, Metiram, Thiram and Ziram collectively estimated as CS_2)	5.00
	XIV) Nicotinoids	
74	Acetamiprid	0.01
75	Clothianidin	0.60
76	Imidacloprid	1.00
77	Thiacloprid	0.02
78	Thiamethoxam	0.50
	XV) Dinitrophenol	

Sr. No.	Chemicals	**Harmonized EU MRL dated 16th September 2009** (mg/kg)
79	Dinocap	0.05
	XVI) Aliphatic Nitrogen fungicides	
80	Cymoxanil	0.20
	XVII) Morpholine	
81	Dimethomorph	3.00
	XVIII) Natural Product Derivative	
82	Buprofezin	1.00
83	Cartap hydrochloride	0.01
84	Emamectin Benzoate	0.01
85	Spinosad (Sum of Spinosyn A+D)	0.50
86	Abamectin	0.01
	XIX) Substituted Thiourea	
87	Difenthiuron	0.01
	XX) Benzoylphenyl urea	
88	Flufenoxuron	1.00
	XXI) Strobilurin	
89	Azoxystrobin	2.00
90	Kresoxim methyl	**1.00**
91	Pyraclostrobin	1.00
92	Trifloxystrobin	5.00
	XXII) Phenyl pyrazole	
93	Fipronil	0.005
	XXIII) Pyrazole	
94	Fenpyroximate	0.30
	XXIV) Nitrophenyl ether	
95	Oxyfluorfen	0.10
	XXV) Others	
96	Propargite	7.00
97	Diflubenzuron	1.00