



M3 Micro Infusion Application Guide



Product Overview:

The M3 Infuser is the latest in refillable micro-infuser technology. You can adjust the pressure, application volume, and apply a variety of active ingredients through these capsules. The M3 puts you in control of your root flare infusions.

Be certain to read ALL the instructions covered in this application guide. Refer to the product guide and label for dosage and mixing instructions.



DIY Equipment Checklist

Equipment	Recommendation or Use
<input type="checkbox"/> M3 Infusers*	For delivering solution into the tree
<input type="checkbox"/> Fill Gun*	For accurate filling of M3 Infusers
<input type="checkbox"/> Charger Gun*	For pressurizing M3 Infusers
<input type="checkbox"/> 250ml Mixing Bottle*	Contains solution and attaches to the Fill Gun
<input type="checkbox"/> 15/64" High Helix Drill Bit*	Replace every 5 trees for best uptake and distribution
<input type="checkbox"/> Chemical Resistant Gloves*	For safe handling of chemicals
<input type="checkbox"/> Measuring or Diameter Tape*	For measuring a tree's diameter
<input type="checkbox"/> Electric Drill	The Tree Geeks recommend 18 volt models
<input type="checkbox"/> Trowel	For pulling soil away from root flares
<input type="checkbox"/> Coarse Brush	To clean off root flares
<input type="checkbox"/> Safety Glasses	For safe handling of chemicals
<input type="checkbox"/> Rake and Broom	For clean-up

***These items are all included in our M3 Infuser Application Kit (#5301)**

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Step 1: Inspecting the Tree

- Inspect tree for girdling roots, root rot, or any other sources of stress that may be affecting tree health.
- Determine how much root flare excavation is needed to make the injection sites 4-8 inches below the crest of the root flare.
- Not all trees require excavation if the root flares are visible.
- Do not treat trees with significant rot or girdling roots.
- Inspect canopy for significant die back or stress. This may compromise uptake time and distribution.

Step 2: Determining Dosage

- Refer to the product guide or label to determine dosage and volume for each M3 Infuser.

Step 3: Excavating the Root Flares

- Use a shovel or trowel to remove sod and soil without damaging the tree
- Thoroughly brush soil from root flares using a coarse brush. (Photo 1)
- Soil left on the root flare can dull the bit, clog the holes, and increase uptake time.

Step 4: Filling the M3 Infusers

- All Infusers should be filled before drilling any injection sites.
- Attach the product/mixing bottle to the Fill Gun as shown. (Photo 2)
- Set dosage dial.
 - Set the dosage on the Fill Gun by turning the dosage dial.
 - Align the tick marks on the chamber with the leading face of the plunger for proper dosage.
- Close the control valve on the M3 Infuser by turning it entirely clockwise until sealed. (Photo 3)
- Insert the indented portion of the Fill Gun tip into the duckbill valve on the M3 Infuser.
- Fill each M3 with the required volume of product by squeezing and releasing the Fill Gun trigger to bring fluid into the chamber.

- Note: the Fill Gun's chamber fills upon releasing the trigger. To avoid the chamber filling, (e.g. on the last M3 you need to fill) squeeze the trigger to evacuate fluid and turn the dosing bottle completely upright before releasing the trigger.

Step 5: Laying out M3 Infuser

- Place M3 Infusers evenly around the tree to select each infusion site. (Photo 4)
- Refer to the product label or appropriate rate card to determine the number of M3 Infusers to use.

Step 6: Drilling the infusion sites

- Drill one hole at a time and insert a pre-filled M3 Infuser before drilling the next hole. (Photo 5)
- Use a clean, sharp, 15/64" diameter, high helix drill bit.
- Drill hole at slight angle (greater than 45 degrees from horizontal) in order to allow the M3 Infuser to empty.
- Drill holes through the bark about 1 inch into healthy xylem tissue (depth will vary depending on bark thickness).
- Injection site depth must be adequate to deliver the product into the active xylem tissue.
- Do not spin the bit in the hole unnecessarily. Spinning the bit may slow uptake time.
- Do not place infusion sites into or below dead tissue.
- Do Not drill into deep valleys or sunken areas.

Step 7: Inserting the M3 Infusers

- Each M3 Infuser should be inserted and started before drilling the next hole.
- Check each M3 Infuser tip to be sure it is not plugged before inserting it.
- Insert the tip of the M3 Infuser into each hole and provide a firm quarter twist to set in place.
- Tapping or pounding with a mallet is unnecessary and not recommended.

