



Chemical Management Guidelines for Control of Pests and Diseases of Vegetables and Melons in Georgia

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Preface

This insect and diseases management booklet provides current information on application rates and safe use of chemicals registered for use on important vegetable and melon varieties grown in Georgia. Crops covered in this booklet are ordered according to Georgia alphabet: 1) Eggplant, 2) Potato, 3) Cucumber, 4) Cabbage, 5) Tomato, 6) Carrot, 7) Pepper, 8) Beet, 9) Onion & garlic, 10) Watermelon and 11) Melon.

All chemicals included in this booklet are registered and approved by the Ministry of Agriculture in Georgia. The booklet contains 3 types of Tables, 1- Insecticides used in vegetables and melons in Georgia; 2- Pesticides Safety Schemes; 3- Chemical Spray Guide for control of Diseases, insects and weeds in vegetables and Melons fields.

Table 1 summarizes all insecticides sold in Georgia, their IRAC codes and application rates. Table 2 contains pesticide safety information for each crop covered in the field guide including FRAC, IRAC and HRAC codes, pre harvest period for each chemical, entry period and allowed number of applications per season. Table 3 is a Chemical Spray Guide for control of diseases, insects and weeds infesting these crops and provides information about how these chemicals should be used at different stages of plant development. Recommendations are based on information listed in the manufacturers' labels and from information provided by the Ministry of Agriculture of Georgia. Performance of these pesticides may not always be acceptable, because of differences in environmental conditions, severity of pest pressure and methods of application. This publication is intended to be used only as a guide. Always follow instructions and safety information listed in the pesticide label.

For questions, concerns, or suggestions for improvement regarding this handbook, please contact Andro Khetereli andro@georgianels.ge

CONTENT

TABLE 1. MAIN INSECTICIDES USED IN VEGETABLES AND MELONS	1
Table 2A. EGGPLANT: Pesticide Safety	4
Table 2B. POTATO: Pesticide Safety	5
Table 2C. CUCUMBER: Pesticide Safety	6
Table 2D. CABBAGE: Pesticide Safety	8
Table 2E. TOMATO: Pesticide Safety	9
Table 2F. CARROT: Pesticide Safety	11
Table 2G. PEPPER: Pesticide Safety	12
Table 2H. BEETROOT: Pesticide Safety	13
Table 2I. ONION: Pesticide Safety	14
Table 2J. GARLIC: Pesticide Safety	15
Table 2K. WATERMELON: Pesticide Safety	16
Table 2M. MELON: Pesticide Safety	17
Table 3A. EGGPLANT: Chemical control of diseases, insects, and weeds	18
Table 3B. POTATO: Chemical control of diseases, insects, and weeds	21
Table 3C. CUCUMBER: Chemical control of diseases, insects, and weeds	23
Table 3D. CABBAGE: Chemical control of diseases, insects, and weeds	27
Table 3E. TOMATO: Chemical control of diseases, insects, and weeds	29
Table 3F. CARROT: Chemical control of diseases, insects, and weeds	33
Table 3G. PEPPER: Chemical control of diseases, insects, and weeds	35
Table 3H. BEETROOT: Chemical control of diseases, insects, and weeds	38
Table 3I. ONION: Chemical control of diseases, insects, and weeds	40
Table 3J. GARLIC: Chemical control of diseases, insects, and weeds	42
Table 3K. WATERMELON: Chemical control of diseases, insects, and weeds	44
Table 3M. MELON: Chemical control of diseases, insects, and weeds	47

TABLE 1. Main insecticides used in vegetables and melons

Active ingredient	Trade name	IRAC code*	Crop	Insects	Application rate per ha
Acetamiprid 200 g/kg	Ace SP	4A	Cucumber, tomato	Aphids, moths	0,2 kg
			Potato	Colorado beetle	0,025–0,03 kg
	Temp WP	4A	Tomato	Aphids	0,2 kg
			Cucumber	Moths	0,25 kg
Alpha-cypermethrin 100 g/L	Alpac EC	3	Potato	Aphids, Colorado beetle	0,1 L
			Potato tuber moth	0,1–0,2 L	
	Fastac EC	3	Potato	Colorado beetle	0,07–0,1 L
			Potato tuber moth	0,1–0,2 L	
	Beetroot	3	Beetroot	Flies, aphids	0,1 L
Bifenthrin 100 g/L	Talstar 10 EC	3(A)	Tomato	Mites	0,4 L
			Cucumber	Aphids, mites	0,3–0,4 L
			Cabbage	Aphids, cabbage white	0,2–0,3 L
Carbosulfan 50 g/kg	Marshal 5G, GR	1A	Potato	Potato tuber moth, Colorado beetle	0,75–1 kg
Chlorpyrifos 450 g/L	Dursban EC 450	1B	Potato	Colorado beetle	1,5 L
Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurell-D EC	1B + 3	Potato	Colorado beetle	0,5–1,0 L
Cypermethrin 250 g/L	Alexander EC	3	Potato	Aphids	0,5 L
			Colorado beetle	0,1–0,2 L	
			Cabbage	Cabbage white, moths, aphids	0,16 L
			Cucumber, tomato	Whiteflies	1,2–1,6 L
			Pepper	Aphids, thrips	0,65–0,8 L
			Melon, watermelon	Moths	0,24–0,32 L
	Arrivo 25 EC	3	Carrot	Carrot psyllid, carrot rust fly	0,5 L
			Potato	Aphids	0,1–0,2 L
			Potato tuber moth	0,16 L	
			Cabbage	Cabbage white, moths, aphids	0,16 L
Deltamethrin 25 g/L	Decis Blue 25 EC	3(A)	Potato	Potato tuber moth, Colorado beetle	0,1–0,2 L
			Tomato	Moths, Colorado beetle	0,25–0,4 L
			Cabbage	Moths, cabbage white, aphids	0,3 L
			Carrot	Carrot rust fly	0,3 L
			Watermelon, melon	Moths	0,25–0,5 L
Deltamethrin 250 g/kg	Decis Prof WG 25	3(A)	Tomato	Moths, aphids	0,025–0,5 kg
			Cucumber, watermelon	Aphids	0,025–0,04 kg
			Potato	Colorado beetle	0,01–0,05 kg
Dimethoate 400 g/L	Bi 58 EC	1B	Potato	Potato tuber moth	1,4–1,9 L
			Cabbage	Mites	0,6–1,0 L
	Beetal EC	1B	Potato	Colorado beetle	1,2 L

[CONTINUED] TABLE 1. Main insecticides used in vegetables and melons

Active ingredient	Trade name	IRAC code*	Crop	Insects	Application rate per ha
Dimethoate 400 g/L	Demetra EC	1B	Potato	Colorado beetle	1,2 L
			Cabbage	Aphids and flea beetles	1 L
Imidacloprid 200 g/L	Sultan SL	4A	Potato	Colorado beetle	0,1 L
Imidacloprid 350 g/L	Comprador 350 SC	4A	Eggplant	Aphids	0,2–0,3 L
			Tomato	Moths, aphids	0,2 L
			Cucumber	Aphids	0,2 L
Imidacloprid 700 g/kg	Confidor Maxy WG 70	4A	Tomato	Moths, aphids	0,04–0,05 kg
			Cucumber	Aphids	0,04–0,05 kg
			Watermelon	Aphids	0,04–0,05 kg
			Potato	Colorado beetle	0,04–0,05 kg
	Imidor Max WG	4A	Tomato	Moths	0,12 kg
			Cucumber	Aphids	0,08–0,12 kg
Indoxacarb 150 g/L	Avaunt EC	22A	Tomato	Cotton leafworm	0,25 L
			Potato	Potato tuber moth	0,35 L
Lambda-cyhalothrin 50 g/L	Grand 5 EC	3(A)	Tomato	Colorado beetle	0,1 L
			Potato	Colorado beetle	0,1–0,2 L
	Kaiso WG	3A	Potato	Colorado beetle	0,1–0,2 kg
			Tomato	Colorado beetle	0,1 kg
			Cabbage	Cabbage white, moths	0,1 kg
	Karate EC	3A	Potato	Colorado beetle	0,1–0,2 L
			Potato	Potato tuber moth	0,2–0,3 L
			Cabbage	Cabbage white, moths	0,1 L
	Valsamba EC	3(A)	Tomato	Colorado beetle	0,1 L
			Cabbage	Cabbage white, diamondback moth, flea beetle	0,4 L
Tomato			Colorado beetle	0,4 L	
Malathion 500 g/L	Malafos EC	1B	Cabbage	Cabbage white, moths, whiteflies, thrips, flies	0,6–1,2 L
			Cucumber	Mites, flies, aphids, whiteflies	0,6–1,2 L
Methomyl 200 g/L	Lannate 20 L	1A	Potato	Potato tuber moth	2,5–3,0 L
			Tomato	Aphids, moths	1–3 L
			Cucumber	Aphids	1–2 L
Pirimiphos methyl 500 g/L	Actellic EC	1B	Cucumber, tomato, eggplant	Whiteflies, thrips, aphids	0,3–1,5 L
			Watermelon	Aphids, mites	0,5–1,5 L
			Melon	Flies, aphids	0,9–2,25 L
Pyriproxifen 100 g/L	Admiral 10 EC	7	Eggplant, melon, cabbage	Whiteflies	0,5–0,75 L
Spirodiclofen 240 g/L	Envidor SC 240	23	Tomato, cucumber, watermelon	Mites	0,2–0,4 L

[CONTINUED] TABLE 1. Main insecticides used in vegetables and melons

Active ingredient	Trade name	IRAC code*	Crop	Insects	Application rate per ha
Spiromesifen 240 g/L	Oberon 240 SC	23	Tomato, pepper, cucumber, watermelon, melon	Mites	0,5 L
Thiacloprid 480 g/L	Calypso SC 480	4A	Potato	Colorado beetle	0,08–0,10 L
			Cabbage, cucumber	Aphids	0,06 L
Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD 110	4A + 3(A)	Tomato	Moth larvae, Colorado beetle	0,5–0,7 L
Thiamethoxam 250 g/kg	Actara WG	4A	Potato	Click beetles	0,3–0,6 kg
				Colorado beetle	0,06 kg
			Cucumber, eggplant, tomato, pepper	Aphids	0,1–0,6 kg
			Cucumber, eggplant, tomato, pepper	Whiteflies, thrips	0,4–0,8 kg
	Medal WG	4A	Eggplant, tomato, potato	Aphids	0,06–0,08 kg

*Insecticide Resistance Action Committee (<http://www.irac-online.org>).

