



# FACTSHEET

## Foamstream vs. Steam Comparison of alternative herbicide-free methods.

*"Hot water insulated by a biodegradable foam (Foamstream) has been considered as the most efficient thermal weed control option as compared with hot air, open flame, or steam."*

**Determining treatment frequency for controlling weeds on traffic islands using chemical and non-chemical weed control - Rask et al., 2013**

### THE BENEFITS OF FOAMSTREAM OVER STEAM SYSTEMS:

- + Most cost-effective solution on the herbicide-free market, due to the following reasons:
  - Requires over 75% less treatment cycles than any steam system.
  - Suitable for use on all surfaces (hard, soft and artificial) unlike steam systems.
  - No addition of strong decalcifying chemicals unlike steam systems.
  - + Most effective solution on the market to treat weeds, moss and algae.
  - + None of the health risks of working with steam systems
- + Suitable for use in all weather – meaning year-round use and no downtime due to bad weather.

### WHAT OUR CUSTOMERS SAY:

*"Our company has tried various alternative weed control solutions since 2010 and Foamstream is without doubt the most effective. Whereas hot water solutions only killed 50-60% of weeds on site, Foamstream instantly killed over 95% of weeds on first application, with just 2-3 applications (depending on the state of the soil) needed each year from then on. Foamstream is now the only weed control product for us."*

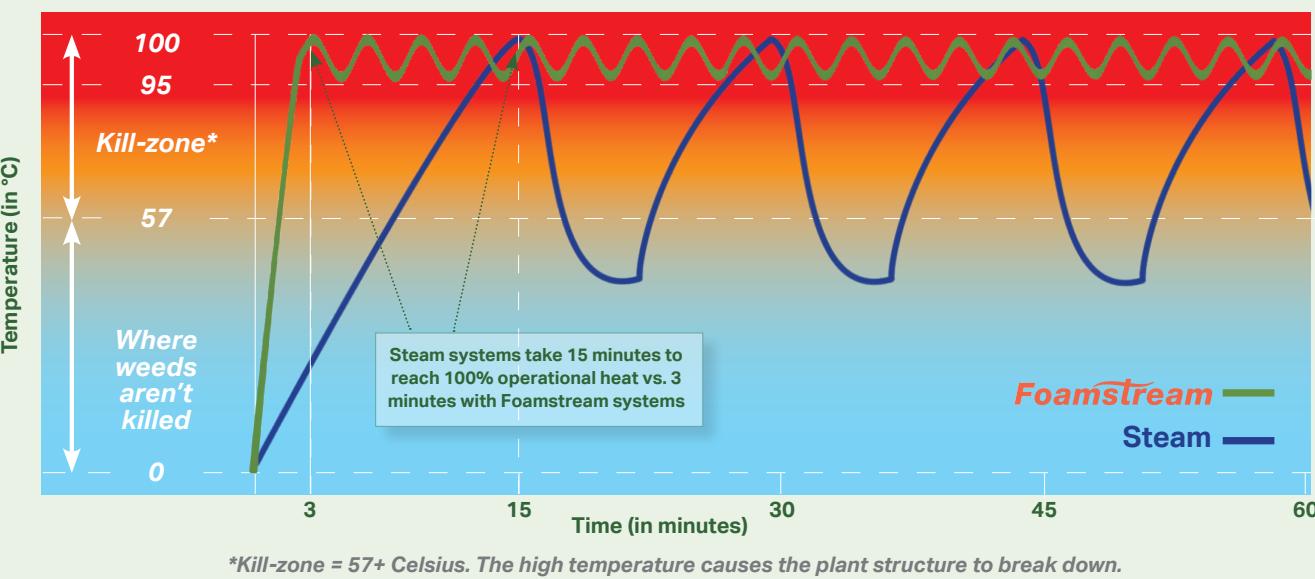
**Mr. Lemire, MD, Lemire Greenspace, France.**

### WHY IS FOAMSTREAM SO MUCH MORE EFFECTIVE THAN STEAM ALONE?

The zone above 57°C is known as the kill-zone. The heat in hot water must stay within this temperature zone in order to damage the plant structure and allow effective and efficient thermal heat transfer from the leaf to the root. Research shows that stable delivery of heat at 80°C and above for the first five seconds is crucial to ensuring the most effective plant kill. Outside of the kill-zone (below 57°C) there is little to no effect on killing or substantially damaging the plant.

Unlike most steam systems, Foamstream systems are the only systems on the market with an electronically-automated dual phase burner, which guarantees stable temperature and pressure. Stabilising temperature and pressure means that we can guarantee the system stays consistently in the kill-zone unlike steam systems that fluctuate in and out of the kill-zone.

