

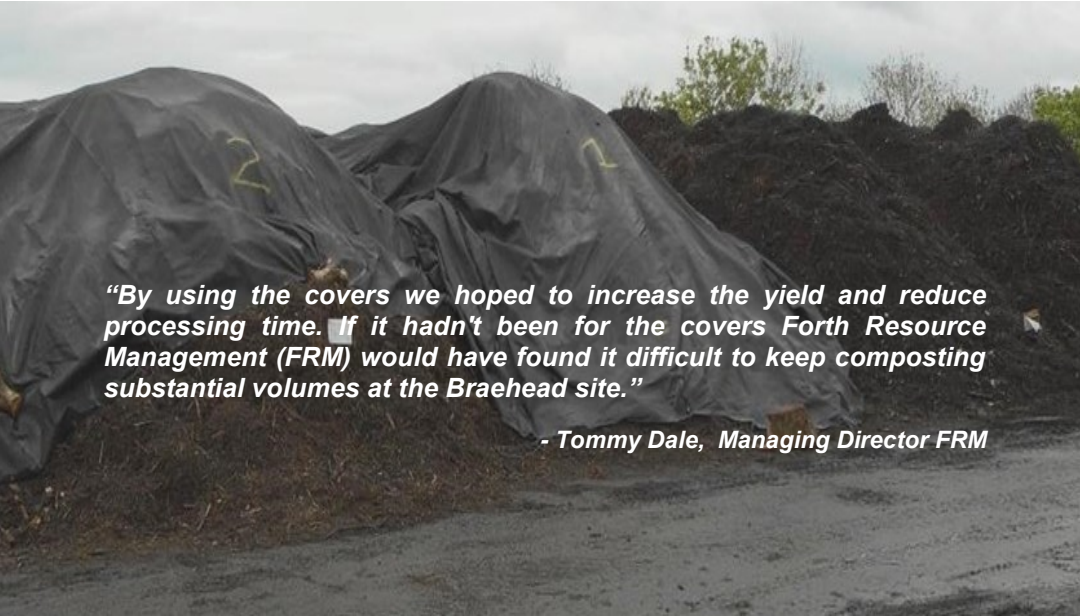
Evaluation of the Effectiveness of New Lightweight, Air and Vapour Permeable Covers on an Open Windrow Composting Site — Windrow TX[®]



Project Partners:

Don & Low Ltd., James Hutton Institute, Forth Resource Management Ltd.





“By using the covers we hoped to increase the yield and reduce processing time. If it hadn't been for the covers Forth Resource Management (FRM) would have found it difficult to keep composting substantial volumes at the Braehead site.”

- Tommy Dale, Managing Director FRM

Identified Cover Requirements: Windrow TX[®] Results

Odour: As Braehead is close to residential areas, its operation is only acceptable to SEPA if windrows are covered. The covers significantly decreased the amount of odour released from the windrows. There were no substantiated complaints with SEPA during the trial.

Weight: The lightweight covers when dry can be moved by one person if required. Covers were able to be removed manually in 10 minutes and replaced in the same time, weather conditions permitting.

Durability: A special additive package protects the polypropylene cover from UV degradation as well as from the chemical reactions and heat generated during the composting process. This gives a lifetime of two years or more depending on site geographical location.

Breathability and Reduced Cycle time:

The cover is extremely breathable, shielding the windrow from the drying power of the wind and sun and preventing waterlogging from rain and snow. The thickness of the naturally formed insulating layer on the top of the windrow is reduced. This improves yield of compost. Braehead also hope to reduce cycle time by one week.



Waterproof: The enhanced repellence allows the cover to shed water and snow. This significantly increases the yield of finer grade compost during the screening process at the end of the cycle. A reduction in leachate can mean an improvement in compost quality.

Other Benefits Identified:

- **Temperatures:** These were consistently higher under the covers and the distribution throughout the windrow was more equal, with variations of between 1 to 4°C, compared to variations of between 4 and 23°C in the uncovered windrows.
- **Birds:** Braehead had a significant problem with gulls but the covers have greatly reduced their presence. There is a reduction in the number of flies as they can only gain access around the edges.
- **Reduction in dust:** The covers prevent the windrows from drying out and protect them from the wind and so reduce the amount of dust generated.



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Partners: Don & Low, James Hutton Institute, Forth Resource Management Ltd.

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Country: United Kingdom

City: Edinburgh

Products Used: Windrow TX[®]

Duration: March 2016—February 2017

Windrow TX[®]: Forth Resource Management

A recent study by the James Hutton Institute highlighted the need for lightweight, breathable compost covers on open windrow installations — particularly for odour control at sites close to urbanisation. The following requirements for covers were identified: **Odour control, light weight, durable, breathable and waterproof.**

As a result of this study, Don & Low Ltd. developed the next generation compost cover fabrics designed to maximise breathability and durability; whilst minimising the critical dimension of weight e.g. at 150 g/m² Windrow TX[®] is less than a third of the weight of conventional covers and if required can be moved by one person.

In partnership with the James Hutton Institute, a trial was carried out at the Forth Resource Management composting site (Braehead, Edinburgh), to quantify the effectiveness and additional benefits of using Windrow TX[®], the latest generation of breathable compost cover on open windrow installations.