TABLE 2A. EGGPLANT: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	3	20	3	1	III	M	5 kg
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	4	8	3	1		M	6 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Kresoxim methyl 500 g/kg	Strobstar WG	2	2	2	2	III	11	0,3 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,2–1,6 kg
Mefenoxam 350 g/L	Apron XL ES	3	14	7	3	U	4	Watering seedlings: 0,04% solution
Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	2	14	7	3	II	28	Watering: 0,15% solution
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2	14	7	3	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	1,5–2 kg
Insecticides/acaricides								
Abamectin 18 g/L	Vertimec 018 EC	2	3	0	3	III	6	1 L
Alpha-cypermethrin 100 g/L	Fastac EC	4	15	2	0	II	3	0,3 kg
Chlorpyrifos + cypermethrin 500 + 50 g/l	Nurell-D EC	2	40	10	4	III	4A + 3(A)	1,5 L
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	II	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,5 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	3	20	2	7	III	4A	0,04–0,05 kg
Pirimiphos methyl 500 g/L	Actellic EC	2	25	7	3	III	1B + 3(A)	1,5 L
Spiromesifen 240 g/L	Oberon 240 SC	4	3	7	3	U	23	0,6 L
Tebufenpyrad 200 g/kg	Talav 20 WP	2	10	7	3	III	21	0,37 kg
Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	2	3	7	2	U	1B	0,75 L
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	III	4A	0,08–0,12 kg
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	III	A	2,0 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	U	A	2,0 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	II	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	III	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2B. POTATO: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha [*]
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	5	15	3	1	III	M	5 kg
Chlorothalonil 500 g/L	Bravo FS	3	10	7	3	U	M	3 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Cymoxanil 30 g/kg + copper sulfate + calcium hydroxide 225 g/kg ex. copper	Cupertine Super WP	2	20	3	1	III	27 + M	4 kg
Dimethomorph 90 g/kg + mancozeb 600g/kg	Acrobat Top WG	3	20	7	3	U	40 + M	2 kg
Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	3	7	7	3	U	11 + 28	2 L
Iprovalicarb 55 g/kg + propineb 613 g/kg	Melody Duo WP	3	30	7	3	U	40 + M	2,5 kg
Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	3	14	7	3	U	4 + M	5 kg
Methyram 420 g/kg + copper dihydroxide 390 g/kg	Kauritil WG	NI	20	7	3	U	M + M	3 kg
Metiram 700 g/kg	Polyram WG	4	2	7	3	U	M	2,5 kg
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	2 kg
Trifloxistrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	3	20	3	1	U	11 + 3	0,35 kg
Insecticides								
Imidacloprid 140 g/L + pencycuron 150 g/L	Prestige FS 290	1	NI	0	0	U	4A + 20	Dissolve 1 L preparation in 15–20 L water. Dip tubers in solution before planting.
Thiamethoxam 262,5 g/L + fludioxonil 25 g/L + difenoconazole 25 g/L	Celest top FS	1	NI	0	0	U	4A + 12 +3	Treat planting material with 0,4 L per 1 Tone.
Herbicides								
Fenoxsapprop-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L
Metribuzine 600 g/L	Sencor Liquid SC 600	1	NI	0	1	II	C1	1 L
Prometryn 500 g/L	Gesagard FW	1	20	0	0	U	C1	4 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2C. CUCUMBER. Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity^	Resistance classifications~	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	3	20	3	1	III	M	5 kg
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	4	8	3	1	III	M	6 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Dimethomorph 90 g/kg + mancozeb 600g/kg	Acrobat WG	5	NI	7	3	U	40 + M	2,0 kg
Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	3	7	7	3	U	11 + 28	2 L
Iprovalicarb 55 + propineb 613 g/kg	Melody Duo WP	3	20	7	3	U	40 + M	2,5 kg
Kresoxim methyl 500 g/kg	Strobstar WG	2	2	2	2	U	11	0,3 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,5 kg
Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	3	20	7	3	U	M + 4	2,5 kg
Metiram 420 g/kg + copper dihydroxide 390 g/kg	Kauritil WG	NI	20	7	3	U	M + M	3,0 kg
Mefenoxam 350 g/L	Apron XL ES	3	14	7	3	II	4	Watering seedlings: 0,04% solution
Mefenoxam 40 + mancozeb 640 g/kg	Ridomil Gold MZ	3	10	7	3	U	4 + M	2,5 kg
Penconazole 100 g/L	Topas EC	2	20	7	3	U	3	0,15 L
Propamocarb hydrochloride HCL 722 g/L	Propacurn SL	2	14	7	3	U	28	Watering: 0,15% solution
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2	14	7	3	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	1,5 kg
Sulfur 800 g/kg	Sulfolac WG	4	1	7	3	U	M	3 kg
	Thiovit Jet WG	2	20	10	4	U	M	3 kg
Trifloxistrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	1	NI	30	30	U	11 + 3	0,4 kg
Insecticides/acaricides								
Abamectin 18 g/L	Vertimec 018 EC	2	3	0	3	II	6	1,0 L
Acetamiprid 200 g/kg	Mosetam 20 WDG	1	20	1	0	U	4A	0,3 kg
Alpha-cypermethrin 100 g/L	Fastac EC	2	15	4	0	III	3	0,3 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,25 kg
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	III	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,5 L
Dimethoate 400 g/L	Safagor EC	2	30	10	4	II	1B	1,5 L
Lambda-cyhalothrin 50 g/l	Karate Zeon CS	1	30	10	4	II	3(A)	0,15 L
Pirimiphos-methyl 500 g/L	Actellic EC	2	20	7	3	U	1B	1,5 L
Spiromesifen 240 g/L	Oberon 240 SC	4	3	7	3	III	23	0,6 L
Tebufenpyrad 200 g/kg	Masai WP	2	10	7	3	U	21	0,5 kg
	Talav 20 WP	2	10	7	3	U	21	0,37 kg
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	U	4A	0,1 kg

[CONTINUED] TABLE 2C. CUCUMBER. Pesticide safety

Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha [*]
				Physical	Mechanical			
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/l	Dominator WP	1	NI	7	4	U	G + Z	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2D. CABBAGE: Pesticide safety

Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	5	15	3	1	III	M	5 kg
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	5	15	3	1	U	M	6 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,5 kg
Mefenoxam 350 g/L	Apron XL ES	1	NI	0	0	II	4	Watering seedlings: 0,04% solution
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2	3	7	3	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²
Propamocarb hydrochloride HCL 722 g/L	Propacurn SL	2	3	7	3	U	28	Watering: 0,15% solution
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	1,5–2 kg
Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	2	20	10	4	U	M + 27	2,5 kg
Insecticides/acaricides								
Alpha-cypermethrin 100 g/L	Fastac EC	2	15	4	0	III	3	0,3 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,25 kg
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	III	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,5 L
Lambda cyhalothrin 50 g/L	Karate EC	1	30	10	4	II	3(A)	0,15 L
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	II	4A	0,1 kg
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte, EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator, WP	1	NI	7	4	U	G + Z	3 L
Pendimethalin 330 g/L	Stomp EC	1	NI	7	3	U	K1	4 L
Tepraloxymid 50 g/L	Aramo EC	1	14	0	0	A	U	1,8 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2E. TOMATO: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity^	Resistance classifica-tions~	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Azoxystrobin 93,5 g/L + folpet 500 g/L	Quadris Max	2	5	5	3	U	11 + M	0,6 L
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	5	15	3	1	III	M	5 kg
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	5	15	3	1	U	M	6 L
Chlorothalonil 500 g/L	Bravo FS	3	NI	3	3	U	M	3,0 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Dimethomorph 90 g/kg + mancozeb 60 0g/kg	Acrobat WG	3	40	7	3	U	40 + M	2,0 kg
Fenamidone + propamocarb hydrochloride 75 + 375 g/L	Consento 450 SC	3	7	7	3	U	M + 28	2,0 L
Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	4	10	7	3	U	M + 4	2,5 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,5 kg
Mefenoxam 350 g/L	Apron XL ES	1	NI	0	0	II	4	Watering seedlings: 0,04% solution
Mefenoxam + mancozeb 40 + 640 g/kg	Ridomil Gold MZ	4	14	7	3	U	4 + M	2,5 kg
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	1,5–2 kg
Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	2	20	10	4	U	M + 27	2,5 kg
Propamocarb hydrochloride HCL 722 g/L	Propacurn SL	2	3	7	3	U	28	Watering: 0,15% solution
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2	3	7	3	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²
Trifloxistrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	3	20	3	1	U	11 + 3	0,3 kg
Insecticides/acaricides								
Abamectin 18 g/L	Vertimec 018 EC	2	3	0	3	II	6	1,0 L
Alpha-cypermethrin 100 g/L	Fastac EC	2	15	4		III	3	0,3 L
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	III	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,5 L
Lambda-cyhalothrin 50 g/L	Grand 5 EC	2	30	10	4	II	3(A)	1,5 L
	Karate Zeon CS	1	30	10	4	II		0,15 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,25 kg
Pirimiphos-methyl 500 g/L	Actellic EC	2	20	7	3	U	1B	1,5 L
Spiromesifen 240 g/L	Oberon 240 SC	4	3	7	3	III	23	0,6 L
Tebufenpyrad 200 g/kg	Talav 20 WP	2	10	7	3	U	21	0,37 kg
Thiacloprid 100 g/L+ deltamethrin 10 g/L	Proteus OD	2	3	7	2	III	4A + 3(A)	0,75 L
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	II	4A	0,1 kg
Herbicides								
Fenoxsprop-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L