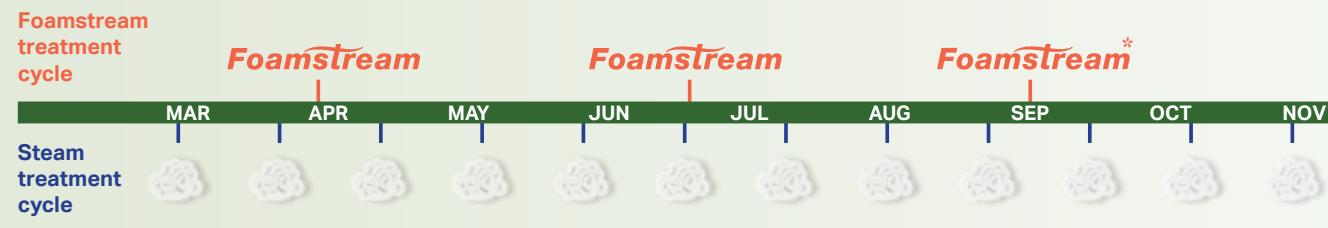
## Graph showing the effect on temperature stability when comparing Foamstream dual-phase boilers to steam single-phase boiler systems.



"Weeds treated with Foamstream require just two to three treatments per season or as little as one if you're treating moss and algae. Steam systems would require ten to twelve treatments per season. Fewer treatment cycles mean lower labour costs and greater cost savings including less use of water and diesel."

Dr Mike May

## Treatment cycle rate for Foamstream vs steam systems



\*Third application may not be required

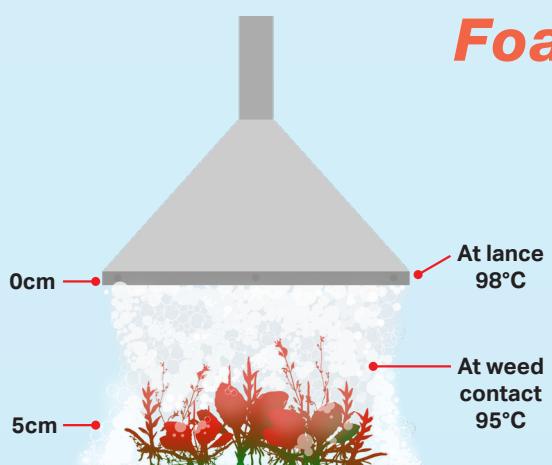
## HOW CAN FOAMSTREAM CONTAIN MORE ACTIVE INGREDIENTS BUT BE MORE COST-EFFECTIVE TO USE THAN A STEAM SYSTEM?

"The foam ensures that the heat is retained in the hot water for longer. This allows the most efficient transfer of heat energy from water to plant by preventing heat loss to the atmosphere. The result is the most effective thermal transfer from the leaf to the root ensuring the plant is killed or severely damaged. The Foamstream process sterilises seeds and spores therefore requires fewer annual treatments due to minimising new growth. Overall this means that using

Foamstream unequivocally represents the lowest total cost of ownership for users."

