

Compost Trial

Trial Description: An 8-day trial was conducted to evaluate the effectiveness of oxygenated nanobubble water (30 ppm dissolved oxygen) on composting performance. Three identical 1 m³ bins were filled with the same organic waste and turned daily. Each bin received 5 litres of spray water per day:

Sample 1 (Control)

Normal dam water – Dissolved oxygen = 7.8 ppm
Bacteria added as per SDS

Sample 2

Nanobubble oxygenated water– Dissolved oxygen =30 ppm
Bacteria added as per SDS

Sample 3

Nanobubble oxygenated water- Dissolved oxygen=30 ppm
No bacteria added

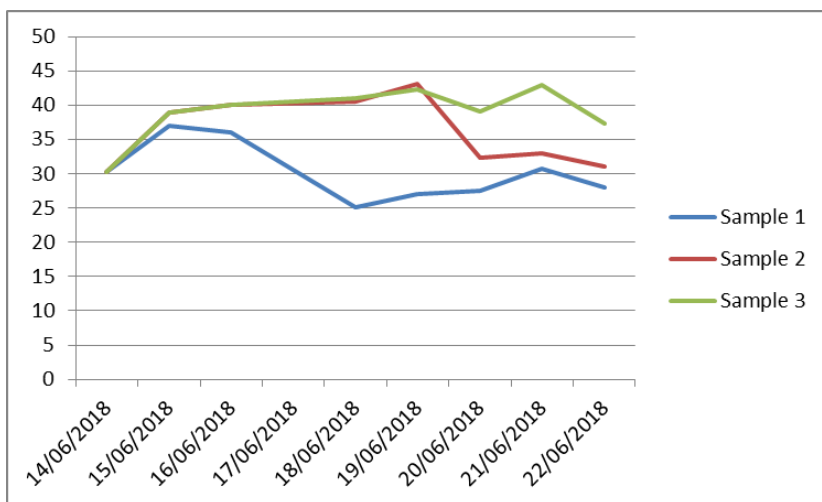


Results – Temperature & Odour

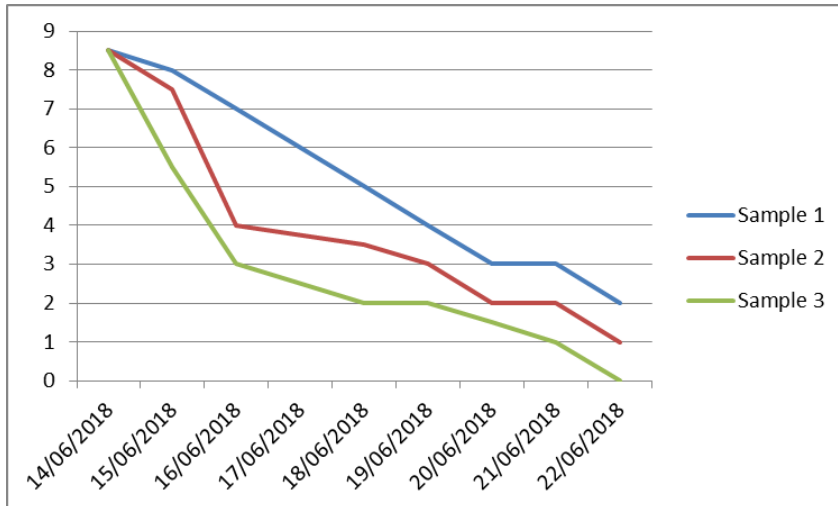
Date	Sample 1 Temp (°C)	Sample 1 Odour	Sample 2 Temp (°C)	Sample 2 Odour	Sample 3 Temp (°C)	Sample 3 Odour
14/06/2018	30.2	8.5	30.2	8.5	30.2	8.5
15/06/2018	37	8	39	7.5	39	5.5
16/06/2018	36	7	40	4	40	3
18/06/2018	25.1	5	40.6	3.5	41	2
19/06/2018	27	4	43.1	3	42.3	2
20/06/2018	27.5	3	32.3	2	39.1	1.5
21/06/2018	30.8	3	33	2	43	1
22/06/2018	28	2	31	1	37.4	0

Odour scale: 0 = no odour (best), 10 = worst (staff olfactory assessment)

Temperature Graph



Odour Graph



Key Analysis:

- Sample 3 (nanobubble oxygenated water only) achieved **zero odour** by day 8 –a **100% reduction**.
- Average odour across the trial: Sample 1 = 5.1, Sample 2 = 3.9, Sample 3 = 2.9 (**42% average reduction compared to control group**)
- Samples 2 & 3 maintained higher temperatures longer, indicating accelerated microbial activity
- Sample 3 completed the active composting phase approximately **33.5% faster** than the control (Sample 1), even without added bacteria

Odour Graph:

The Odour Graph clearly shows Sample 3 dropping the fastest from 8.5 to 0, with Sample 2 performing closely behind, while Sample 1 (control) reduced odour the slowest. The site previously sprayed expensive perfume around the entire 50-acre perimeter daily. Oxygenated nanobubble water offers a far cheaper and more effective alternative.



