

Identification of the main odour sources from the wastewater treatment plant of a food industry

Problem

A wastewater treatment plant serving a food industry releases nuisance odours, causing reputational damage and disputes with the surrounding community. However, the specific sources of these odours have not been identified.

Objective

To identify, within the treatment plant, the processes that generate the highest olfactory impact and that are most strongly perceived in the surrounding area.

Solution

We carried out an olfactometric investigation combining dynamic olfactometry with a sensory analyser coupled to a weather station and an odour dispersion model.

The integrated solution includes:

- Assessment of olfactory impacts through dynamic olfactometry of each individual source;
- Characterisation of the olfactory fingerprint of each source;
- Identification of the sources most strongly perceived outside the plant.

Results

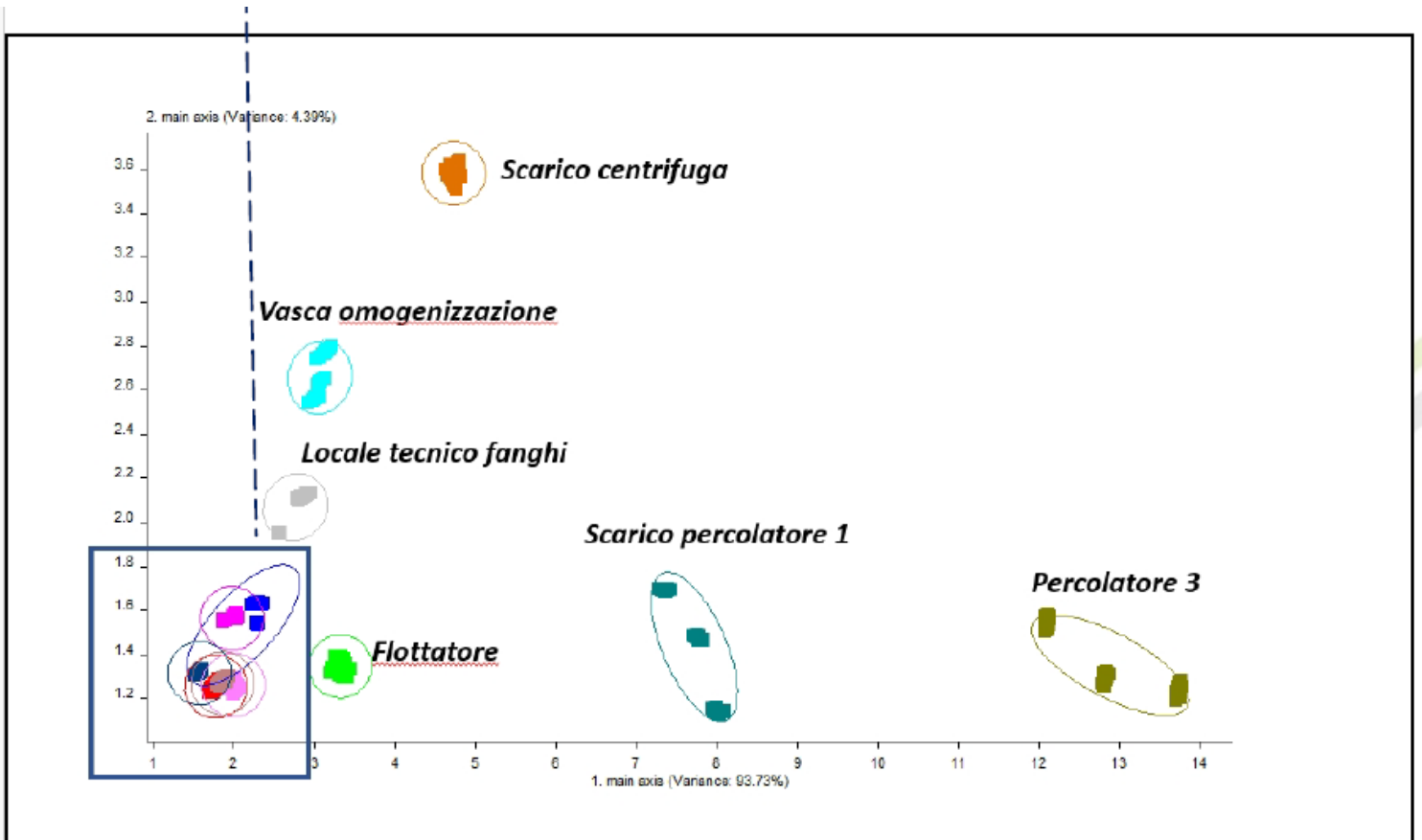
The sources with the greatest external impact were identified, allowing us to design a targeted sequence of interventions aimed at reducing the odour load, starting from the sources most strongly perceived outside the plant.

