Using Starane to kill Madeira Vine

Starane® is a very effective herbicide to use in the fight against Madeira vine. Not only is it effective, but it has low toxicity to most animals and is readily biodegradable in the environment.

Using Starane on Madeira vine requires some knowledge of how it works and what to do / what not to do. This fact sheet is aimed at giving you a better picture of how to go about getting the best results and what to expect once the Starane has been properly applied.

The chemical
Starane, a herbicide developed for the control of weeds in crops, contains 200g/litre of the active ingredient ‘fluroxypyr’. This is one of the synthetic hormone group of herbicides, and so works by disrupting the growth patterns of plant cells.

It is rapidly absorbed through the leaves of plants, and so has a ‘rain-fast’ period of 2 hours (meaning that you only need 2 hours for it to be absorbed between when you spray and when it rains).

It is also a selective translocating herbicide – meaning that it doesn’t affect grasses and when absorbed by the weed, will be moved to all other parts through the plant vascular system.

The fluroxypyr in Starane is an ester molecule that rapidly converts to fluroxypyr acid once in soil, water, plants and animals. It is this acid form that affects plants as a herbicide.

Fluroxypyr is what’s called an oil soluble, water emulsifiable chemical. That means it can mix with oil-based liquids (eg diesel), but isn’t very soluble in water. It emulsifies when put in water, turning a milky white colour.

Toxicity to animals
Studies have found that fluroxypyr is relatively non-toxic to terrestrial animals (ie those that live on the land). However, the ester form of fluroxypyr is highly toxic to fish and aquatic insects.

But as fluroxypyr ester rapidly breaks down to fluroxypyr acid in water, soil and in plants and animals (and the acid form has very low toxicity to fish and aquatic life, as well as land animals), the toxicity risk to wildlife is considered low.

Not being very water soluble, the fluroxypyr ester generally remains within the top 30cm of soil if any reaches the ground, where it is then broken down by soil organisms.

The chemical is completely and rapidly broken down by the cells of animals and excreted in the urine. So, the chemical does not bioaccumulate in animal tissues.
How best to use Starane against Madeira vine

To control Madeira vine, Starane can be mixed with water and sprayed onto the leaves (foliar spraying), or mixed with diesel and applied onto the stems of the vines (basal bark spraying).

**Foliar spraying**

Starane doesn’t dissolve in water (like salt or sugar does), rather is mixes through the water. As it is oil-based, Starane will form a milky solution in water – don’t worry, this is what it’s supposed to do.

The mixing rate is 5ml of Starane per 1 litre of clean water. Water with organic matter or dirt will affect the chemical and could make it inactive.

You don’t need to add a wetting agent, but it will generally improve the final result. The wetting agent could be a spreader (eg BS1000 or Agral) which spreads the spray solution across the leaf surface. It could be a sticker (such as Codacide Oil, Synertrol Oil or Spraytech Oil) which sticks the spray solution to the leaves. Or it could be a penetrating agent (such as LI700 or Pulse Penetrant). These break down the waxy surface layer of the leaf, allowing the herbicide to penetrate through.

Don’t use soaps or detergents as a wetting agent, as these will bind with the herbicide chemical and make the spray solution ineffective.

Spray as many of the leaves as you can to ‘the point of run-off’. This is where the leaves are wet but not dripping spray solution into the soil.

Starane will not generally kill grass – it may brown it off, but it should come back. It is also generally selective for natives, and unless you get total coverage over native shrubs, they should survive any non-target spraying.

Take care around waterways. Don’t allow the spray mixture to contaminate water. If possible spray from the water edge back towards the land. Take care in areas where frogs are known to exist in the ground cover. The chemicals in Starane (and any wetting agents used) may damage the delicate skin of frogs. But generally, the fluroxypyr chemical is safe for frogs if used cautiously.

**Basal bark spraying**

The technique of basal bark spraying involves applying a diesel and herbicide mixture to only the stem of the Madeira vine. The diesel acts as a carrier and penetrant, taking the herbicide through the outer skin or bark of the vine.

Once through the bark, the herbicide goes directly into the sap-stream of the plant, which then effectively transports the herbicide throughout the whole vine (roots as well as tubers).

The mixing rate is 35ml of Starane per 1 litre of diesel.

To apply the mixture, you can paint it on with a brush, spray it on with a small spray pack, or wipe it on using something like a wik wiper or herbicide brush.
The trick is to treat a 15-30cm section and make sure you treat as many stems as you can.

Avoid contacting desirable plants, and be aware that the diesel will kill grasses beneath that are over-sprayed.

**How to tell if it's working**

Don't panic if you don't see any drastic results straight away. Madeira vine is a particularly difficult weed to kill and the movement of the herbicide through the plant will be slow (especially during winter).

Most importantly, don't damage the plants after they are sprayed. Don't cut them with a brush-cutter; don't pull them out of the trees; don't spray them with other chemicals; don't burn the area. This will only stop the herbicide from doing its work properly.

Both foliar spraying and basal bark spraying will result in a progressive withering of the leaves up the stems. The leaves higher up will look healthy and unaffected, which can make you think that it's not working. Be patient and give it time.

As the sap takes the herbicide through the plant, it will also affect the tubers. If the tubers hang onto the stems for a long time (and sometimes they'll hang on for more than a year), they'll gradually wither away as they use the energy reserves stored in the tuber.

If they fall to the ground, they will most likely shoot and start to grow. Be patient. Most of these will have fleroxypyr in them and will die as they start to metabolise the chemical stored in the tuber. If you can’t be patient, you can walk around and pick them up. They can then be bagged and thrown away in your wheelie bin. But don’t deliberately knock around the vines to make the tubers fall off. They may fall off before they get enough chemical in them and you just use up you energy that is better used doing more useful things.

Sometimes the tubers even start to shoot while they are still attached to the vine. This is a survival mechanism that kicks in when the plant is stressed because it is dying. Again, be patient and have faith in the herbicide. These tubers should have fleroxypyr in them. They will grow a while, but then the herbicide will take effect and they should die.

So, the consistent message is … be patient and have faith. Give the herbicide 3-6 months to do its stuff.

**Follow up**

Don't expect Starane to be the silver bullet. You'll need to monitor the problem and be prepared for follow-up control over the next couple of years at least.

That may involve tracing back the stems that you’ve missed – they’ll be easy to find as they’ll have healthy green leaves six months after the initial treatment.

You'll need to get rid of the tubers on the ground that have sprouted and survived. This can be by spot spraying or by pulling/digging. Start on the sprouting tubers in areas that receive high levels of light. They will grow the quickest. Tubers that sprout in darker conditions tend to stay in a state of suspended animation until
there’s a break in the canopy and the light level increases. These tubers in the dark can wait until you have more time.

The best thing about Madeira vine is that they don’t produce viable seed. So if you get rid of all the tubers through persistence, you can eradicate the weed from your property. Another good thing is that the tubers don’t float very well and tend to die if left in water for longer than 30 days.

As with using any herbicide, read and follow the directions on the label. Wear appropriate protective clothes and use safety equipment. Store it appropriately and securely.