[CONTINUED] TABLE 2E. TOMATO: Pesticide safety

Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L
Metribuzine 600 g/L	Sencor Liquid SC 600	1	NI	0	1	II	C1	0,5 L
Metribuzine 700 g/kg	Senkron WDG	1	1	7	0	II	C1	0,7 kg
Pendimethalin 330 g/L	Stomp EC	1	1	0	0	U	K1	4 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2F. CARROT: Pesticide safety

Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Copper hydroxide 400 g/kg (exp. as Cu)	Iroco 40 WG	4	10	7	3	U	M	2,8 kg
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Mancozeb 800 g/kg	Dithane M-45 WP	2	40	7	3	U	M	1,6 kg
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	1,5 kg
Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	2	30	10	4	U	M	1,5 kg
Trifloxistrobin 250 g/kg + tebuconazole + 500 g/kg	Nativo 75 WG	3	20	7	3	U	11 + 3	0.4 kg
Insecticides/acaricides								
Alpha-cypermethrin 100 g/L	Fastac EC	2	50	10	4	III	3	0,3 L
Chlorpyrifos 500 g/L + cypermethrin + 50 g/L	Nurell-D EC	2	40	10	4	II	1B + 3(A)	1,5 L
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	III	3(A)	0,3 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,3 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,05 kg
Lambda-cyhalothrin 50 g/L	Karate EC	1	30	10	4	II	3(A)	0,15 L
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	U	4A	0,12 kg
Herbicides								
Fenoxsapprop-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L
Metribuzine 600 g/L	Sencor Liquid SC 600	1	NI	0	1	II	C1	0,5 L
Pendimethalin 330 g/L	Stomp EC	1	NI	7	3	U	K1	4 L
Prometryn 500 g/L	Gesagard FW	1	70	0	0	U	C1	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2G. PEPPER: Pesticide safety

Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	3	20	3	1	III	M	5 kg
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	4	8	3	1	III	M	6 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Kresoxim methyl 500 g/kg	Strobstar WG	2	2	2	2	U	11	0,3 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,2–1,6 kg
Mefenoxam 350 g/L	Apron XL ES	3	14	7	3	II	4	Watering seedlings: 0,04% solution
Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	2	14	7	3	U	28	Watering: 0,15% solution
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2		7	3	U	28 + 33	
Propineb 700 g/kg	Antracol SW	3	20	7	3	U	M	1,5–2 kg
Insecticides/acaricides								
Abamectin 18 g/L	Vertimec 018 EC	2	3		3	II	6	1 L
Alpha-cypermethrin 100 g/L	Fastac EC	4	15	2	0	III	3	0,3 L
Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurell-D EC	2	40	10	4	II	1B + 3(A)	1,5 L
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	III	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,5 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	3	20	2	7	III	4A	0,04–0,05 kg
Pirimiphos-methyl 500 g/L	Actellic EC	2	25	7	3	U	1B	1,5 L
Spiromesifen 240 g/L	Oberon 240 SC	4	3	7	3	III	23	0,6 L
Tebufenpyrad 200 g/kg	Talav 20 WP	2	10	7	3	U	21	0,37 kg
Thiacloprid 100 g/L+ deltamethrin 10 g/L	Proteus OD	2	3	7	2	III	4A + 3(A)	0,75 L
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	U	4A	0,08–0,12 kg
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2,0 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2,0 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2H. BEETROOT: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Preharvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	5	15	3	1	III	M	6 kg
Carbendazim 500 g/kg	Carbendazim 50 WP	3	20	7	3	III	1	0,8 kg
Copper sulphate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Cymoxanil 30 g/kg + copper sulfate + calcium hydroxide 225 g/kg ex. copper	Cupertin Super WP	2	20	3	1	III	27 + M	4 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,6 kg
Penconazole 100 g/L	Topas EC	2	20	7	3	U	3	0,4 kg
Propineb 700 g/kg	Antracol SW	4	40	7	3	U	M	1,5 kg
Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	2	20	10	4	U	M + 27	1,5 kg
Trifloxystrobin 500 g/kg	Zato WG 50	2	28	0	0	III	11	0,25 kg
Insecticides/acaricides								
Alpha-cypermethrin 100 g/L	Fastac EC	2	50	10	4	III	3	0,3 kg
Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurell-D EC	2	40	10	4	II	1B + 3(A)	1,5 kg
Deltamethrin 25 g/L	Decis Blue 25 EC	1	NI	7	3	III	3(A)	0,3 kg
	Decis Fluxx	2	20	7	3	III	3(A)	0,3 kg
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,05 kg
Lambda-cyhalothrin 50 g/L	Karate EC	1	30	10	4	II	3(A)	0,15 kg
Thiamethoxam 250 g/kg	Actara WG	1	14	7	3	U	4A	0,12 kg
Herbicides								
Ethofumesate 112 g/L + phenmedipham 91 g/L + desmedipham 71 g/L	Betanal Expert EC	3	NI	7	3	U	N + C1 + C1	3 L
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L
NI = no influence.								
*Recommended volume of water: 300–500 L/ha.								
[^]Toxicity (classes as defined by the World Health Organization)				[~]Resistance classifications (FRAC/IRAC codes, HRAC groups)				
U—Unlikely to present acute hazard				FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home				
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.				IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org				
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.				HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com				

TABLE 2I. ONION: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Tox-icity^A	Resistance classifica-tions~	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Azoxystrobin 250 g/L	Quadris SC	2	5	5	3	U	11	0,5 L
Copper sulfate + calcium hydroxide	Bordeaux mixture	5	15	3	1	II	M	5 kg
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Cymoxanil 30 g/kg + copper sulfate + calcium hydroxide (225 g/kg ex. copper)	Cupertin Super	2	20	3	1	III	27 + M	4 kg
Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	3	15	7	3	U	40 + M	2,0 kg
Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	3	7	7	3	U	11 + 28	2 L
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,2–1,6 kg
Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	3	20	7	3	U	M + 4	2,5 kg
Mefenoxam + mancozeb 40 + 640 g/kg	Ridomil Gold MZ	3	15	7	3	U	4 + M	2,5 L
Metiram 700 g/kg	Polyram WG	3	20	7	3	U	M	2,5 kg
Propineb 700 g/kg	Antracol SW	4	40	7	3	U	M	1,5–2 kg
Pyraclostrobin 50 g/kg + 550 g/kg	Cabrio top WG	3	30	7	3	U	11 + M	2,0 kg
Insecticides/acaricides								
Alpha-cypermethrin 100 g/L	Fastac EC	2	50	10	4	III	3	0,3 kg
Chlorpyrifos + cypermethrin 500 + 50 g/l	Nurell-D EC	2	40	10	4	II	1B + 3(A)	1,5–2,5 kg
Deltamethrin 25 g/L	Decis Fluxx	2	20	7	3	III	3(A)	0,5 kg
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,04–0,05 kg
Lambda-cyhalothrin 50 g/L	Karate Zeon CS	2	20	10	4	II	3(A)	0,4 kg
Thiamethoxam 250 g/kg	Actara WG	1	14	7	3	U	4A	0,4 kg
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	NI	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L
loxylinil 225 g/L	Totril	1	NI	1	NI	II	C3	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

