Steamwand Non-Toxic Weed Control, a Cost Effective System to Reduce the use of Herbicides in Your Parks & Open Spaces

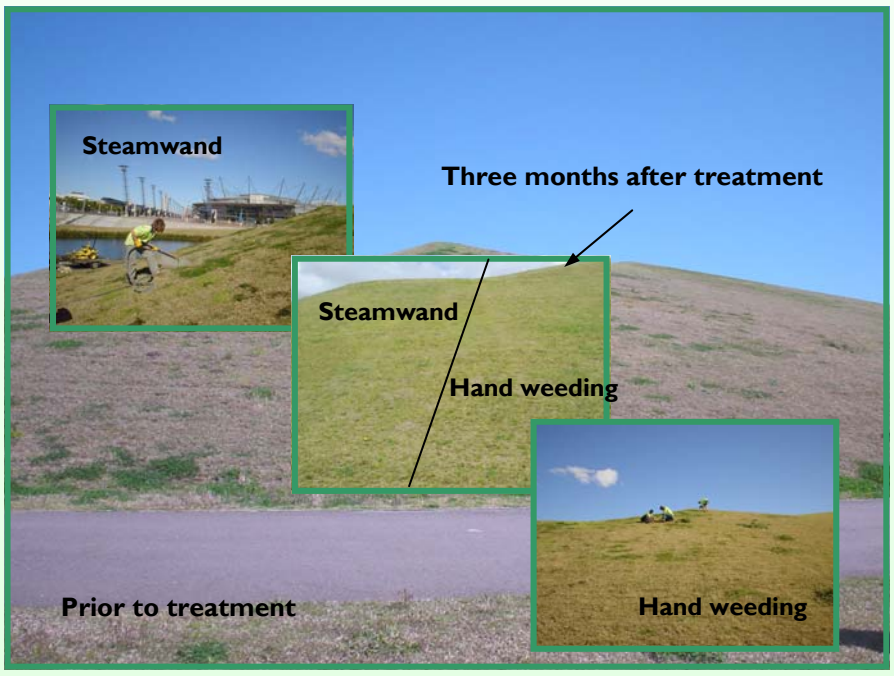
New Steamwand

Extensive Steamwand trials were conducted in partnership with the Sydney Olympic Park Authority, Sydney Royal Botanic Gardens & Domain Trust, Mount Tomah & Mount Annan Botanic Gardens & the Blue Mountains City Council. The trials funded by a grant from the Department of State & Regional Development, Australian Technology Show Case, examined the commercial viability of Steamwand in comparison with hand weeding and herbicide (Glyphosate). The trials aimed to determine whether Steamwand could be used as a weed control alternative, reducing the use of chemicals.

Conducted in spring, (Sept – Nov 2003) a peak growing season for weeds, after a prolonged drought "Annual rainfall values showed 2002 was Australia's 4th driest on record." the trial period "saw a return to near average rainfall". "The total spring rainfall of 217mm at Observatory Hill" only slightly below the seasonal average of 229mm. Temperatures, although recording an average, varied considerably "September was one of the warmest on record in Sydney; temperatures in October and November were well below average." (Commonwealth Bureau of Meteorology 2002- 2003) NSW Regional Office, Commonwealth Bureau of Meteorology (December 2003).

The report documented a wide variety of trials, in varied horticultural applications. Data was collected over three months and included: field observations, measurements & photographs. Results provided accurate coverage rates and costs per m^2 for Steamwand, Glyphosate & hand weeding. The results were compared, noting the cost & efficiency of each method used.

Steamwand 200% Faster and 50% More Cost Effective Than Hand Weeding



Steamwand was always consistently more efficient & cost effective than hand weeding. In the treatment of broad leaf weeds in turf picture above Steamwand was over 200% faster than hand weeding offering savings of up to 50%.

Steamwand proved to reduce the costs of weed control as part of a chemical reduction program:

- Steamwand was more efficient & cost effective than hand weeding, in some cases over 200% faster and offering savings of up to 50%.
- Hand weeding created green waste. Disposal costs $57.90 + GST per tonne (Waste Services NSW). Weeds treated with Steamwand disintegrate to nothing
- Steamwand was more effective than herbicide where weed species were resistant to Glyphosate such as Olive seedlings (*Olea europea)* Wandering Jew *(Tradescantia)* and Rhodes Grass *(Chloris gayana)*.
- Herbicide, as expected, was less per application than either Steamwand or hand weeding. However hidden costs of environmental pollution and damage were not factored into the trial. It is documented in the UK alone; **£ 28 billion pounds** is budgeted to eradicate chemicals including herbicides from drinking water! *"Sustainable use of groundwater. Problems and threats in the European communities"* November 1991, Netherlands).
- Herbicide treatments were affected by weather conditions, Steamwand is unaffected by the weather.
- Herbicide applications at the Botanic Gardens were limited to early mornings prior to the gardens being open to the general public. All herbicide spraying throughout the trials was conducted early in the morning when conditions were still. The Steamwand could be used all day with no exclusion of the public from treated areas.
- Steamwand generated a very positive response from the general public. Steamwand is ideal for use in high profile areas where public perception relating to chemical application is of high importance.

Mount Annan Botanic Gardens Comparing Steamwand, Hand Weeding & Glyphosate as a Method to Control Olive Seedlings & Regrowth

Steamwand prior to treatment

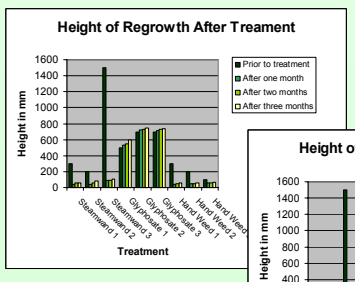
Glyphosate prior to treatment

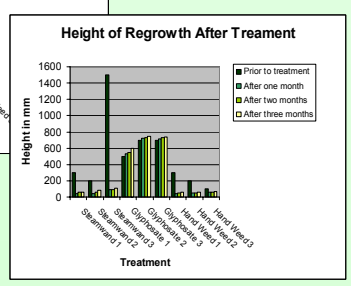
Hand weed prior to treatment

Steamwand three months after

Glyphosate three months after

Hand weed three months after





Plants Un-affect by Glyphosate

When treating vegetation such as Olives, Wandering Jew & Rhodes Grass glyphosate had little or no effect. Steamwand & hand weeding were both effective methods of control but the Steamwand was the most cost effective method, often up to 50% cheaper than hand weeding.

Steam*wand* technology has been specifically designed to:

- Break the chemical cycle of weed control
- Reduce your expenditure on herbicides
- Eliminate the need to exclude people from treated areas
- Broaden the operating windows for application
- Reduce Occupational Health & Safety Reporting
- Reduce Public Notification

The Future

A broad scale tractor application is being trialled greatly improving application Steamwand rates, treating 1250m^2 per hour at a cost of $0.06 per m^2 only 10% to 30% more expensive to apply than Herbicides.

This application is being further developed over the next 12 months and aims to deliver application rates of 4km per hour treating approximately 2400m^2.

Broad Scale Applications