

Elm Leaf Beetle Treatment: tree vs soil injection



Elmsavers uses an integrated and environmentally responsible treatment approach to control the destructive elm leaf beetle and restore the health and vigour of your elm trees.



Before treatment
10 March 2004

After treatment
5 March 2006

What is tree injection?

Also known as micro-injection or tree vaccination, this treatment involves the direct injecting of insecticides or fungicides (or both into) the tree trunk.

Chemistries are delivered into the sapwood or active xylem where translocation disperses the solutes to the leaf mass.

While the injection process can be undertaken throughout the year with equal effect as an insecticide, the optimum treatment period is during the autumn months. This allows ample time for the therapeutic effects of the Neonicotinyl insecticides to improve tree health for the following spring. (see also Reading University Micro Tree Injection Study – http://www.elmsavers.com.au/micro_pres/reading_content.html). The Elmsavers tree injection system is fast, efficient and inconspicuous – injection sites are sealed to avoid pathogen entry and environmental contamination is negligible.

What are some of the benefits of tree-injection?

Trees that have been injected look more vigorous and healthy than others nearby that have been soil injected. Clients often comment that their tree has improved leaf colour and leaf size compared to when it was soil injected in past years. Some further benefits include:

- Designed to protect against damage & defoliation for two or more years.
- Has a higher level of active ingredient available in the canopy, ensuring a superior level of control compared to soil injection.
- Chemistries are also highly stable within the tree compared to soil injection.
- Ideal for all environment situations.
- Complies with and exceeds OH&S standards compared to conventional treatments.
- Is the most environmentally friendly method known and is safe around children, pets and riparian situations.

What about soil injection?

Soil injection involves injecting an insecticidal solution around the root zone of the tree, and is carried out from May until October to potentially achieve two years protection targeted at the canopy. The treatment may take up to ten weeks before complete uptake occurs.

Even distribution of the injection sites is essential for an even uptake. Chemical is taken up by the root system and distributed

via the vascular system to the canopy and beetles that ingest a small amount of leaf material cease feeding immediately.

The chemical reacts within their nervous system resulting in imminent death. While Imidacloprid is one of the safest insecticides available with a very low vertebrate toxicity, but it is highly dangerous to aquatic and soil invertebrates and avoidance of waterways is stated on the label.

Soil injection is the treatment option least favoured by Elmsavers, due to its more adverse environmental impact.



Soil injection activity

While our treatment now involves injecting with Meridian® (Thiamethoxam) – a newer and environmentally safer Neonicotinyl – Elmsavers is phasing out the use of soil injection treatments in favour of more eco-friendly solutions such as tree injection.

Tree vs Soil Injection – the facts

Tree injection is designed to protect against damage & defoliation for two or more years, and is ideal for all situations, whereas overly wet or dry conditions and water restrictions will significantly limit the success of soil injection.

Soil injection failure can result in stressed trees that have severe larval damage. The soil injected insecticides may damage the soil, micro flora and also kill earthworms at levels as low as 4ppm.

For further information, go to:

<http://www.pan-uk.org/pestnews/Actives/imidaclo.htm>

Trunk-injected trees have a higher level of active ingredient available in the canopy, ensuring a superior level of control compared to soil injection, while chemistries are highly stable within the tree as compared to soil injection.

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Other key issues:

- Tree injection is the only method allowing for precise dosage and delivery of pesticide, and uses lower levels of pesticide, below Label Rate.
- Tree injection requires NO WATER during application, whereas a tree with a 100cm diameter trunk requires 92 litres of water if soil injected.
- Tree injection is the only reliable long term control, available in all conditions and year round, and has higher levels of available active ingredient that is fast acting and persistent.
- Risk of insecticidal resistance development is greatly reduced using tree injection treatment.
- Tree injection has no residues to contaminate ground water and bores.
- Soil injection square meter application rate exceeds the label rate for in-furrow applications, the (WHP) for in furrow applications is 21 weeks for grazing.
- No risk of leaching during periods of high rainfall – contaminated surface water has the potential to reach waterways killing aquatic invertebrates.
- Tree injection will not kill earthworms and other beneficial soil invertebrates, and won't affect soil biology by harming beneficial soil fungi essential for nutrient uptake.
- Tree injection is now regarded as "Best Practice", and very low risk as pesticides are internalised and sealed
- Public perception of tree injection is positive; and the treatment is scientifically proven to improve tree health and induce systemic acquired resistance.

Elmsavers is the recognised leader and innovator in tree injection and the only company to offer a minimum 2-year or extended guarantee with this method.

Our calibrated high dose treatments protect trees for three and up to seven years with our extended guarantee. The company is the first all-year-round tree injection specialists to perfect **Imidacloprid** and related **Neonicotinyl** injections in the dormant phase.