^Toxicity (classes as defined by the World Health Organization)	~Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2J. GARLIC: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha [*]
				Physical	Mechanical			
Fungicides								
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	5	15	3	1	III	M	5 L
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	15	7	3	III	M	5 kg
Mancozeb 800 g/kg	Dithane M-45 WP	5	20	7	3	U	M	1,5 kg
Propineb 700 g/kg	Antracol SW	4	40	7	3	U	M	1,5 kg
Insecticides/acaricides								
Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurell-D EC	2	40	10	4	II	1B + 3(A)	1,5 L
Deltamethrin 25 g/L	Decis Fluxx	2	20	7	3	III	3(A)	0,3 L
Lambda-cyhalothrin 50 g/L	Karate EC	1	30	10	4	II	3(A)	0,4 L
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	NI	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L
loxylnil 225 g/L	Totril	1	NI	7	0	II	C3	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2K. WATERMELON: Pesticide safety

Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha*
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Bordeaux mixture	3	20	3	1	III	M	5 kg
Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	4	8	3	1	III	M	6 L
Copper hydroxide 400 g/kg (exp. as Cu)	Iroco 40 WG	4	10	7	3	U	M	1,75 kg
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	10	7	3	III	M	5 kg
Cymoxanil 30 g/kg + copper sulfate + calcium hydroxide (225 g/kg ex. copper)	Cupertin Super	2	20	3	1	III	27 + M	0,4 kg
Mancozeb 800 g/kg	Dithane M-45 WP	3	10	7	3	U	M	1,2–1,6 kg
Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	3	3	7	3	U	M + 4	2,5 kg
Mefenoxam 350 g/L	Apron XL ES	3	14	7	3	II	4	Watering seedlings: 0,04% solution
Penconazole 100 g/L	Topas EC	3	20	7	3	U	3	0,38 L
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2	14	7	3	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²
Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	2	14	7	3	U	28	Watering: 0,15% solution
Propineb 700 g/kg	Antracol SW	2	3	7	3	U	M	1,5–2 kg
Sulfur 800 g/kg	Sulfolac 80 WG	3	1	7	4	U	M	3 kg
Insecticides/acaricides								
Abamectin 18 g/L	Vertimec 018 EC	2	3	3		II	6	1 L
Alpha-cypermethrin 100 g/L	Fastac EC	2	15	4	0	III	3	0,3 L
	Alpac EC	2	15	4	0	III	3	0,3 L
Delthamethrin 25 g/L	Decis Blue 25 EC	2	20	7	3	III	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,3 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,05 kg
Pirimiphos-methyl 500 g/L	Actellic EC	2	25	7	3	U	1B	1,5 L
Spiromesifen 240 g/L	Oberon 240 SC	4	2	7	3	III	23	0,6 L
Tebufenpyrad 200 g/kg	Talav 20 WP	2	10	7	3	U	21	0,37 kg
Thiamethoxam 250 g/kg	Actara WG	1	3	3	1	U	4A	0,08–0,12 kg
Herbicides								
Fenoxsapprop-p-ethyl 69 g/L	Furore-super EW 69	1	NI	7	3	U	A	2,0 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2,0 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-isopropyl amine 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 2M. MELON: Pesticide safety								
Active ingredient	Trade name	Allowed uses per season	Pre-harvest period (days)	Entry period (days)		Toxicity [^]	Resistance classifications [~]	Application rate per ha [*]
				Physical	Mechanical			
Fungicides								
Bordeaux mixture as metallic copper 20%	Safa Bordeaux Mix WP	4	8	3	1	III	M	5 kg
Copper sulfate + calcium hydroxide 200 g/kg	Cuperval 20 WP	4	10	7	3	III	M	5 kg
Copper hydroxide 400 g/kg (exp. as Cu)	Iroco 40 WG	4	10	7	3	U	M	1,75 kg
Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	3	7	7	3	U	11 + 28	3 L
Iprovalicarb 55 g/kg + propineb 613 g/kg	Melody Duo 66,8 WP	3	20	7	3	U	40 + M	2,5 kg
Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	3	3	7	3	U	M + 4	2,5 kg
	Ridonet MZ 72 WP	3	3	7	3	U	M + 4	2,5 kg
Mancozeb 800 g/kg	Dithane M-45 WP	4	14	7	3	U	M	1,5 kg
Mefenoxam 350 g/L	Apron XL ES	3	14	7	3	II	4	Watering seedlings: 0,04% solution
Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	3	10	7	3	U	4 + M	2,5 kg
Penconazole 100 g/L	Topas EC	2	20	7	3	U	3	0,15 L
	Kobuz 100 EC	2	20	7	3	U	3	0,25 L
Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	2	14	7	3	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²
Propineb 700 g/kg	Antracol WP 70	4	30	7	3	U	M	1,5 kg
Sulfur 800 g/kg	Sulfolac 80 WG	1	4	7	3	U	M	3 kg
	Thiovit Jet WG	5	1	1	1	U	M	3 kg
Insecticides/acaricides								
Abamectin 18 g/L	Vertimec 018 EC	2	3	3	0	II	6	1 L
Alpha-cypermethrin 100 g/L	Fastac EC	2	15	10	4	III	3	0,3 L
Deltamethrin 25 g/L	Decis Blue 25 EC	2	20	7	3	III	3(A)	0,5 L
	Decis Fluxx	2	20	7	3	III	3(A)	0,3 L
Imidacloprid 700 g/kg	Confidor Maxi 70 WG	1	20	7	3	III	4A	0,05 kg
Pirimiphos-methyl 500 g/L	Actellic EC	2	25	7	3	U	1B	1,5 kg
Spiromesifen 240 g/L	Oberon 240 SC	4	2	7	3	III	23	0,6 L
Tebufenpyrad 200 g/kg	Talav 20 WP	2	10	7	3	U	21	0,37 kg
Thiamethoxam 250 g/kg	Actara WG	1	3	3	0	U	4A	0,12 kg
Herbicides								
Fenoxsapro-p-ethyl 69 g/L	Furore-super EW 69	1	NI	7	3	U	A	2 L
Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	1	20	7	3	II	A	2 L
Glyphosate 360 g/L	Rumbo SL 36	1	NI	7	0	III	G	3 L
Glyphosate 500 g/L, potassium salt	Uragan Forte SL	1	NI	7	0	U	G + 0	3 L
Glyphosate-izopropil acid 360 g/L	Dominator WP	1	NI	7	4	U	G + Z	3 L

NI = no influence.

*Recommended volume of water 300–500 L/ha.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3A. EGGPLANT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Tox-icity^	Resistance classifica-tions~	Application rates	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before sowing or before plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,08–0,12 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting; or if sown, at the 2- to 3-leaf stage	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids, Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	II	4A	0,4 kg	80 g

[CONTINUED] TABLE 3A. EGGPLANT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
2: 10–12 days after previous application	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Powdery mildew, late blight		Kresoxim methyl 500 g/kg	Strobstar WG	U	11	0,3 kg	60 g
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 mL
	Moth larva, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A + 3(A)	0,75 L	150 mL
	Moths, aphids		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,5 L	100 mL
	Greenhouse whitefly, mites, aphids, thrips		Pirimiphos-methyl 500 g/L	Actellic EC	U	1B	1,5 L	300 mL
Colorado beetle	Chlorpyrifos 500 g/L + cypermethrin 50 g/L		Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL	
3: 10–12 days after previous application	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Powdery mildew, late blight	Acaricide	Kresoxim methyl 500 g/kg	Strobstar WG	U	11	0,3 kg	60 g
	Mites		Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1,0 L	200 mL
		Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 mL	
	Moth larva, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A + 3(A)	0,75 L	150 mL
	Colorado beetle		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
Greenhouse whitefly, mites, aphids, thrips	Pirimiphos-methyl 500 g/L		Actellic EC	U	1B	1,5 L	300 mL	
4: 10–12 days after previous application	Downy mildew	Fungicide	Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Early blight, late blight, Macrosporium		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L

[CONTINUED] TABLE 3A. EGGPLANT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
5: 10–12 days after previous application	Downy mildew	Fungicide	Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Early blight, late blight, Macrosporium		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
6: 10–12 days after previous application	Downy mildew, bacterial diseases	Fungicide	Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Early blight, late blight, Macrosporium		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
Weed control								
1: Before sowing or transplanting seedlings	Weeds at vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: According to weed's developmental stage	Annual and perennial cereal and broadleaf weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxym 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3B. POTATO: Chemical control of diseases, insects, and weeds