Step 8: Starting the infusion

- Holding the M3 Infuser firmly with one hand, turn the control valve counter-clockwise until

fluid has entered the tip.

- Do not completely unscrew the control valve or pressure will be lost.
- If you find uptake is slow or the solution is not emptying, air may be added with the Charger Gun to increase the internal pressure within the M3 Infuser. (Photo 6)
- As the product is taken up by the tree, a small amount of additional air can be added to re-establish the internal pressure of the M3 Infuser.

Step 9: Pressurizing the M3 Infusers

- Determine the volume of air to be charged into each M3 Infuser.
- Insert the indented portion of the Charger Gun top into the duckbill valve on the M3 Infuser and administer the required volume of air.
- Do not over pressurize the M3 Infuser. Too much pressure can cause them to leak, come out of the injection hole, and/or blow the duckbill valve.
- TIP: Keeping the ear of the control valve over the duckbill valve can prevent the duckbill valve from being lost if it blows off.
- If uptake is still slow, it is possible to move the M3 Infuser to another injection site. Certain species will take longer to inject than others.

Step 10: Monitoring the infusion

- Check for leaks.
- If leaks are found, try seating the M3 Infuser again with a slight twist.
- If leaking persists, close the control valve, remove M3 Infuser, and drill another hole.

Step 11: Cleaning up

- Close the control valve and remove M3 Infusers.
- Replace soil and sod around the base of the tree.
- Do not treat drill holes with wound paint or other sealing compounds.



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Troubleshooting

Slow Uptake

- Perform M3 infusions after full leaf development and before significant fall color. Uptake time is reduced and distribution is better after full leaf development.
- Make sure the infusion is done on the root flares. If not, distribution and uptake will be compromised.
- Make sure all of your M3 Infusers are properly pressurized. Repeat pressurizing procedure if in doubt.
- Check your drill bit. Use only clean, sharp, high helix drill bits. Using dull drill bits will result in slow uptake. Replace bits every 5 trees.
- Water the tree a day before the infusion if drought stress is a problem. Drought stress causes trees to move less water through their conductive tissues. Maintain adequate soil moisture throughout the growing season.

Leaking

- Be sure M3 Infuser is placed far enough into the tree. Twist while pushing in for optimal performance.
- An infusion site that is not round can allow solution to escape along the sides. Try to solve this by twisting the M3 Infuser while

pushing it into the drilled hole. A new infusion site may be required if the problem cannot be corrected.

- Leaking from the mixing bottle atop the Fill Gun can result from a worn rubber septum. Replace the rubber septum when leaks begin.

No Pressure

- Be certain the duckbill valve is securely in place.
- Be certain the control valve has not been turned so far as to allow air to escape through the back.
- Check that the black O-rings along the control valve stem are in good condition and in their proper locations.

Maintenance and Storage

After Use

- Wearing chemical gloves, remove the mixing bottle from the Fill Gun.
- Fill a container with warm water and low concentration of mild dish detergent. Clean the Fill Gun chamber by submersing the tip of the Fill Gun in water and squeeze the Fill Gun trigger several times. Then repeat this procedure using clean water.
- Lubricate the Fill Gun by drawing a small volume of oil (included in M3 Application Kit) into the inlet needle and squeezing the Fill Gun trigger several times. If the provided oil is not available use a castor oil or a light vegetable oil. Never use a mineral or petroleum based oil.
- Clean M3 Infusers by rinsing with a Rinse-Aid solution and store them with the control valve opened fully to allow the infusers to dry between uses.
- Store all the M3 Infuser system components in the storage bucket (included with the M3 Application Kit).
- Do not store application system in temperatures below 41°F/5°C.
- Warning: Failure to follow these guidelines could result in product malfunction and/or decrease the longevity of the system.

DIY Replacement Parts

Item #	Item Description
□ 5101.....	M3 Infusers 16-pk
□ 5102.....	M3 Fill Gun
□ 5110.....	M3 Charger Gun
□ 5105.....	250ml Mixing Bottle with Septum
□ 5106.....	Rubber Septum 2-pk
□ 5104.....	M3 Needle Pack
□ 5111.....	M3 Duckbill Valves 3-pk
□ 5314.....	15/64" High Helix Drill Bits

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