SPRAY SCHEDULE YEAR 2026
(APPLE)



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SPRAY SCHEDULE FOR THE CONTROL OF DISEASES OF APPLE (YEAR 2026)

S. No.	Growth Stages	Name of Chemical	Doses per 200 litre of water	Effective against Diseases
1	Green Tip	Captan 50 WP* or	600 gm	Scab
		Dodine 65 WP or	200 gm	
		Ziram* 27% SC or	600 ml/gm	
		Fluxapyroxad 75 g/l + Difenoconazole 50 g/l SC	60 ml	Scab/ Powdery Mildew
2	Pink Bud	Mancozeb 75 WP* or	600 gm	Scab
		Propineb 70 WP or	600 gm	
		Difenoconazole 25 EC or	30 ml	
		Hexaconazole 4% + Zineb 68% WP	500 gm	Scab/ Powdery Mildew/ Core Rot
3	Petal Fall/ Pea Stage	Carbendazim 50WP* or	100 gm	Scab
		Thiophanate Methyl 70 WP* or	100 gm	
		Hexaconazole 5 EC or	100 ml	
		Myclobutanil 10 WP or	80 gm	
		Flusilazole 40% EC or	50 ml	
		Mancozeb 60% + Pyroclostrobin 5% w/w WG	700 gm	
		Tebuconazole 50% + Trifloxystrobin 25% WG or	80 gm	Powdery Mildew
		Tebuconazole 8% + Captan 32% SC or	500 ml	
		Boscalid 25.2% + Pyraclostrobin 12.8%w/w WG or	50 gm	
		Metrafenone 500 gm/l SC or	20 ml	

S. No.	Growth Stages	Name of Chemical	Doses per 200 litre of	Effective against Diseases
		Chlorothalonil 40% + Difenoconazole 4% (44 SC)	160 ml	
		Cabendazim 12% + Mancozeb 63% WP	500 gm	Scab/Powdery Mildew
		Carbendazim 25 %+ Flusilazole 12.5 % SE	160 ml	Alternaria Leaf Spot
		Metiram 70%WG	600 gm	Alternaria Leaf Spot/ Scab
4	Fruit Development (Walnut Size)	Mancozeb 75 WP* or	600 gm	Scab
		Propineb 70 WP or	600 gm	
		Dodine 65WP**	150 gm	
		Metiram 55% + Pyraclostrobin 5% WG or	200 gm	Alternaria Leaf Spot/ Blight/ Premature Leaf Fall
		Tebuconazole 8% + Captan 32% W/V SC or	500 ml	Alternaria Leaf Spot/ Premature Leaf Fall
		Tebuconazole 6.7 % + Captan 26.9 % SC or	600 ml	Alternaria Leaf Blotch
		Fluxapyroxad 250 g/l + Pyroclostrobin 250g/l 500 SC or	50 ml	
		Fluopyram 17.7 % w/w + Tebuconazole 17.7 % w/w SC or	126 ml	Alternaria Leaf Spot/ Premature Leaf Fall
		Dodine 40% SC or	150 ml	
		Hexaconazole 4% + Zineb 68 % WP	500 gm	Alternaria Leaf Spot/ Premature Leaf Fall/ Scab
5	Fruit Development (20 Days After Walnut Stage)	Tebuconazole 50 % + Trifloxystrobin 25%WG or	80 gm	Premature Leaf fall
		Chlorothalonil 40% + Difenoconazole 4% (44 SC)	160 ml	
		Propineb 70 WP or	600 gm	Scab
		Zineb 75 WP*	600 gm	Scab/Black Rot

S. No.	Growth Stages	Name of Chemical	Doses per 200 litre of water	Effective against Diseases
		Carbendazim 25 % + Flusilazole 12.5 % SE	160 ml	Alternaria Leaf Spot/ Premature Leaf Fall
		Mancozeb 60 % + Pyraclostrobin 5 % w/w WG	700 gm	Premature Leaf Fall/ Scab
		Metiram 70% WG	600 gm	Premature Leaf Fall/ Scab/ Alternaria Leaf Spot
6	Pre Harvest (20-25 Days Before Harvest)	Captan 50 WP* or	600 gm	Scab/ Fly Speck/ Bitter Rot
		Ziram 27 % SC* or	600 ml	Scab
		Ziram 80% WP*	500 gm	Alternaria Leaf Spot/ Premature Leaf Fall/Fly Speck
		Metiram 55% + Pyraclostrobin 5% WG	200 gm	Alternaria Leaf Spot/ Blight
		Fluopyram 17.7 % w/w + Tebuconazole 17.7 % w/w SC	126 ml	Alternaria Leaf Spot/ Premature Leaf Fall/ Fruit Rot
		Hexaconazole 4% + Zineb 68 % WP	500 gm	Alternaria Leaf Spot/ Premature Leaf Fall/ Scab
7	After harvest	Copper Sulphate 47.15% + Mancozeb 30% WG	1200 gm	Canker

