

# MARATHON 1% GRANULAR

*James R. Baker and Douglas A. Bailey  
North Carolina State University*

Reprinted from the North Carolina Flower Growers' Bulletin Vol. 39 No. 3

Miles Agriculture Division has registered Marathon™, a new, systemic pesticide for use in greenhouses and nurseries. Marathon™ has "CAUTION" for the hazard signal word and it is NOT a restricted use pesticide. Applicators and other handlers must wear the following personal protective equipment (PPE): Long-sleeved shirt and long pants, waterproof gloves and shoes plus socks. The restricted entry interval (REI) is 12 hours. For earlier re-entry, workers must wear the same PPE as listed above for applicators.

Marathon™ is labeled for Aphids, Mealybugs, Thrips and Whiteflies on Ornamental Crops grown in containers, flats, benches or beds. The label also has direction for use as a premix in growing media. There is a large difference in dosage per pot when the per pot surface application method is compared to the preplant substrate incorporation and to the overhead broadcast application method (Table 1). For example, the labeled surface application rate for a 5 1/2 to 7 inch pot is 1.3 grams (1/3 tsp—have you ever seen a 1/3 tsp measuring device?) per pot. The rate for substrate incorporation is 3 lb/yd³. One cubic yard of substrate can fill approximately 396 standard 6 inch pots. A standard 6" pot of pretreated substrate would contain 3.4 grams of product; this is 160% more material than if the per pot surface application method is used. What a dilemma for growers! Which is the correct/required dosage per pot? From a cost and environmental impact stand-

point, it may be more prudent to use surface applications or reduce the preplant substrate incorporation to 1.2 lb/yd³ (if acceptable control is achieved at this rate) for 6" potted crops.

Let's look at another example using smaller pots. The recommended surface application rate for a 2 to 3 inch pot is 0.5 grams (1/8 tsp) of Marathon™ per pot. The rate for substrate incorporation is 3 lb/yd³. One cubic yard of substrate can fill approximately 6,952 standard 2 1/4 inch pots. Pots of pretreated substrate would each contain 0.2 grams of product; this is 60% less material than if the per pot surface application method is used! Which is the best dosage? Let's confuse the issue even more. There is a third application method on the label, overhead broadcasting from flats, benches or beds. The recommended rate is 9 ounces per 1000 ft² for flats. Let's assume we are growing bedding plants in 11"x 21" flats of 36's (each cell is about 2 1/4"x2"). In our 1000ft² that we treat with the 9 ounces of Marathon™, there would be approximately 22,441 cells. Each cell would receive about 0.01 grams of Marathon™. This amount is less than 6% of the dosage per cell if we used the preplant substrate incorporation methods and only 2% of the dosage if we used the 1/8 tsp (0.5 grams) per pot application method. Again, how much is needed to achieve pest control?

**Marathon™ is labeled for Aphids, Mealybugs, Thrips and Whiteflies on Ornamental Crops grown in containers, flats, benches or beds.**

**Table 1.** Marathon™ dosage per container comparisons for the three labeled application methods and two pot sizes.

Application method	Rate	Amount per 2 1/4" pot (g)	Amount per 6" pot (g)
Broadcast over flats	9 oz/1000 ft² of flats	0.01	not labeled
Apply to each pot	1/8 tsp for a 2 to 3" pot 1/3 tsp to a 5 1/2 to 7" pot	0.50	1.30
Substrate incorporation	3 lb/yd³ of substrate	0.20	3.40

If 2% of one labeled dosage is enough, then growers could greatly reduce their chemical costs by using the method that delivers the lowest rate per pot. Perhaps there really is a big difference in the efficacy of the product, depending on how it is applied. Perhaps different growers will report differing views on the effectiveness of Marathon™, depending on how they apply it and what pot size they are producing. As you use the product, make sure you accurately record the method and rate applied to allow for comparisons of method/rate effectiveness among growers.

Marathon™ is distributed to the greenhouse and nursery trade by Olympic Horticultural Products. The same active ingredient, imidacloprid, has been registered for turfgrass, landscape ornamentals and interiorscapes as Merit® 75 WSP. Because the Worker Protection Standard, 40 CFR Part 170 does not include landscapes and interiorscapes, there is no minimal re-entry standard for Merit® 75 WSP. However, the label specifically prohibits the use of Merit® 75 WSP in greenhouses or on turfgrass farms. WSP stands for water soluble

packet. Merit® 75 WSP is packaged in water soluble packets that are NOT to be subdivided. Each packet makes 300 gallons of spray mixture.

There is some concern among growers that whiteflies and aphids may become resistant to Marathon™. If growers across the world could agree upon a resistance strategy for Marathon™, resistance could be delayed greatly. In the lack of such an agreement, it is likely that some growers will come to depend 100 percent upon Marathon™ for control of aphids, whiteflies and mealybugs. Imidacloprid is also being developed for vegetable insect management and perhaps for other crops as well. With such wide spread use of imidacloprid, it would be a miracle if resistance does not occur

The conscientious grower can do his or her part to try to delay resistance by: 1) using Marathon™ for 6 to 9 months and then switching to other pesticides for a few months; 2) screening greenhouses to reduce the need of frequent applications of pesticides; and 3) purchasing plants from suppliers that do not ship insects along with the cuttings.

**Marathon™ is distributed to the greenhouse and nursery trade by Olympic Horticultural Products.**

**There is some concern among growers that whiteflies and aphids may become resistant to Marathon™.**