Value for the client

Confidence that interventions will address the points with the highest odour impact;
Ability to stagger interventions over time, starting with the most urgent ones;
Assurance of achieving the intended result in reducing odour impact;
Optimisation of intervention timelines and related costs;
Development of a highly productive and collaborative relationship with regulatory authorities.

Examples of charts produced

Chart identifying the sources with the most significant olfactory fingerprints.



Example of daily charts showing the trend of signals recorded by the sensory analyser

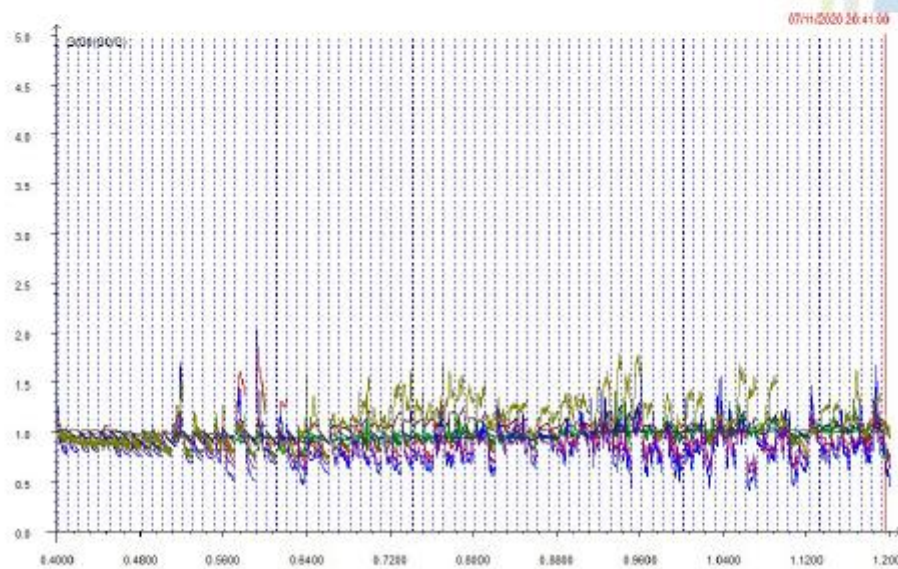
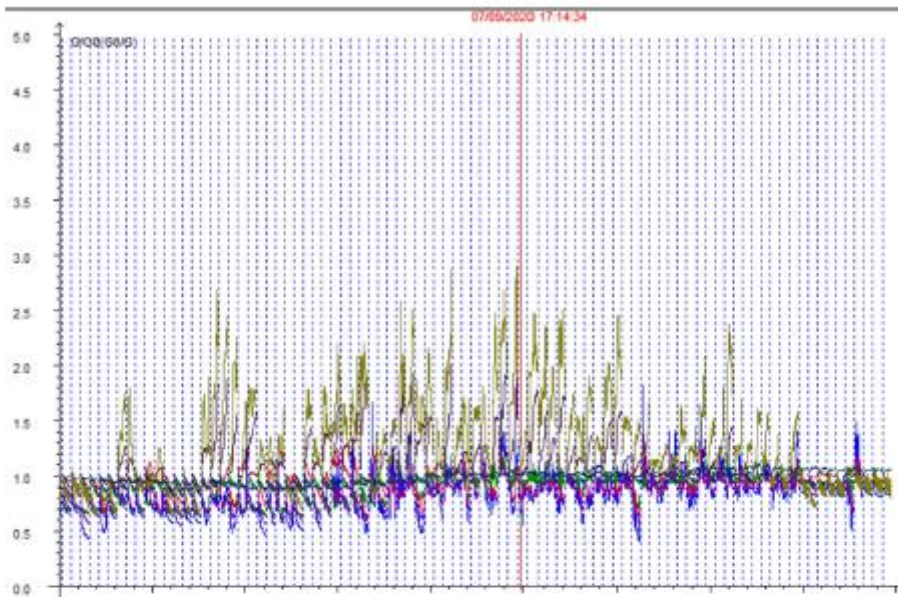


Table showing the average frequency of the different olfactory fingerprints detected during the monitoring week.

Sorgente	Frequenza media rilevata nella settimana
Percolatore	52,4 %
Flottatore	16,62 %
Vassche di omogeneizzazione	14,12 %
Cassone fanghi	6,12 %
Altri	9,87