SPRAY SCHEDULE FOR THE CONTROL OF INSECT-PESTS & MITES OF APPLE (YEAR 2026)

S. No.	Growth Stages	Name of Chemical	Doses Per 200 litre of water	Effective against pests
1	Half Inch Green Tip	Horticultural Mineral Oil (HMO)	4 L	San Jose Scale & Mites
2	Pink Bud	Thiacloprid 21.7% EC	100 ml	Thrips
3	Petal Fall	Spiromesifen 22.9% SC or	60 ml	Mites
		Etoxazole 10% SC or	80 ml	
		Hexythiazox 5.45% EC	200 ml	
		Oxy-demeton methyl 25% EC	200 ml	San Jose Scale
4	Fruit Development (Walnut Size)	HMO	2 L	Mites
		Cyenopyrafen 30% SC or	50 ml	
		Fenazaquin 10 EC or	50 ml	
		Propargite 57 EC or	200 ml	
5	Fruit Development (20 Days After Walnut Stage)	Hexythiazox 5.45 % EC or	200 ml	Mites
		Spiromesifen 22.9% SC or	60 ml	
		Propargite 42 % + Hexythiazox 2%EC	200 ml	
6	Fruit Development (20 Days After above spray at S. No. 5)	Fenazaquin 10 EC or	50 ml	Mites
		Propargite 57 EC or	200 ml	
		Cyenopyrafen 30% SC	50 ml	
7	Pre Harvest (20-25 Days Before Harvest)	Oxy-demeton methyl 25 % EC	200 ml	San Jose Scale
8	After Harvest	Chlorpyriphos 20 EC*	400 ml	Woolly Apple Aphid

Points for consideration

1. This spray schedule is for normal weather conditions
2. In case of heavy rains within 12 hours of spray, the spray is to be repeated within seven days.
3. Do not repeat the same chemical for spray.
4. Pesticides should be sprayed when there are chances of diseases.
5. **Do not mix Dodine with other pesticides/chemicals.
   - Do not spray Dodine if temperature is above 30°C and slow drying conditions prevails
   - Dodine should not be mixed with hard water.
6. Use of Captan should be avoided before and after the oil spray for minimum 15 days.
7. Do not mix any other pesticide/chemical/micro-nutrient/growth regulator/hormone with the above recommended pesticides to avoid russeting and other disorders. When necessary, these may be sprayed separately.
8. The fallen leaves of apple should be collected and decomposed in a compost pit or spray 5% urea on orchard floor to ensure fast decomposition of infected leaves.
9. In scab prone areas 12-14 days interval should be maintained between the sprays up to primary scab stage.
10. **For Control of White Root Rot**, drench the basin area 3-4 times, with Carbendazim (0.1%) or Aureofungin (0.05%) + Copper Sulphate (0.05%) with the onset of rainy season to a depth of 15-20 cm. During winters, expose the root system of infected trees to sun. Remove the infected portion and apply Bordeaux paint.
11. **For Control of Collar Rot**, scarify wounds near collar region and apply Bordeaux paint or any other Copper fungicide based paint during winter season. Drench the whole tree basin at a distance of 30 cm from tree trunk with Mancozeb (0.3 %) during rainy season.
12. While spraying for the control of mites on the tree, also spray the basin area to ensure optimum control.
13. Drench the basin area with Chlorpyriphos after harvesting @ 4ml/L of water for the control of Woolly Apple Aphid and Root Borer.
14. Minimum insecticidal sprays should be used during April-June for the safety of Lady bird beetles, Syrphid flies and other beneficial insects as most of useful insects are active during these months.