Application number and timing	Diseases and Insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
1: Treatment of planting material	Click beetles, Colorado beetle, aphids, Rhizoctonia	Fungicide, insecticide	Imidacloprid 140 g/L + pencycuron 150g/L	Prestige FS 290	U	4A + 20	Dissolve 1 L preparation in 15–20 L water; dip potatoes in solution before planting	
	Click beetles, Colorado beetle, aphids, rhizoctonia disease, early blight, silver scab and common scab, fusariosis	Fungicide, insecticide	Thiamethoxam 262,5 g/L + fludioxonil 25 g/L + difenoconazole 25 g/L	Celest top FS	U	4A + 12 + 3	0,4 L per 1 Tone planting material	
2: When plants are 10–15 cm	Late blight, early blight, Macrosporium	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Late blight		Chlorothalonil 500 g/L	Bravo FS	U	M	3 L	600 mL
	Late blight		Metiram 420 g/kg + copper dihydroxide 240 g/kg	Kauritil WG	U	M + M	3 kg	600 g
3: 8–10 days after previous application	Late blight, early blight, Macrosporium	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	2 kg	400 g
	Late blight, early blight		Mefenoxam 40g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Late blight, early blight		Metiram 700 g/kg	Polyram WG	U	M	2,5 kg	500 g
4: 8–10 days after previous application	Late blight, early blight, Macrosporium	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	2 L	400 mL
	Late blight, early blight		Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,35 kg	70 g
	Late blight, early blight		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	5 kg	1 kg
5: 8–10 days after previous application	Late blight, early blight, Macrosporium	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	2 L	400 mL
	Late blight, early blight		Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,35 kg	70 g
	Late blight, early blight		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	5 kg	1 kg
6: 8–10 days after previous application	Late blight, Macrosporium	Fungicide	Iprovalicarb 55 g/kg + propineb 613 g/kg	Melody Duo WP	U	40 + M	2,5 kg	500 g
	Late blight		Mandipropamid 25 g/kg + copper oxychloride 245 g/kg	Pergado C WG	U	40 + M	4 kg	800 g
	Late blight, early blight, Macrosporium		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2 kg	400 g
7: 8–10 days after previous application	Late blight, Macrosporium, Bacterial diseases	Fungicide	Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	4 kg	800 g
	Late blight, Macrosporium		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil M WP	U	M + 4	2,5 kg	500 g
	Late blight		Chlorothalonil 500 g/L	Bravo FS	U	M	3 L	600 mL
	Late blight, early blight, Macrosporium		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2 kg	400 g

[CONTINUED] TABLE 3B. POTATO: Chemical control of diseases, insects, and weeds

Application number and timing	Diseases and Insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
8: 8–0 days after previous application	Late blight, early blight, bacterial diseases	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
9: 8-10 days after previous application	Late blight, early blight, bacterial diseases	Fungicide	Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
Weed control								
1: Before crop emergence	When the weeds are in cotyledons	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: After 1–3 days after planting	Basic monocotyledonous and bicotyledonous weeds; broadleaf weeds	Selective herbicide	Metribuzine 600 g/L	Sencor Liquid SC 600	II	C1	1 L	200 mL
	Basic monocotyledonous and bicotyledonous weeds		Prometryn 500 g/L	Gesagard FW	U	C1	4 L	800 mL
3: According to weed's developmental stage	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxydim 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3C. CUCUMBER: Chemical control of diseases, insects, and weeds								
Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before sowing or crop emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after crop emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew, late blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,5 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Anthracoze, downy mildew, spots, bacteriosis		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Aphids, Colorado beetle		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Aphids, whiteflies, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting; or if seed is sown, in the 2- to 3-leaf stage after emergence	Downy mildew, late blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew		Metiram 420 g/kg + copper dihydroxide 390 g/kg	Kauritil WG	U	M + M	3,0 kg	600 g
	Downy mildew, root rots, diseases caused by oomycete soil fungi		Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy	U	28 + 33	2–2,5 L	400 mL
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Aphids, Colorado beetle		Deltamethrin 25 g/L	Decis Fluxx	III	3(A)	0,5 L	100 mL
	Colorado beetle		Lambda-cyhalothrin 50 g/L	Karate Zeon CS	II	3(A)	0,15 L	30 mL

[CONTINUED] TABLE 3C. CUCUMBER: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
2: 10–12 days after previous application	Downy mildew	Fungicide	Iprovalicarb 55g/kg + propineb 613 g/kg	Melody Duo WP	U	40 + M	2,5 kg	500 g
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil M WP	U	M + 4	2,5 kg	500 g
	Late blight, early blight, spots		Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,4 kg	80 g
	Powdery mildew		Penconazole 100 g/L	Topas, EC	U	3	0,15 L	30 g
	Downy mildew, powdery mildew		Kresoxim methyl 500 g/kg	Strobstar WG	U	11	0,3 kg	60 g
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,25 L	50 mL
	Aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Greenhouse whitefly, thrips, mites, aphids		Pirimiphos-methyl 500 g/L	Actellic EC	U	1B	1,5 L	300 mL
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
	Thrips, mites, aphids		Dimethoate 400 g/L	Safagor EC	II	1B	1,5 L	300 mL
3: 10–12 days after previous application	Downy mildew	Fungicide	Iprovalicarb 55g/kg + propineb 613 g/kg	Melody Duo WP	U	40 + M	0,3 kg	60 g
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	0,6 kg	120 g
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	4 + M	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Late blight, early blight, spots		Ttrifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,4 kg	80 g
	Powdery mildew		Penconazole 100 g/L	Topas, EC	U	3	0,15 L	30 mL
	Downy mildew, powdery mildew		Kresoxim methyl 500 g/kg	Strobstar WG	U	11	0,3 kg	60 g
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	75 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1,0 L	200 mL
			Tebufenpyrad 200 g/kg	Masai WP	U	21	0,5 kg	100 g
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 g
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,4 L	80 mL
Aphids	Acetamiprid 200 g/kg		Mosetam 20 WDG	U	4A	0,3 kg	60 g	

[CONTINUED] TABLE 3C. CUCUMBER: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
4: 10–12 days after previous application	Downy mildew	Fungicide	Iprovalicarb 55 g/kg + propineb 613 g/kg	Melody Duo 66,8 WP	U	40 + M	0,3 kg	60 g
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	0,6 kg	120 g
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	4 + M	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1,0 L	200 mL
			Tebufenpyrad 200 g/kg	Masai WP	U	21	0,5 kg	100 g
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 g
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
Colorado beetle	Alpha-cypermethrin 100 g/L		Fastac EC	III	3	0,4 L	80 ml	
Aphids	Acetamiprid 200 g/kg		Mosetam 20 WDG	U	4A	0,3 kg	60 g	
5: 10–12 days after previous application	Anthracnose, downy mildew, bacteriosis	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	2 L	400 mL
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	4 + M	2,5 kg	500 g
	Early blight, anthracnose, spots		Sulfur 800 g/kg	Sulfolac WG	U	M	3 kg	600 g
	Early blight, anthracnose, spots		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g
6: 10–12 days after previous application	Downy mildew	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Anthracnose, downy mildew, spots, bacteriosis		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	II	M	5 kg	1 kg
	Anthracnose, downy mildew, spots, bacteriosis		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Anthracnose, spots, early blight		Sulfur 800 g/kg	Sulfolac WG	U	M	3 kg	600 g
	Anthracnose, spots, early blight		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g

[CONTINUED] TABLE 3C. CUCUMBER: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
7: 10–12 days after previous application	Downy mildew	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Anthracnose, downy mildew, spots, bacteriosis		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	II	M	5 kg	1 kg
	Anthracnose, downy mildew, spots, bacteriosis		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Anthracnose, spots, early blight		Sulfur 800 g/kg	Sulfolac WG	U	M	3 kg	600 g
	Anthracnose, spots, early blight		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g
Weed control								
1: Before sowing, or before transplanting crop seedlings	Weeds In the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: According to weed's developmental stage	Annual and perennial cereal and broadleaf weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxydim 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided with green lines. Several products listed under each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type maybe used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3D. CABBAGE: Chemical control of diseases, insects, and weeds								
Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifica-tions [~]	Application rate	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before or after sowing	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,5 kg	300 g
	Early blight		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Early blight		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Moths, aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M + 27	1,5 kg	300 g
	Early blight		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Moths, aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,3 L	60 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
2: 8–10 days after previous application	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45, WP	U	M	1,2–1,6 kg	300 g
	Downy mildew		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M + 27	1,5 kg	300 g
	Early blight		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg

[CONTINUED] TABLE 3D. CABBAGE: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Tox-icity^	Resistance classifica-tions~	Application rate	
							Per ha	In 100 L water
	Moths, aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,15 L	30 mL
3: 8–10 days after previous application	Downy mildew	Fungicide	Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M + 27	1,5 kg	300 g
	Early blight		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Moths, aphids, Colorado beetle	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
4: 8–10 days after previous application	Early blight	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, early blight		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Moths, aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,15 L	30 mL
Weed control								
1: Before sowing or before transplanting seedlings	Weeds in the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: Before trans-planting or before crop germination	Annual bicotyledonous and cereal weeds	Selective herbicide	Pendimethalin 330 g/L	Stomp EC	U	K1	4 L	800 mL
3: When weeds are in vegetative stages	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxydim 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

^Toxicity (classes as defined by the World Health Organization)	~Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3E. TOMATO: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifica-tions~	Application rates	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before sowing or after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew, late blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Macrosporium, early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,5 kg	300 g
	Late blight		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Moths, aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting; or, if sown, in the 2- to 3-leaf stage	Downy mildew, late blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Macrosporium, early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Late blight		Metiram 420 g/kg + copper dihydroxide 390 g/kg	Kauritil WG	U	M + M	3,0 kg	600 g
	Downy mildew, root rots, diseases caused by oomycete soil fungi	Insecticide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	2-2,5 L	400 mL
	Moths, aphids		Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,5 L	100 mL
	Colorado beetle		Lambda-cyhalothrin 50 g/L	Karate Zeon CS	II	3(A)	0,15 L	30 mL

