

# **APPLICATIONS TO CONTAINERIZED PLANTS IN GREENHOUSES AND INTERIOR PLANTSCAPES - APHIDS**

## General Information

### PRODUCT INFORMATION

Mainspring is a suspension concentrate that may be applied for insect control on ornamental plants, shrubs and trees in greenhouses and interior plantscapes. Mainspring can be applied as a foliar spray, as a soil drench, and via chemigation. When applied as a foliar spray, the product will have translaminar movement and be locally systemic, providing residual efficacy of foliar insect pests. When Mainspring is applied to the root system of plants, it will be translocated upward in the plant due to its systemic activity. Systemic upward movement in herbaceous plants will be quicker than in those of woody plants, such as trees and shrubs. Soil applications should be made prior to anticipated pest infestation to allow adequate systemic movement and to achieve optimum levels of control.

Mainspring is in GROUP 28 of the EPA's Insecticide and Acaricide Groups Based on Target Site of Action and may be used in rotational resistance management programs.

Mainspring must be diluted with water before application.

Consult your Cooperative Extension Service specialist or pest control advisor for regionally specific information regarding application timing.

### FOLIAR APPLICATIONS

Foliar treatment application rates are listed in Table 1. Mix the appropriate amount of Mainspring with the required amount of water and apply as a full-coverage foliar spray to control the selected target pest. Foliar applications offer locally systemic activity against insect pests. Repeat treatment as necessary to maintain control using higher listed application rates as pest pressure and foliage area increases while following resistance management recommendations.

Certain plant species or cultivars may be sensitive to the final spray solution. If local experience is not available, then a small number of plants should be treated and

observed for phytotoxicity for at least one week before making an application to the entire planting. When making foliar applications to plants or crop with dense canopy or with hard-to-wet foliage such as holly, ivy, or pine, the addition of a spreader sticker is recommended. Use sufficient water volume to provide thorough and uniform coverage. Avoid making applications where uniform coverage cannot be obtained or where excessive spray drift can occur. If concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the spray areas as would be used in a dilute solution.

## CONTAINER APPLICATIONS SOIL MEDIA

Soil media applications of Mainspring can be made to containerized plants to control whiteflies and other ornamental pests.

Application to soil media of containerized plants is presented in Table 2. It is recommended to only apply to moist soil media and not apply to dry or saturated soil media. For optimal performance, do not apply drench to soil media until roots from transplanting have grown. Do not leach treated soil media for at least 7 days after application or performance may be reduced.

Excessive irrigation after application could reduce insect control performance. In general, higher listed rates will be needed to control insect pests on woody plants as compared to those on herbaceous plants.

## IRRIGATION SYSTEMS (CHEMIGATION) APPLICATIONS

Mainspring may be applied by injection into an irrigation system, either alone or in combination with other pesticides or chemicals that are registered for application through irrigation systems. Application dosages are presented in Table 3 below. Dilution ratios are normally 1:100 to 1:200, depending on the system. Apply this product only through micro-irrigation (individual spaghetti tube), drip irrigation, overhead irrigation, ebb-and flood irrigation, or motorized calibrated irrigation equipment.

Do not apply through any other type of irrigation system. Lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible

person, shall shut the system down and make necessary adjustments should the need arise.

## INTEGRATED PEST MANAGEMENT (IPM) PROGRAMS

Mainspring is recommended for IPM programs in greenhouses because it does not directly impact natural arthropod predator and parasitoid populations including ladybird beetles, lacewings, minute pirate bugs and predatory mites. The feeding behavior of predatory beneficial arthropods will aid in extending natural control of other insect and mite pests and will reduce the possibility of secondary pest outbreaks. Mainspring will reduce the target pest species that may serve as a food source for beneficial arthropods. If Mainspring is tank-mixed with a product that negatively impacts beneficial arthropods, then the full benefit of Mainspring to the IPM program may not be realized.

## RESISTANCE MANAGEMENT

Some insects are known to develop resistance to products used repeatedly for control. When this occurs, the labeled dosages fail to suppress the pest population below threshold levels. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of active classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local Cooperative Extension Service specialist or pest control advisor for the latest information on resistance management in your area or crop.

## Limitations, Restrictions, and Exceptions

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Method

[Foliar spray](#)

Rates

[field rates 0](#)

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Restricted Entry Interval

4 hours

Timings

[N.A.](#)