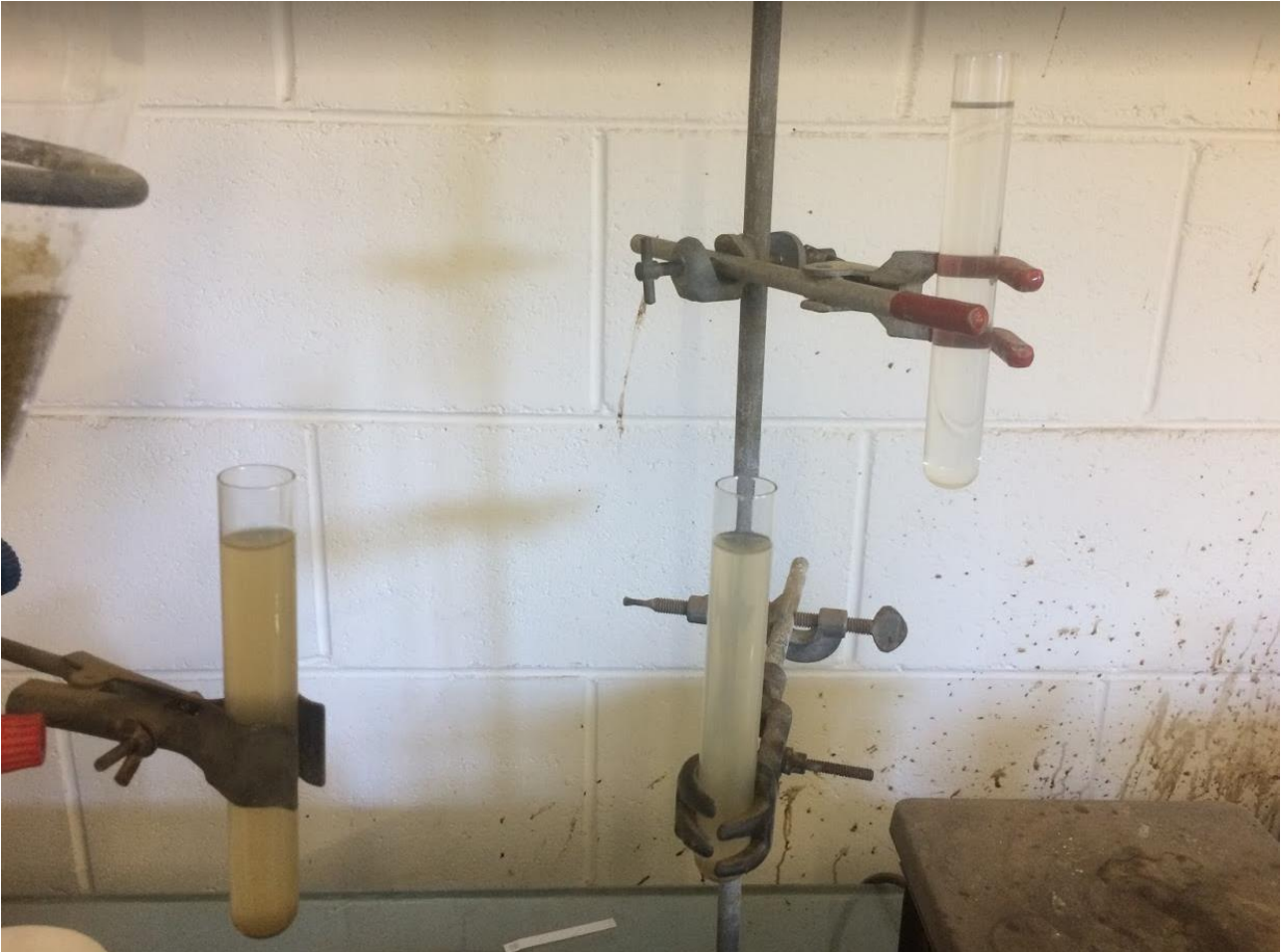
Full-Scale Windrows

Following the successful bin trial, the same oxygenated nanobubble water was applied to large-scale windrows. The results were consistent with the bin trial, showing rapid odour elimination and visibly faster composting. The windrows reached stable, mature compost conditions significantly quicker than untreated piles.



Water Quality Improvement

The client's dam water (murky brown) was treated with nanobubble oxygen + ozone for 60 minutes in a 50 L tank. The treated water became clear, demonstrating the technology's ability to purify process water, reduce organic load, and maintain high oxygen levels – all highly beneficial for composting microbes.



Conclusion

Our technology has proven that oxygenated nanobubble water at 30 ppm dissolved oxygen delivers outstanding results in composting:

- Increases composting speed by a minimum of **33.5%**
- Reduces odour by an average of **42%**
- Eliminates the need for expensive bacterial additives
- Provides a far more cost-effective alternative to daily perfume spraying

The ability of nanobubbles to maintain high dissolved oxygen levels in water for extended periods is the key to these significant improvements.