[CONTINUED] TABLE 3E. TOMATO: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifications~	Application rates	
							Per ha	In 100 L water
2: 10–12 days after previous application	Early blight, late blight, spots	Fungicide	Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,3 kg	60 g
	Early blight, late blight		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Late blight		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Early blight, late blight		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Macrosporium, early blight		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Moths, aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths, aphids, Colorado beetle		Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Greenhouse whitefly, aphids, moths		Pirimiphos-methyl 500 g/L	Actellic EC	U	1B	1,5 L	300 mL
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
3: 10–12 days after previous application	Early blight, late blight, spots	Fungicide	Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,3 kg	60 g
	Late blight, powdery mildew, early blight		Azoxystrobin 93,5 g/L + folpet 500 g/L	Quadris Max	U	11 + M	0,6 kg	120 g
	Late blight		Dimethomorph 90 g/kg+mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Downy mildew, late blight		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M + 27	2,5 kg	500 g
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 mL
	Moths, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A + 3(A)	0,75 L	150 mL
4: 10–12 days after previous application	Late blight, anthracnose	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	M + 28	2,0 kg	400 gr
	Late blight, spots		Chlorothalonil 500 g/L	Bravo FS	U	M	3,0 L	600 mL
	Late blight, early blight		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 gr
	Mites, aphids, mites	Insecticide	Dimethoate 400 g/L	Bi 58 EC	II	1B	1,5 L	300 mL
	Colorado beetle		Lambda-cyhalothrin 50 g/L	Grand 5 EC	II	3(A)	1,5 L	300 mL
5: 10–12 days after previous application	Anthracnose, late blight, bacteriosis	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	M + 28	3,0 L	600 mL
	Late blight, spots		Chlorothalonil 500 g/L	Bravo FS	U	M	3,0 L	600 mL
	Downy mildew, late blight		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M + 27	3,0 kg	600 gr
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 mL

[CONTINUED] TABLE 3E. TOMATO: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Tox-icity^	Resistance classifica-tions~	Application rates	
							Per ha	In 100 L water
	Moths, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A + 3(A)	0,75 L	150 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	II	4A	0,12 kg	24 gr
	Colorado beetle		Lambda-cyhalothrin 50 g/L	Grand 5 EC	II	3(A)	1,5 L	300 mL
6: 10–12 days after previous application	Late blight	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Colorado beetle	Insecticide	Lambda-cyhalothrin 50 g/L	Grand 5 EC	II	3(A)	1,5 L	300 mL
7: 10–12 days after previous application	Late blight	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight, bacterial diseases		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6L	1,2 L
	Moths, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A , 3(A)	0,75 L	150 mL
8: 10–12 days after previous application	Late blight, bacterial diseases	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Downy mildew, late blight, early blight, bacterial diseases		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
Weed control								
1: Before sowing, or before transplanting seedlings	Weeds In the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyfosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: After 15–20 days from transplanting crop	Broadleaf, annual, and cereal weeds	Selective herbicide	Metribuzine 600 g/L	Sencor Liquid SC 600	II	C1	0,5 L	100 mL
			Pendimethalin 330 g/L	Stomp EC	U	K1	4 L	800 mL
			Metribuzine 700 g/kg	Senkron WDG	II	C1	0,7 kg	140 g

[CONTINUED] TABLE 3E. TOMATO: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
3: According to weed's developmental stage	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxym 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

Table 3F. CARROT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
1: After emergence, in the 2- to 3-leaf stage	Early blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,6 kg	320 g
	Early blight		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M	1,5 kg	300 g
	Early blight, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids, thrips	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,05 kg	10 g
	Carrot fly		Delthametrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,3 L	60 mL
	Aphids, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Carrot fly		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
2: 8–10 days after previous application	Early blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,6 kg	320 g
	Early blight		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M	2,5 kg	500 g
	Early blight, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids, thrips	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,05 kg	10 g
	Carrot fly		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Aphids, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Click beetles		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,15 L	30 mL
3: 8–10 days after previous application	Rots, early blight, powdery mildew	Fungicide	Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,4 kg	80 g
	Carrot fly	Insecticide	Delthametrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,3 L	600 mL
	Carrot fly		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,2 L	400 mL
	Click beetles		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
4: 8–10 days after previous application	Rots, early blight, powdery mildew	Fungicide	Trifloxystrobin 250 g/kg + tebuconazole 500 g/kg	Nativo 75 WG	U	11 + 3	0,4 kg	80 g
	Rots (brown rot, black rot, cottony rot, gray mold rot, crater rot), phomopsis, septoria, cercosporium, early blight		Iprodione 500 g/L	Rovral Aquaflo SC	U	2	1 L	200 mL
	Carrot fly	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,25 L	25 g
	Carrot fly		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,4 L	80 mL
	Click beetles		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL

[CONTINUED] Table 3F. CARROT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
5: 8–10 days after previous application	Early blight	Fungicide	Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	2,8 kg	560 g
	Aphids, thrips	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,04–0,05 kg	10 g
	Aphids, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Click beetles		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,15 L	30 mL
Weed control								
1: Before sowing or crop emergence	Weeds in the vegetative stage	Non-selective) herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: Before sowing or crop emergence, in the 2- to 3-leaf stage	Annual bicotyledonous and cereal weeds	Selective herbicide	Prometryn 500 g/L	Gesagard FW	U	C1	3 L	600 mL
3: Before crop emergence	Annual bicotyledonous and cereal weeds	Selective herbicide	Pendimethalin 330 g/L	Stomp, EC	U	K1	4 L	800 mL
4: When the crop root is the diameter of a pencil	Annual bicotyledonous cereal and broadleaf weeds	Selective herbicide	Metribuzine 600 g/L	Sencor Liquid SC 600	II	C1	0,5 L	100 mL
5: According to weed's developmental stage	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxydim 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Class III materials are estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Class II materials are estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3G. PEPPER: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rate	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before sowing or after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,08–0,12 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting; or, if sown, in the 2-to 3-leaf stage	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	0,04–0,05 kg	10 g
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,4 kg	80 g

[CONTINUED] TABLE 3G. PEPPER: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifications~	Application rate	
							Per ha	In 100 L water
2: 10–12 days after previous application	Downy mildew	Fungicide	Mancozeb 800 g/kg	Dithane M-45 WP	U	M	0,2–1,6 kg	300 g
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 mL
	Moth larva, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A + 3(A)	0,75 L	150 mL
	Moths, aphids		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,5 L	100 mL
	Greenhouse whitefly, mites, aphids, thrips		Pirimiphos-methyl 500 g/L	Actellic EC	U	1B	1,5 L	300 mL
Colorado beetle	Chlorpyrifos 500 g/L + cypermethrin 50 g/L		Nurel-d EC	II	1B + 3 (A)	1,5 L	300 mL	
3: 10–12 days after previous application	Downy mildew, late blight	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Macrosporium, early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Powdery mildew, late blight		Kresoxim methyl 500 g/kg	Strobstar WG	U	11	0,3 kg	60 g
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1,0 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 kg	74 mL
	Moth larva, Colorado beetle	Insecticide	Thiacloprid 100 g/L + deltamethrin 10 g/L	Proteus OD	III	4A + 3(A)	0,75 L	150 mL
	Colorado beetle		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
Greenhouse whitefly, mites, aphids, thrips	Pirimiphos-methyl 500 g/L		Actellic, EC	U	1B	1,5 L	300 mL	
4: 10–12 days after previous application	Late blight, bacterial diseases	Fungicide	Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Early blight, late blight, Macrosporium		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
5: 10–12 days after previous application	Late blight, bacterial diseases	Fungicide	Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
6: 10–12 days after previous application	Late blight, bacterial diseases	Fungicide	Copper sulfate + calcium chloride, ex. Cu 220	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L

[CONTINUED] TABLE 3G. PEPPER: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Tox-icity^	Resistance classifi-cations~	Application rate	
							Per ha	In 100 L water
Weed control								
1: Before sowing, or before trans-planting seedlings	Weeds In the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: According to weed's develop-mental stage	Annual and perennial cereal and broadleaf weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxym 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

^Toxicity (classes as defined by the World Health Organization)	~Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

Table 3H. BEETROOT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifica-tions [~]	Application rate	
							Per ha	In 100 L water
1: After emergence, in the 2- to 3-leaf stage	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,6 kg	320 g
	Downy mildew		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M	1,5 kg	300 g
	Cercospora leaf spot		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,05 kg	10 g
	Aphids		Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,3 L	60 mL
	Aphids, thrips, whiteflies		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Aphids, flies		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
2: 8–10 days after previous application	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,6 kg	320 g
	Downy mildew		Propineb 700 g/kg + cymoxanil 60 g/kg	Safacol Combi WP	U	M	2,5 kg	500 g
	Cercospora leaf spot		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,05 kg	10 g
	Aphids		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Aphids, thrips, whiteflies		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Aphids, click beetles		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,15 L	30 mL
3: 8–10 days after previous application	Cercospora leaf spot	Fungicide	Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	4 kg	800 g
	Cercospora leaf spot		Bordeaux mixture ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Powdery mildew, phoma leaf spot, Cercospora leaf spot		Carbendazim 500 g/kg	Platin Carbendazim 50 WP	III	1	0,8 L	160 mL
	Powdery mildew		Trifloxystrobin 500 g/kg	Zato WG 50	III	11	0,25 kg	50 g
	Aphids	Insecticide	Delthamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,3 L	600 mL
	Aphids, flies		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,2 L	400 mL
	Beet weevil, click beetles		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
4: 8–10 days after previous application	Cercospora leaf spot, bacteriosis	Fungicide	Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	4 kg	800 g
	Cercospora leaf spot, bacteriosis		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Powdery mildew		Trifloxystrobin 500 g/kg	Zato WG 50	III	11	0,25 kg	25 g
	Powdery mildew		Penconazole 100 g/L	Topas EC	U	3	0,4 L	80 mL