Preventive Measures for Apple Diseases

a. **Crown Gall or Collar Rot**- Avoid injury to the collar region and rouge out infected plants and destroy them

b. **Foliar Diseases-**As the pathogen overwinters on the fallen leaves and therefore orchard sanitation by removing weeds and bushes and by removing the fallen leaf litter from the orchard floor, is one of the most important measures to reduce the initial inoculum. Adopt proper pruning of trees for adequate air circulation and rapid drying of foliage, thus prevents the development of secondary lesions in the orchard

c. **Powdery Mildew-**Prune off the silver terminals and destroy them

d. **Canker-** These include removal and destruction of infected plant parts, mummified fruits, dead twigs, pruned branches and avoiding mechanical injuries.

e. Apply balanced fertilizers, on the basis of leaf and soil analysis, proper irrigation during hot dry periods to avoid tree stress, protect plants from high and low temperature injuries and ensure effective control of insect-pests and diseases

Recommendations for Hail damage

1. Spray 100 gm Carbendazim* or 600 gm Mancozeb* in 200 L of water immediately after hail.
2. Spray 200 gm Boric acid + 500 gm Zinc Sulphate + 250 gm Quick lime in 200 L of water within 3-4 days of hail storm
3. After 10 to 12 days, a spray of micro-nutrients like Agromin, Multiplex or Microvit @ 400 to 600 g per 200 L of water is also recommended. Spray the hail affected apple orchard with 1 Kg Urea in 200 L of water.

Recommendation for Enhancement of Fruit Size

Need base application of Gibberellic Acid (GA_4+ GA_7) 1.8% + Benzyladinine1.8% (BA) @ 25-30 ppm (277 ml – 333 ml per 200 litre of water) can be applied on 80-90 per cent of king flower bloom stage for enhancement of fruit size (L:D ratio) in apple.

Note

- *The pesticides are proposed to be banned viz. Captan, Carbendazim, Chlorpyriphos, Dimethoate, Malathion, Mancozeb, Monocrotophos, Thiophanate Methyl, Zenab and Ziram by the Government vide Gazette Notification No. CG-DL-E-18052020-219423, Extraordinary Part-II-Section-3- Subsection (ii), dated 18th May 2020 regarding- Banning of Insecticides Order, 2020.*
- *Dimethoate, Malathion and Monocrotophos have been omitted from approved usages for Apple, Mango and other crops vide GoI Gazettee Notification No. CG-DL-E-06102023-249185 dated 29 September 2023, S.O. 4294(E) dated 3rd October, 2023*

PESTICIDES FORMULATIONS RECOMMENDED AND EVALUATED

S. No.	Fungicide	Waiting Period from last application to harvest (in Days)	Formulations	Name of Company
1	Carbendazim 50 WP*	-	Bavistin	-
			Benfil	M/s Indofil Industries Ltd.
			Carbestin	M/s BR Agrotech Ltd.
			Derosal	M/s Bayer Crop Science Ltd.
			Dhanustin	M/s Dhanuka Agrtitech Ltd.
			Gilzim	M/s Gujarat Insecticides Ltd..
			Goldstin	M/s Crop Chemicals Ltd.
			Mavistin	M/s Pioneer Pesticides Pvt .Ltd.
2	Captan 50 WP*	-	Capgold	M/s Crop Chemicals Ltd.
			Captaf	M/s Rallis India Ltd
			Captax	M/s India Pesticides Limited
			Dhanutan	M/s Dhanuka Agrtitech Ltd
			Kohicap	M/s FIL Industries Pvt. Ltd.
			Masstan	M/s Pioneer Pesticides Pvt. Ltd
3	Dodine 65 WP	21	Himdin	-
			Noor	M/s Indofil Industries Ltd.
			Superstar	M/s FIL Industries Pvt.Ltd.
			Syllit	M/s UPL Sustainable Agro Solution.
			Tohfa	M/s Krishi Rasayan Pvt. Ltd.
4	Dodine 40% SC	21	Dodin O FIL	M/s FIL Industries Pvt. Ltd
5	Difenoconazole 25 EC	14	Dizole	M/s Crop Chemicals Ltd
			Karara	M/s Krishi Rasayan Pvt. Ltd.
			Rubigan D	M/s FIL Industries Pvt. Ltd
			Scale	-
			Score	M/s Syngenta India Ltd.
6	Flusilazole 40% EC	-	Cursor 40% EC	M/s Dhanuka Agritech Limited.

