

MARATHON®

Greenhouse & Nursery Insecticide



FOR SYSTEMIC AND FOLIAR INSECT CONTROL ON ORNAMENTALS* IN GREENHOUSES, NURSERIES, AND INTERIOR PLANTSCAPES.

Product Information Bulletin

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GENERAL INFORMATION

Marathon is a highly-active insecticide that demonstrates thorough systemic activity in plants when applied to the soil surface. **Marathon** applied as a foliar spray provides translaminar activity resulting in quick knockdown and extended residual control.

Common Name: Imidacloprid

Class: Neonicotinoid

Packaging:

- **Marathon 1% G (Topical)**
5 pound container
50 pound container
- **Marathon 60WP (Drench)**
Five (5) 20 gram water soluble packets
- **Marathon II (Drench or Spray)**
250 ml bottle

RESTRICTED ENTRY INTERVAL (REI) AND SIGNAL WORD

REI = **12 hours**

Signal Word = **CAUTION**

PERSONAL PROTECTION EQUIPMENT (PPE)

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

MODE OF ACTION

Marathon works by binding to the insect's nicotinic acetylcholine receptors, disrupting nerve transmission. **Marathon** is not a cholinesterase inhibitor.

INSECTS CONTROLLED

Adelgids	Root Mealybugs
Aphids	Root Weevils (e.g. Black Vine Weevil)
Fungus Gnat	Royal Palm Bugs
Japanese Beetle Adults	Sawfly Larvae
Lacebugs	Soft Scale
Leafhoppers (Glassy Winged Sharp Shooter)	White Grub Larvae
Leafminers	Japanese Beetles Masked Chafers European Chafers Oriental Beetles Asiatic Garden Beetle
Longhorned and Flatheaded Borers	Whiteflies
Mealybugs	
Psyllids	

See label for complete list of insects controlled.

ADVANTAGES OF MARATHON

- Up to 12 weeks systemic activity
- Quick knockdown as a spray
- Highly translaminar as a spray
- Low use rates
- Broad spectrum insect control
- Labeled for greenhouse vegetables
- Ebb & flood labeling

APPLICATION RATES

Foliar spray: 50 ml per 100 gallons (**Marathon II**)
Foliar applications should be made when insect populations are at low levels and can be repeated on an as-needed basis. The addition of an organosilicone surfactant may increase efficacy.

* Including vegetable plants intended for resale.

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Soil application rates: (see tables)
 Soil applications should be made when insect populations are at low levels. Soil should be moderately moist when application is made. Irrigate moderately but thoroughly after application allowing no leaching or runout from containers for at least three irrigations or 10 days whichever is longer.

TANK MIXING

Marathon 60WP and **Marathon II** have been found to be compatible with commonly used liquid fertilizers, fungicides, and insecticides. If local experience is unavailable, check compatability in a small jar test.

RESISTANCE MANAGEMENT

Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of this product should conform to resistance management strategies established in your area. It is recommended this product *not be* used in sequence with any other product with the same mode of action.

APPLICATION TIPS

Marathon as a drench should be applied to established but actively growing plants. Because **Marathon** is taken up by the roots and translocated throughout the plant, applications should be made when the root system is visible on the perimeter of the growing media. Applications made to a poor or underdeveloped root system will result in less insect control. If the plant is healthy and under minimal stress, **Marathon** uptake will be more efficient. If drench applications are made too late, control will be negatively affected.

Media should be moderately moist at the time of application. Irrigate moderately but thoroughly after application allowing no leaching or runout from containers for at least three irrigations or 10 days whichever is longer.

APPLICATION RATES

Marathon 1% G Topical Rates

USE PATTERN	CONTAINER SIZE (inches)	Dosage	
		Topical Application	
		Topical Rate	
		Level Teaspoon	Grams/pot
Herbaceous Species (one or two plants per pot)	2.0 to 3.0	1/8 to 1/4	0.5 to 1.0
	3.5 to 5.0	1/4 to 1/3	1.0 to 1.4
	5.5 to 7.0	1/3 to 1/2	1.4 to 2.0
	8.0 to 10.0	1/2 to 2/3	2.0 to 2.7
	11.0 to 12.0	2/3 to 1	2.7 to 4.1
Woody Perennial Species (three or more plants per pot)	2.0 to 3.0	1/4 to 1/3	1.0 to 1.3
	3.5 to 5.0	1/3 to 1/2	1.3 to 2.0
	5.5 to 7.0	1/2 to 2/3	2.0 to 2.7
	8.0 to 10.0	2/3 to 1	2.7 to 4.1
	11.0 to 12.0	1 to 1-1/2	4.1 to 6.1