Dr Mike May

## Foamstream

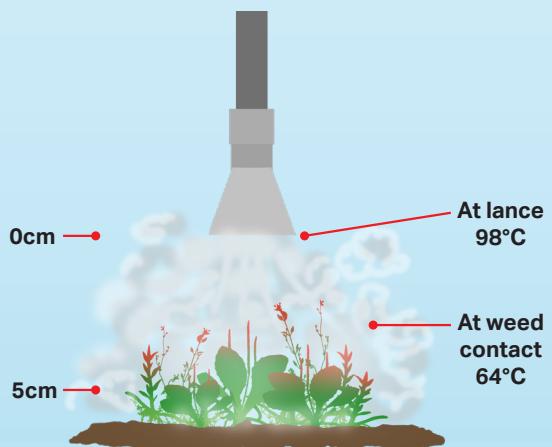


⌚ Kills the weeds

⌚ Sterilises seeds and spores

⌚ Kills or sufficiently damages the root

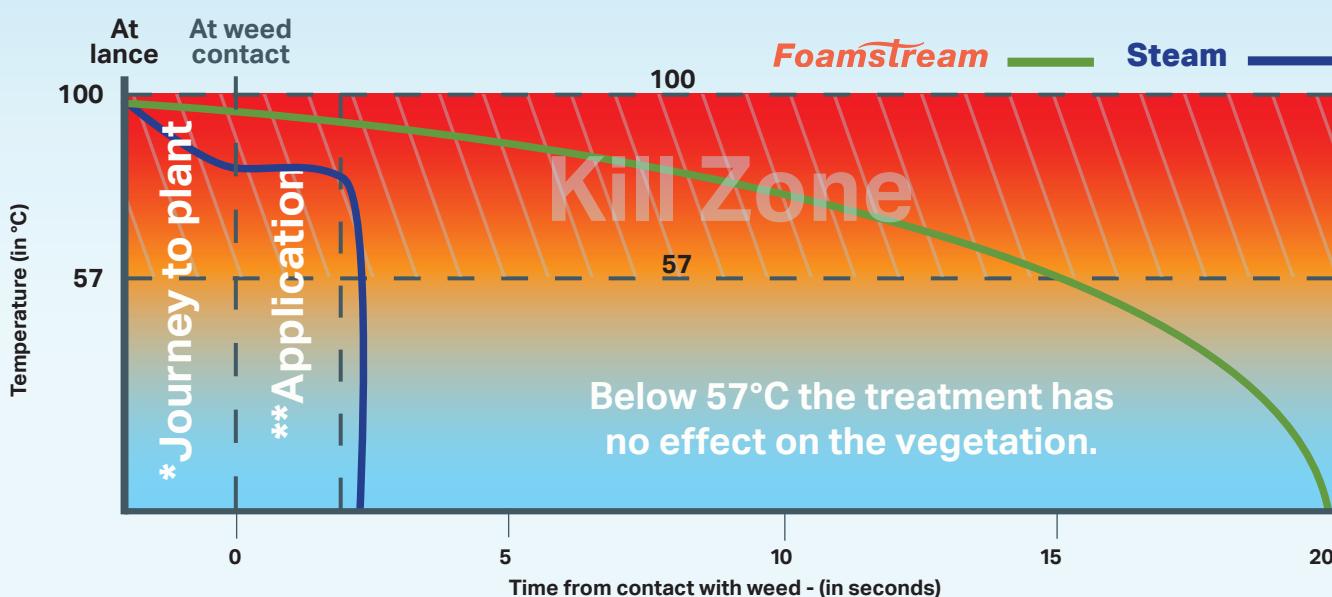
## Steam



⌚ Kills the leaves

⌚ Some effect on seeds

⌚ Very weak effect on root structure



\*Time taken for the steam/Foamstream to travel from lance to weed.

\*\*Time taken to cover the weed with the steam/Foamstream

## WHY FOAMSTREAM OVERTIME WILL COST YOU LESS THAN A STEAM SYSTEM DESPITE HAVING A HIGHER CAPITAL COST AND ONGOING CONSUMABLE COST.

**NB:** this graph uses USD (\$) as the currency

Parameters	Unit (USD)	Steam	Foamstream
Hourly labour rate	\$	25	25
Number of hours worked in a day	Hours	5	5
Daily labour cost	\$	125	125
Consumable cost (Foamstream, diesel, petrol and descaling agent)*	\$	52.5	174.5
OPEX per day (5 hours of actual work)	\$	177.5	299.5
100% treatment area in an hour	m <sup>2</sup> /hour	750	5250
Treatment area covered in 5 hours	m <sup>2</sup>	3750	26250
Cost per m <sup>2</sup>	\$	0.0473	0.0114
Comparative cost of single treatment area of 929 m <sup>2</sup>	\$	473	114
Treatment cycles per year	Treatments	10	3
Comparative cost of annual treatment of area of 929 m <sup>2</sup>	\$	4,733.33	342.29

### \*Assumptions: (L = litre)

**Steam system consumes:** 9 L diesel, 0.3 L of descaling agent, 1 L of petrol per hour: \$7.20 + \$2.50 + \$0.80 = \$10.50

**Foamstream consumes:** 8 L of diesel and 3 L of foam = \$6.40 + \$28.50 = \$34.90

**Price of petrol:** \$0.75 per L (0.21 gal)    **Price of diesel:** \$0.80 per L (0.21 gal)    **Price of Foamstream:** \$28.50 per hour

## ENVIRONMENTAL CREDENTIALS OF FOAMSTREAM

- + Made from 100% biodegradable and environmentally friendly neutral plant oils and sugars.
- + Approved for organic use by multiple accreditation bodies across Europe and North America.
  - + Safe for use around people, animals and delicate ecosystems including waterways.
  - + Uses less water and diesel to achieve the same results as a steam system.

## WHAT DO OPERATORS AND THE PUBLIC THINK ABOUT THE FOAM?

*"There are so many benefits to choose from but the single best thing about Foamstream has to be the cleanliness and the finish once the Foamstream has been applied. We're excited about Foamstream's possibilities as a public engagement tool as well as the positive feedback from potential clients and increased chances of getting onto new approved supplier lists."*

**Terry Burns, Senior Contract Manager, idVerde, UK.**

*"One of our highlights was the interest of passers-by and interaction with the public when we were out and about using the product".*

**Neil Reeves, Countryside Manager, SWLT, UK.**