			Governor 40% EC	M/s FIL Industries Pvt. Ltd
7	Hexaconazole 5 EC	30	Contaf	M/s Rallis India Ltd.
			Envil	M/s FIL Industries Pvt. Ltd
			Glow	M/s Pioneer Pesticides Pvt. Ltd
			Hexcon	M/s Crop Chemicals Ltd
			Hexzol	M/s Sumitomo Chemical India Ltd.
			Krizole	M/s Krishi Rasayan Group
			Sitara	M/s Indofil Industries Limited.
			Titan	M/s Sudarshan Farm Chemicals India Pvt. Ltd.
8	Mancozeb 75WP*	-	Abic M-45	M/s Syngenta India Ltd.
			Dithane M-45	-
			Dhanuka M-45	M/s Dhanuka Agrtitech Ltd
			Emthane M-45	-
			Gold M-45	M/s Crop Chemicals Ltd.
			Hindustan M-45	M/s HPM Chemicals & Fertilizers Ltd.
			Indofil M-45	M/s Indofil Industries Ltd.
			Kohinoor M-45	M/s FIL Industries Pvt. Ltd.
			Marlett M-45	M/s Coromandel International Ltd
			Mass M-45	M/s Pioneer Pesticides Pvt.Ltd
			Uthane M- 45	M/s UPL Sustainable Agro Solution.
9	Metiram 70%WG.	21	Polyram	M/s BASF India Ltd.
10	Metrafenone 500g/l SC	42	Acrisio 50 SC	M/s BASF India Ltd.
11	Myclobutanil 10WP	21	Boon	M/s Indofil Industries Ltd
			Grapple	M/s FIL Industries Pvt. Ltd
			Index	M/s Nagarjuna NACL Industries Limited
			Systhane	M/s Corteva Agriscience
12	Propineb 70 WP	30	Aaroosh	M/s Coromandel International Ltd
			Antracol	M/s Bayer Crop Science Ltd.
			Scale 70%WP	M/s Krishi Rasayan Exports Pvt.Ltd.

13	Thiophanate methyl 70WP*	03	Alert	
			Key	M/s Krishi Rasayan Ltd
			Roko	M/s Biostadt India Ltd.
			Topsin-M	M/s Moti Pesticides
			Trust	M/s Crop Chemicals Ltd
			Stop	M/s Pioneer Pesticides Pvt. Ltd
14	Zineb 75WP*	-	FIL Kanji	M/s FIL Industries Pvt. Ltd
			Indofil Z-78	M/s Indofil Industries Ltd
15	Ziram 27% SC*	-	Cuman L	M/s Syngenta India Ltd
16	Ziram 80% WP*	21	IPL Ziram-80	M/s India Pesticides Ltd
			ZED-78	M/s FIL Industries Pvt. Ltd
17	Boscalid 25.2%+ Pyraclostrobin 12.8% w/w WG	41	Signum 38% WG	M/s BASF India Ltd.
18	Carbendazim 25% + Flusilazole 12.5% SE	09	Lustre37.5% SE	M/s Dhanuka Agrtitech Ltd
19	Carbendazim 12% + Mancozeb 63%WP	20	Companion	M/s Indofil Industries Ltd
			SAAF	M/s UPL Sustainable Agro Solution
20	Chlorothalonil 40% + Difenoconazole 4% (44 SC)	24	Kavach Flo	M/s Syngenta India Private Limited
21	Copper Sulphate 47.15% + Mancozeb 30% WG)	184	Cuprofix DISPRESS	M/s UPL Sustainable Agri Solutions Limited
22	Fluopyram 17.7% w/w + Tebuconazole 17.7% w/w SC	30	LUNA Experience	M/s Bayer Crop Science Ltd
23	Fluxapyroxad 75g/l + Difenoconazole 50 g/l SC	33	Sercadis Plus 12.5 SC	M/s BASF India Ltd.
24	Fluxapyroxad 250 g/l + Pyraclostrobin 250 g/l 500 SC	29	Merivon 50 SC	M/s BASF India Ltd.
25	Hexaconazole 4%+ Zineb 68% WP	30	Avtaar	M/s Indofil Industries Ltd
26	Mancozeb 60% + Pyraclostrobin 5%w/w WG	-	Laurel	M/s UPL Limited
27	Metiram 55% +Pyraclostrobin 5%WG	12	Cabrio Top 60 WG	M/s BASF India Ltd.
28	Tebuconazole 8% + Captan 32% SC or Tebuconazole 6.7 %	10	Shamir	M/s Adama India Pvt. Ltd
			Kohicap Plus	M/s FIL Industries Pvt. Ltd

