Controlling Leaf Hoppers With Granular Insecticides©

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Using granular insecticides can help deter leafhoppers from feeding on 1st year seedlings and may help produce larger and more heavily callipered liners. Timing traditional chemical sprays to the wind currents that bring leafhoppers northwards can be a difficult task. They arrive unpredictably and when in low numbers, especially in the nymph stage, and are difficult to detect until damage is visible. By applying granular, systemic insecticides early in the life of the seedlings chemicals can be taken up by the plants and persist until the leafhoppers arrive.

Hundreds of agricultural and ornamental crops are susceptible to leafhoppers. Woody ornamental crops that are common hosts for leaf hoppers include *Acer, Prunus, Malus, Tilia*, and *Caragana* to name a few. Symptoms of leafhopper damage, commonly called "hopper burn," may include stunting and leaf distortion. The damage occurs when adults and nymphs insert their piercing-sucking mouthparts into the phloem and disrupt the movement of food and water. This feeding transfers saliva toxins that can affect leaf development. Viruses, bacteria, and mycoplasm can also be transmitted through their saliva.

We asked ourselves if delivering a systemic, granular insecticide early in the growing season would reduce leafhopper damage on selected seedling taxa. On 24 June 2009 Flagship (thiamethoxam) granular was applied to *Maackia amurense* at 120 lbs/acre. Safari (dinotefuron) granular was applied to *Caragana arborescens* at 27 lbs/acre. A rotary spreader was used in both applications.

Values below are the averages of fresh weights and lengths of 21 seedlings per treatment from random, representative samples taken on 7 Oct. 2009. Seven seedlings were collected from within 3 ft^2 plots, approximately 2 ft from each other in the seedling beds for a total of 21 plants.

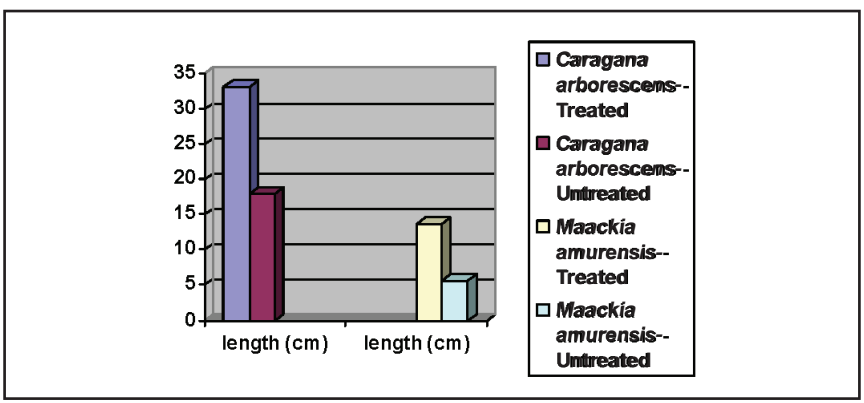

Figure 1. Average lengths from ground level to the terminal.

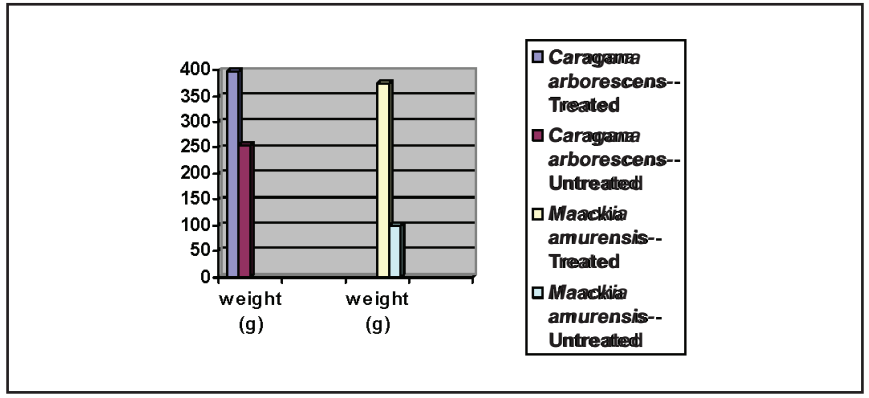

Figure 2. Average weights of freshly dug seedlings.

In summary, applying Flagship increased the average *M. amurensis* seedling length and weight by 278% and 150% respectfully over the untreated control. The average length and weight of *C. arborescens* seedlings treated with Safari increased by 55% and 85%. Using granular insecticides helped increase the average size of our seedlings. Both systemic, granular formulations included in this experiment allowed us to target the leafhoppers on an application timetable we created, and not the leafhoppers themselves.