

# Applying Imidacloprid 4F (42.3% Flowable) by Kioritz Soil Injector

One gallon of 4F concentrate contains 4 pounds (1,814 grams) of active ingredient and treats an average of 2,416 diameter inches. The Kioritz soil injector holds up to 96 ounces (3 quarts) of fluid and dispenses 1/6 ounce of fluid with each pump when the calibration ring is set on the red number 5.

**Step 1.** Judge whether the soil moisture level is moderate to wet or dry to normal. If you're in doubt about soil moisture level, you should default to the "Moderate to Wet Soil" instructions.

**Step 2.** To make a master batch of treatment mixture, follow the proportions of water and amount of product shown in the Mixing chart below. Put the water and chemical in a mixing container and shake well.

MIXING THE MASTER BATCH		
Amount of Product	Amount of Water for Moderate to Wet Soil <small>Each fl oz of this mixture contains 3 grams of active ingredient.</small>	Amount of Water for Dry to Normal Soil <small>Each fl oz of this mixture contains 1.5 grams of active ingredient.</small>
1 fl oz	3.7 fl oz	8.4 fl oz
3 fl oz	11 fl oz	25 fl oz
6 fl oz	22 fl oz	50 fl oz
10 fl oz	37 fl oz	84 fl oz

**Step 3.** Measure the trunk diameter of the tree at breast height. This is called "inches dbh."

**Step 4.** Rake back any leaf litter, needle duff or debris from the base of the tree so that bare soil is accessible. At a distance of **no more than 12 inches from the base of the tree**, make one injector hole in the soil for each inch of trunk diameter. The holes should be evenly spaced around the tree and **no deeper than 2-4 inches**.  
Note: For trees smaller than 4 inches in diameter, make a minimum of 4 shallow holes around the tree.

**Step 5.** Based on the trunk diameter, pump the injector handle the number of times shown in the Dosing chart below. **Be sure to stay in the same moisture level column as you used for mixing.**

DOSING EACH TREE		
<small>Each pump dispenses 1/6 ounce of mixture.</small>		
Inches (DBH)	Pumps <b>PER INCH DBH</b> for Moderate to Wet Soil	Pumps <b>PER INCH DBH</b> for Dry to Normal Soil
1-11	1 pump / hole	2 pumps / hole
12-18	1.5* pumps / hole	3 pumps / hole
19-22	2 pumps / hole	4 pumps / hole
>22 should be treated two years in a row.	3 pumps / hole	6 pumps / hole

\* To get the equivalent of 1.5 pumps per hole, do 1 pump in half the holes and 2 pumps in the other half, distributing these two levels evenly around the tree.

**Step 6.** When you're finished treating each tree, mark it to indicate it's been treated. When finished working, triple rinse injector as described in "Introduction to Treating Hemlocks."

**CALL THE HEMLOCK HELP LINE 706-429-8010 WITH ANY QUESTIONS.**



Save Georgia's Hemlocks  
Hemlock Help Line<sup>SM</sup> 706-429-8010  
[www.SaveGeorgiasHemlocks.org](http://www.SaveGeorgiasHemlocks.org)