	+ Captan 26.9 % SC			
29	Tebuconazole 50% +Trifloxystrobin 25%WG	-	Nativo75 WG	M/s Bayer Crop Science Ltd
	INSECTICIDES			
1	Chlorpyriphos 20 EC*	-	Danusban	M/s Dhanuka Agrtitech Ltd
			Durmet	M/s FMC India Ltd.
			Dursban	M/s Dow Agroscience India Pvt. Ltd
			Force	M/s Nagarjuna Pesticides
			Goldban	M/s Crop Chemicals Ltd
			Massban	M/s Pioneer Pesticides Pvt. Ltd.
			Navigator	M/s Gharda Chemicals Pvt. Ltd.
			Tricel	M/s Sumitomo Chemical India Ltd.
2	Cyenopyrafen 30%SC	15	Kunoichi	M/s Insecticides India Ltd.
3	Etoxazole 10% SC	43	Borneo	M/s Sumitomo Chemical India Ltd.
4	Fenazaquin 10 EC	30	Magister	-
			Majestic	M/s FIL Industries Pvt. Ltd
5	Hexythiazox 5.45% EC	15	Endurer	M/s Coromandel International Ltd
			Maiden	M/s Biostadt India Ltd
6	Horticultural Mineral Oil	-	HP Spray Oil E	Hindustan Petroleum Corporation Ltd. (HPCL)
			Servo Oil	Indian Oil Corporation Ltd
7	Oxy-demeton Methyl 25% EC	-	Metasystox	M/s UPL Sustainable Agro Solution
8	Propargite 57 EC	09	Omite	M/s Dhanuka Agrtitech Ltd
			Simba	M/s PI Industries Pvt. Ltd.
9	Propargite 42% + Hexythiazox 2% EC	15	Ceasemite	M/s Indofil Industries Ltd
10	Spiromesifen 22.9 % SC	30	Oberon	M/s Bayer Crop Science Ltd
11	Thiacloprid 21.7% SC	30	Alanto	M/s Bayer Crop Science Ltd

GROWTH STAGES IN APPLE TREES – SILVER TIP TO FRUIT SET



1. Silver Tip



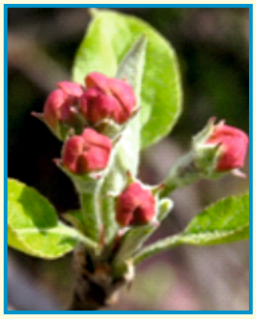
2. Green Tip



3. Half-Inch Green Tip



4.Tight Cluster



5. Pink Bud



6. Bloom



7. Petal Fall



8. Fruit Set

ENSURE SAFE USE OF PESTICIDES

Using pesticides safely depends on many things. Some of the most important factors include selecting the appropriate product, and using that product according to the label directions

- Keep kids, pets and anyone non-familiar to the application out of the reach of pesticides while mixing and application.
- Be sure to wear protective clothing that will protect you while using pesticides. Protective clothing may include a long sleeve shirt, long pants, closed-toe shoes, gloves & goggles for eyes.
- Mix pesticides outdoors or in well-ventilated areas.
- Mix only what is advised.
- Be prepared for a pesticide spill. Have paper towels, sawdust or kitty litter, garbage bags, and non-absorbent gloves on hand to avoid direct contact during the spill. Avoid using excessive amounts of water, as this may only spread the pesticide and could be harmful to the environment.
- Read the first aid instructions on the label before using the product. Have the telephone number for the Poison Control Centre (1-800-222-1222) available in case you have additional questions.
- Remove personal items, such as toys, clothing, or tools from the spray area to avoid contamination.
- After using pesticides, wash your hands before eating.
- Dispose off the empty pesticide containers/bags properly.
- The minimum waiting period after last spray of pesticides shall be maintained before harvest to ensure produce is free from harmful residues.

Horticulture Information Service, Department of Horticulture, Himachal Pradesh, Shimla-2

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