[CONTINUED] Table 3H. BEETROOT: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases, insects, and weeds	Pesticide type	Active ingredient	Trade name	Toxicity	Resistance classifications~	Application rate	
							Per ha	In 100 L water
	Aphids	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	600 mL
	Aphids, flies		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,2 L	400 mL
	Beet weevil, click beetles		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
5: 10–12 days after previous application	Cercospora leaf spot, bacterial diseases	Fungicide	Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	2,8 kg	
6: 10–12 days after previous application	Aphids	Insecticide	Imidacloprid 700 g/kg	Confidor Max 70 WG	III	4A	0,2 L	400 mL
	Aphids, thrips, whiteflies		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Aphids, click beetles		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,15 L	30 mL
Weed control								
1: Before sowing or crop emergence	Weeds during the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + O	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: After crop emergence	When weeds are in cotyledons	Selective herbicide	Ethofumesate 112 g/L + phenmedipham 91 g/L + desmedipham 71 g/L	Betanal Expert EC	U	N + C1 + C1	3,0 L	600 mL
3: According to weed's developmental stage	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxymid 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

^Toxicity (classes as defined by the World Health Organization)	~Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 31. ONION: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
1: In 2-leaf stage	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids, flies	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Thrips, aphids, flies		Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,5 L	100 mL
	Whiteflies, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,4 kg	80 g
2: 7–8 days after previous application	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5-2 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	II	M	5 kg	1 kg
	Thrips, aphids, flies	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Whiteflies, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,4 kg	80 g
	Moths		Dimethoate 400 g/L	Bi 58 EC	II	1B	1,5 L	300 mL
	Aphids, moths, flies		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
3: 7–8 days after previous application	Downy mildew	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	2 L	400 mL
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Downy mildew		Metiram 700 g/kg	Polyram WG	U	M	2,5 kg	500 g
	Thrips, aphids, flies	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	2 L	60 mL
	Whiteflies, thrips		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,4 kg	80 g
	Moths		Dimethoate 400 g/L	Bi 58 EC	II	1B	2,5 kg	300 mL
	Aphids, moths, flies		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	2,5 kg	300 mL
4: 7–8 days after previous application	Early blight, downy mildew	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	2 L	400 mL
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2,0 kg	400 g
	Aphids, flies	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths		Lambda-cyhalothrin 50 g/L	Karate Zeon CS	II	3(A)	0,4 L	80 g
	Aphids, flies		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL

[CONTINUED] TABLE 3I. ONION: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
5: 10–12 days after previous application	Early blight, downy mildew	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	2 L	400 mL
	Alternaria blight		Azoxystrobin 250 g/L	Quadris SC	U	11 + M	0,5 L	100 mL
	Downy mildew		Pyraclostrobin 50 g/kg + metiram 550 g/kg	Cabrio top WG	U	11 + M	2,0 kg	400 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Aphids, flies	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths		Lambda-cyhalothrin 50 g/L	Karate Zeon CS	II	3(A)	0,4 L	80 g
	Aphids, flies		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
6: 10–12 days after previous application	Downy mildew, bacterial diseases	Fungicide	Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	4 kg	800 g
	Downy mildew		Chlorothalonil 500 g/L	Bravo FS	U	M	3,0 L	600 mL
	Downy mildew		Pyraclostrobin 50 g/kg + metiram 550 g/kg	Cabrio top WG	U	11 +M	3,0 kg	600 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
7: 10–12 days after previous application	Downy mildew, bacteriosis	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacteriosis		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	II	M	5 kg	1 kg
Weed control								
1: 3–4 days before crop emergence	When weeds are in cotyledons	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: In 1- to 2- leaf stage	Broad spectrum of bicotyledonous and broadleaf weeds	Selective herbicide	loxynil 225 g/L	Totril	II	C3	3 L	600 ml
3: According to weed's developmental stage	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxymid 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3J. GARLIC: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity ^A	Resistance classifications [~]	Application rates	
							Per ha	In 100 L water
1: In the 2-leaf stage	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 mL
	Downy mildew, early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,5 kg	300 mL
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	5 L	1 L
	Aphids, flies	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Mites		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,4 L	80 mL
	Moths		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
2: In the 4-leaf stage	Downy mildew	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 mL
	Downy mildew, early blight		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,5 kg	300 mL
	Downy mildew, early blight		Mancozeb 800 g/kg	Draco Blue WP	U	M	2,5 kg	500 gr
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids, flies	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Mites		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,4 L	80 mL
	Moths		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
3: 8–10 days after previous application	Downy mildew, early blight	Fungicide	Mancozeb 800 g/kg	Draco Blue WP	U	M	2,5 kg	500 gr
	Aphids, flies	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Mites		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,4 L	80 mL
	Moths		Chlorpyrifos 500 g/L + cypermethrin 50 g/L	Nurel-d EC	II	1B + 3(A)	1,5 L	300 mL
4: 8–10 days after previous application	Downy mildew	Fungicide	Mancozeb 800 g/kg	Draco Blue WP	U	M	2,5 kg	500 gr
	Downy mildew, bacteriosis		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Aphids, flies	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Moths		Lambda-cyhalothrin 50 g/L	Karate EC	II	3(A)	0,4 L	80 mL
5: 8–10 days after previous application	Downy mildew, bacterial diseases	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	5 L	1 L
Weed control								
1: 3–4 days before crop emergence	Weeds In the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: In 1- to 2-leaf stage	Basic bicotyledonous and broadleaf weeds	Selective herbicide	ioxynil 225 g/L	Totril	II	C3	3 L	600 mL

TABLE 3J. GARLIC: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifications~	Application rates	
							Per ha	In 100 L water
3: According to weed's developmental stage	Annual and perennial cereal weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxymid 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

^Toxicity (classes as defined by the World Health Organization)	~Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III— Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II— Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3K. WATERMELON: Chemical control of diseases, insects, and weeds								
Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifications~	Application rates	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before sowing or after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5–2 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,2–1,6 kg	300 g
	Downy mildew		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture as metallic copper 20%	Bordeaux mixture	III	M	5 kg	1 kg
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,04–0,05 kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,08–0,12k g	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting or in 2- to 3-leaf stage	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,6 kg	320 g
	Downy mildew, bacterial diseases		Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Downy mildew, root rots, and diseases caused by oomycete soil fungi		Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy	U	28 + 33	2,5 L	500 mL
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Alpac EC	III	3	0,3 L	60 mL

[CONTINUED] TABLE 3K. WATERMELON: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per 1 ha	In 100 L water
2: 10–12 days after previous application	Downy mildew, anthracnose, bacteriosis	Fungicide	Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	0,4 kg	800 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Powdery mildew		Penconazole 100 g/L	Topas EC	U	3	0,38 L	76 mL
	Mites		Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L
		Abamectin 18 g/L		Vertimec 018 EC	II	6	1 L	200 mL
		Tebufenpyrad 200 g/kg		Talav 20 WP	U	21	0,37 L	74 mL
	Aphids (melon aphid), Colorado beetle	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	600 mL
	Moths		Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
Greenhouse whitefly, aphids, thrips	Pirimiphos-methyl 500 g/L		Actellic EC	U	1B	1,5 L	500 g	
3: 10–12 days after previous application	Downy mildew, anthracnose, bacteriosis	Fungicide	Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	0,4 kg	800 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Powdery mildew		Penconazole 100 g/L	Topas EC	U	3	0,38 L	76 mL
	Mites		Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L
		Abamectin 18 g/L		Vertimec 018 EC	II	6	1 L	200 mL
		Tebufenpyrad 200 g/kg		Talav 20 WP	U	21	0,37 L	74 mL
	Moths	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,4 kg	80 g
Colorado beetle	Alpha-cypermethrin 100 g/L		Alpac EC	III	3	0,4 L	80 mL	
4: 10–12 days after previous application	Complex of diseases	Fungicide	Copper sulfate + calcium chloride 200 g/kg	Cuperval	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Sulfolac 80 WG	U	M	3 kg	600 g
	Powdery mildew		Penconazole 100 g/L	Topas EC	U	3	0,38 L	76 mL
	Moths	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,4 kg	800 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Alpac EC	III	3	0,4 L	800 mL

[CONTINUED] TABLE 3K. WATERMELON: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity [^]	Resistance classifications [~]	Application rates	
							Per 1 ha	In 100 L water
5: 10–12 days after previous application	Downy mildew	Fungicide	Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
Weed control								
1: Before sowing, or before transplanting seedlings	Weeds In the period of their vegetation	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: According to weed's developmental stage	Annual and perennial cereal and broadleaf weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxym 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

[^] Toxicity (classes as defined by the World Health Organization)	[~] Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com

