Sustainable Resource Recovery

Managing Organic Residues at Wildlife Park

Diverting, Collecting and Using Organics from David Fleay Wildlife Park

Case Study
David Fleay Wildlife Park

BiobiN® Technology Enables Sustainable Waste Management at Wildlife Park

David Fleay Wildlife Park

In the 1950's David Fleay, a zoologist, botanist and educator from Victoria established Fleay's Fauna Reserve at West Burleigh. To ensure the Fleay's sanctuary could survive intact, the land was sold to the Queensland Government for a nominal amount in the early 1980's. The sanctuary was redeveloped, and later re-named into David Fleay Wildlife Park in honour of its founder. Today, the Park is managed by the Queensland Parks and Wildlife Service and is used for community education, ecotourism, wildlife conservation, care for sick and injured wildlife, and research.

Reducing Waste

Although the David Fleay Wildlife Park is not a tourist attraction with high visitor numbers, it still generated considerable waste quantities. Paper and cardboard was recycled and tree trimmings and other woody vegetation residues were chipped and used as mulch in the Park. Despite these efforts, the Park still landfilled more than 25,000 kg of waste per year, 70% of which was organic and biodegradable. These components comprised mainly bedding material from animal enclosures and leftover animal feed, but also food scraps from the cafeteria.

As the owner of the Park, the Environmental Protection Agency (EPA) wanted to set a positive example in reducing the amount of waste going to landfill, while improving resource recovery. As 70% of waste was comprised of organic residues, this goal could be most effectively achieved by segregating these compounds, which would be subsequently composted and used beneficially for land management purposes.

Composting is the Solution

On-site composting and use of the generated compost inside the Park would have been the most environmentally friendly way of dealing with the organic residues

generated at the Park. However, lack of space, equipment and labour required for undertaking on-site composting prevented this approach from being realised.

Consequently, the segregated organic residues had to be taken to a commercial composting facility for processing.

Advanced Collection & On-site Storage

As no commercial composting facility was in close proximity to the Park, a system had to be found that allowed the clean, safe and unobtrusive collection and prolonged storage of organic residues. The BiobiN®, a large aerated container that initiates the composting process and effectively eliminates odour from putrescible waste seemed to be the ideal solution for the Park.

The EPA decided to use the BiobiN® on a trial basis in order to confirm its capabilities and determine its costs and benefits. Consequently, a nine cubic meter BiobiN® was installed at the Park, being comprised of the enclosed container and the aeration system (pump, condenser, bio-filter).

Trialling and Testing

An initial audit estimated that the Park disposed more than 25,000kg of waste to landfill every year. The waste contained around 70% organic residues, including left-over animal feed, animal bedding and droppings, fruit and veggie off-cuts, food scraps from the kiosk, and shredded paper and cardboard. Once the BiobiN® was in place, these materials were no longer taken to landfill but collected in the BiobiN® and then composted.

The nine cubic meter BiobiN® had to be emptied once every 50 to 60 days. The aeration system ensured that no odours were generated during the prolonged storage period. Therefore, staff at the Park maintained their enthusiasm for this system and continued to use it.

Benefits & Costs

The five-month trial demonstrated that use of the BiobiN® enabled the David Fleay Wildlife Park to reduce the volume of waste going to landfill by around 70% (or approximately 16,000kg per annum), realising savings of about $3,000 per annum.

However, capital and maintenance costs for the BiobiN®, as well as expenses for transporting and composting the organic materials resulted in additional costs (ca. $5,000) that exceeded savings and hence increased total annual waste management costs. Nevertheless, waste disposal costs can be reduced further through improved recycling activities (e.g. drink containers) and reduced waste collection frequency.

Using the BiobiN® at the David Fleay Wildlife Park reduced waste going to landfill by some 70%, while also significantly increasing the Park's recycling rate. These waste reduction measures fundamentally change the ratio of money that is spent on waste disposal versus money that is spent on recycling and beneficial resource use.

Ongoing Use of BiobiN®

Based on results of the five-month trial phase, and the support the organics recycling system received from staff at the David Fleay Wildlife Park, the EPA decided to use the BiobiN® at the Park on a permanent basis. In doing so, the EPA and the David Fleay Wildlife Park set a positive example for Queensland and Australia and demonstrated how easy it can be to recycle organics and significantly reduce the amount of waste going to landfill.

Other Uses for the BiobiN®

Since its invention, the BiobiN® has proven itself as an effective and economically viable option for the odour-free collection of commercial organic residues. Currently, some 160 BiobiN® units are used in commercial sectors such as the following:

- Shopping centres
- Greengrocers
- Food processing
- Fast food outlets & hospitality
- Holiday resorts
- Schools
- Island communities
- Chicken production & processing

Companies that are using the BiobiN® include for example McDonalds (Adelaide), Coles (Melbourne), Colonades Shopping Centre (Adelaide), Arrnotts Biscuits (Sydney), and Southern Burrumundi (McLaren Vale).

Further information

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