Marathon 60 WP Liquid Drench Rates

USE PATTERN	RATES	
	Container Size (inches)	Number of pots treated with one (1) Packet
Herbaceous Species - Including Vegetable plants (one or two plants per pot)	2	3000
	3	2000
	4	1500
	5	1200
	6	1000
	7	850
	8	750
	9	675
	10	600
	11	550
	12	500
Woody Perennial Species (Or herbaceous and vegetable plants three or more plants per pot)	2	2000
	3	1350
	4	1000
	5	800
	6	650
	7	550
	8	500
	9	450
	10	400
	11	350
	12	300

Marathon II Liquid Drench Rates

USE PATTERN	RATES	
	Container Size (inches)	Number of pots treated with 50 ml. (1.7 fl. oz.)
Herbaceous Species - Including Vegetable plants (one or two plants per pot)	2	3000
	3	2000
	4	1500
	5	1200
	6	1000
	7	850
	8	750
	9	675
	10	600
	11	550
	12	500
Woody Perennial Species (Or herbaceous and vegetable plants three or more plants per pot)	2	2000
	3	1350
	4	1000
	5	800
	6	650
	7	550
	8	500
	9	450
	10	400
	11	350
	12	300

* See label for specific drench instructions.

Marathon II Foliar Spray Rates

CROP	PEST	DOSAGE
Trees (including non-bearing fruit and nut)	Adelgids	1.7 fl. oz. (50 ml) per gallon of water
Shrubs	Aphids	
Evergreens	Japanese Beetles (adults)	
Flowers	Lacebugs	
Foliage Plants	Leaf Beetles	
Ground Covers	(including elm and viburnum leaf beetles)	
Interior Plantscapes	Leafhoppers	
Vegetable Plants	(including glassy winged sharpshooter)	
	Leafminers	
	Mealybugs	
	Sawfly Larvae	
	Thrips	
	(suppression)	
	Whiteflies	

Marathon 60 WP Ebb and Flood Rates

POT SIZES (inches)	NUMBER OF POTS TREATED WITH ONE PACKET	
	Herbaceous species including vegetable plants (one or two plants per pot)	Woody perennials, Herbaceous species including vegetable plants (3 or more per pot)
2	3000	2000
3	2000	1350
4	1500	1000
5	1200	800
6	1000	650
7	850	550
8	750	500
9	675	450
10	600	400
11	550	350
12	500	300

Marathon II Ebb and Flood Rates

* See label for specific drench instructions.

POT SIZES (inches)	NUMBER OF POTS TREATED WITH 50 ML (1.7 fl. oz.)	
	Herbaceous species including vegetable plants (one or two plants per pot)	Woody perennials, Herbaceous species including vegetable plants (3 or more per pot)
	ml per 100 plants	ml per 100 plants
2	1.6 mL	2.5 mL
3	2.5 mL	3.7 mL
4	3.3 mL	5 mL
5	4.2 mL	6.3 mL
6	5 mL	7.7 mL
7	5.9 mL	9.1 mL
8	6.6 mL	10 mL
9	7.4 mL	11.1 mL
10	8.3 mL	12.5 mL
11	9 mL	14.3 mL
12	10 mL	16.7 mL

Injection Techniques with Marathon 60WP

Example of Application Strategies

(for herbaceous species - one or two plants per pot)

POT SIZE	INJECTION RATIO	NUMBER OF 20 GRAM PKTS/1 GAL. STOCK SOLUTION	OUNCES DILUTION/ POT	NUMBER POTS TREATED WITH 100 GAL.	REMARKS
2	1:100	4 pkts / 1 gal. water	1.0	12,000	<i>The chart is only an example. This is based on a finished solution being applied at a rate of 1/2 fl. oz. for every inch of pot diameter. This volume is to prevent loss of active ingredient through leaching. The pot media should be prewet before application to assure good surface distribution. Keep pot media moist for about 10 days. Then irrigate as normal.</i>
3	1:100	4 pkts / 1 gal. water	1.5	8,000	
4	1:100	4 pkts / 1 gal. water	2.0	6,000	
5	1:100	4 pkts / 1 gal. water	2.5	4,800	
6	1:100	4 pkts / 1 gal. water	3.0	4,000	
7	1:100	4 pkts / 1 gal. water	3.5	3,400	
8	1:100	4 pkts / 1 gal. water	4.0	3,000	
9	1:100	4 pkts / 1 gal. water	4.5	2,700	
10	1:100	4 pkts / 1 gal. water	5.0	2,400	
11	1:100	4 pkts / 1 gal. water	5.5	2,200	
12	1:100	4 pkts / 1 gal. water	6.0	2,000	

If your injector is 1:75, then 3 pkts/1 gal water through 75 gallons of water will treat 3,000 - 6" pots.

If your injector is 5:500 then 20 pkts/5 gal water through 500 gallons of water will treat 20,000 - 6" pots.

50 mL Marathon II equals 1- 20 gram water soluble packet of Marathon 60 WP.