TABLE 3M. MELON: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifications~	Application rates	
							Per ha	In 100 L water
Treatments before transplanting								
1: Before sowing or after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
2: 7–10 days after plant emergence	Downy mildew, root rots, diseases caused by oomycete soil fungi	Fungicide	Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy SL 840	U	28 + 33	Watering: 3 g preparation in 2 L water per m ²	
			Propamocarb hydrochloride HCL 722 g/L	Propacur N SL	U	28	Watering: 0,15% solution	
			Mefenoxam 350 g/L	Apron XL ES	II	4	Watering seedlings: 0,04% solution	
3: Treatment of seedlings before transplanting	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol WP 70	U	M	1,5 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,5 kg	300 g
	Downy mildew, bacterial diseases		Copper sulfate + calcium chloride 200 g/kg	Cuperval	III	M	5 kg	1 kg
	Downy mildew, bacterial diseases		Bordeaux mixture as metallic copper 20%	Safa Bordeaux Mix WP	III	M	5 kg	1 kg
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3(A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,1 kg	20 g
	Colorado beetle		Alpha-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL
Treatments after transplanting								
1: 10 days after transplanting; or, if sown, in the 2- to 3-leaf stage	Downy mildew, anthracnose, late blight, brown mold	Fungicide	Propineb 700 g/kg	Antracol SW	U	M	1,5 kg	300 g
	Downy mildew		Mancozeb 800 g/kg	Dithane M-45 WP	U	M	1,6 kg	320 g
	Downy mildew		Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Downy mildew, root rots, diseases caused by oomycete soil fungi		Propamocarb hydrochloride 530 g/L + fosetyl aluminum 310 g/L	Previcur Energy	U	28 + 33	2,5 L	500 mL
	Aphids (melon aphid), Colorado beetle	Insecticide	Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Moths		Deltamethrin 25 g/L	Decis Blue 25 EC	III	3 (A)	0,5 L	100 mL
	Aphids		Thiamethoxam 250 g/kg	Actara WG	U	4A	0,12 kg	24 g
	Colorado beetle		Alfa-cypermethrin 100 g/L	Fastac EC	III	3	0,3 L	60 mL

[CONTINUED] TABLE 3M. MELON: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Toxicity^	Resistance classifications~	Application rates	
							Per ha	In 100 L water
2: 10–12 days after previous application	Powdery mildew and other complex of diseases	Fungicide	Fenamidone 75g/L + propamocarb hydrochloride 375 g/L	Consento 450, SC	U	11 + 28	3 L	600 mL
	Downy mildew		Mefenoxam 40 g/L + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Powdery mildew		Penconazole 100 g/L	Topas EC	U	3	0,15 L	30 mL
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 L	74 mL
	Aphids (melon aphid), Colorado beetle Moths Greenhouse whitefly, aphids, thrips	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
			Imidaclopride 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
Pirimiphos-methyl 500 g/L			Actellic EC	U	1B	1,5 L	300 mL	
3: 10–12 days after previous application	Powdery mildew and other complex of diseases	Fungicide	Fenamidone 75 g/L + propamocarb hydrochloride 375 g/L	Consento 450 SC	U	11 + 28	3 L	600 mL
	Downy mildew		Mefenoxam 40 g/kg+ mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 g
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2 kg	400 g
	Downy mildew		Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Powdery mildew		Penconazole 100 g/L	Topas EC	U	3	0,15 L	30 mL
	Powdery mildew		Penconazole 100 g/L	Kobuz 100 EC	U	3	0,25 L	50 mL
	Mites	Acaricide	Spiromesifen 240 g/L	Oberon 240 SC	III	23	0,6 L	120 mL
			Abamectin 18 g/L	Vertimec 018 EC	II	6	1 L	200 mL
			Tebufenpyrad 200 g/kg	Talav 20 WP	U	21	0,37 L	74 mL
	Aphids (melon aphid), Colorado beetle Moths Greenhouse whitefly, aphids, thrips	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
Imidacloprid 700 g/kg			Confidor Maxi 70 WG	III	4A	0,05 kg	10 g	
Pirimiphos-methyl 500 g/L			Actellic EC	U	1B	1,5L	300 mL	

[CONTINUED] TABLE 3M. MELON: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Tox-icity^	Resistance classifica-tions~	Application rates	
							Per ha	In 100 L water
4: 10–12 days after previous application	Downy mildew	Fungicide	Iprovalicarb 55 g/kg + propineb 613 g/kg	Melody Duo 66,8 WP	U	40 + M	2,5 kg	500 g
	Downy mildew		Mandipropamid 25 g/kg + copper oxychloride 245 g/kg	Pergado C WG	U	40 + M	5 kg	1 kg
	Downy mildew		Dimethomorph 90 g/kg + mancozeb 600 g/kg	Acrobat Top WG	U	40 + M	2 kg	400 g
	Downy mildew, anthracnose, bacteriosis		Cymoxanil 30 g/kg + bordeaux mixture as metallic copper 22.5%	Cupertin Super	III	27 + M	4 kg	800 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Sulfolac 80 WG	U	M	3 kg	600 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g
	Aphids (melon aphid), Colorado beetle	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Moths		Imidacloprid 700 g/kg	Confidor Maxi 70 WG	III	4A	0,05 kg	10 g
	Greenhouse whitefly, aphids, thrips		Pirimiphos-methyl 500 g/L	Actellic EC	U	1B	1,5 L	300 mL
5: 10–12 days after previous application	Downy mildew	Fungicide	Iprovalicarb 55 g/kg + propineb 613 g/kg	Melody Duo 66,8 WP	U	40 + M	2,5 kg	500 g
	Downy mildew		Mefenoxam 40 g/kg + mancozeb 640 g/kg	Ridomil Gold MZ	U	4 + M	2,5 kg	500 kg
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Armetil M WP	U	M + 4	2,5 kg	500 g
	Downy mildew		Mancozeb 640 g/kg + metalaxyl 80 g/kg	Ridonet MZ 72 WP	U	M + 4	2,5 kg	500 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Sulfolak 80 WG	U	M	3 kg	600 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g
	Aphids (melon aphid), Colorado beetle	Insecticide	Delthamethrin 25 g/L	Decis Fluxx	III	3(A)	0,3 L	60 mL
	Greenhouse whitefly, aphids, thrips		Pirimiphos-methyl 500 g/L	Actellic EC	U	1B	1,5 L	300 mL
6: 10–12 days after previous application	Downy mildew	Fungicide	Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Downy mildew		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 l
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Sulfolak 80 WG	U	M	3 kg	600 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g
7: 10–12 days after previous application	Downy mildew	Fungicide	Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Downy mildew		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Sulfolak 80 WG	U	M	3 kg	600 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g

[CONTINUED] TABLE 3M. MELON: Chemical control of diseases, insects, and weeds

Application number and timing*	Diseases and insects	Pesticide type	Active ingredient	Trade name	Tox-icity^	Resistance classifica-tions~	Application rates	
							Per ha	In 100 L water
7: 10–12 days after previous application	Downy mildew	Fungicide	Copper hydroxide 400 g/kg, exp. as Cu	Iroco 40 WG	U	M	1,75 kg	350 g
	Downy mildew		Copper sulfate + calcium chloride 200 g/kg	Cuperval 20 WP	III	M	5 kg	1 kg
	Downy mildew		Bordeaux mixture, ex. copper 124 g/L	Bordoflo New SC	III	M	6 L	1,2 L
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Sulfolak 80 WG	U	M	3 kg	600 g
	Early blight, spots, anthracnose		Sulfur 800 g/kg	Thiovit Jet WG	U	M	3 kg	600 g
Weed control								
1: Before sowing, or before trans-planting seedlings	Weeds in the vegetative stage	Non-selective herbicide	Glyphosate 360 g/L	Rumbo SL 36	III	G	3 L	600 mL
			Glyphosate 500 g/L, potassium salt	Uragan Forte SL	U	G + 0	3 L	600 mL
			Glyphosate-isopropyl acid 360 g/L	Dominator WP	U	G + Z	3 L	600 mL
2: According to weed's develop-mental stage	Annual and perennial cereal and broadleaf weeds	Selective herbicide	Fenoxaprop-P-ethyl 69 g/L	Furore-super EW 69	U	A	2,0 L	400 mL
			Fluazifop-p-butyl 150 g/L	Fusilade-Forte EC	II	A	2,0 L	400 mL
			Tepraloxydin 50 g/L	Aramo EC	U	A	1,8 L	360 mL

*Applications are divided by green lines. Several products are listed for each pesticide type. In certain applications only one product is recommended. When a combination of products is recommended, only one product type may be used in the combination.

^Toxicity (classes as defined by the World Health Organization)	~Resistance classifications (FRAC/IRAC codes, HRAC groups)
U—Unlikely to present acute hazard	FRAC: Fungicide Resistance Action Committee, http://www.frac.info/home
III—Slightly toxic: Estimated to be fatal to an adult human at some dose in excess of 30 g.	IRAC: Insecticide Resistance Action Committee, http://www.irac-online.org
II—Moderately toxic: Estimated to be fatal to an adult human at a dose of 5 to 30 g.	HRAC: Herbicide Resistance Action Committee, http://www.hracglobal.com