Composter eliminates malodours in Port Colborne

A compost management facility at Plant's Choice™ in Port Colborne, Ontario, has reduced odours and increased profitability.

The Plant's Choice facility processes approximately 35,000 tonnes of organic waste annually. Feedstocks include: corn fibre, zebra mussels, chicken sludge from a Dissolved Air Flotation system (DAF), fish processing waste, leaf and yard waste, paper mill waste, fruit and vegetable processing waste, grocery and restaurant waste. This operation uses a combination of open windrow and passive aerated windrow composting technologies in their process.

The company's careful selection of feedstock, coupled with its composting expertise, allows it to process soil amendment and growth medium products that are consistently high in quality and organic content.

However, the Port Colborne operation has suffered some problems with nuisance odours. Of particular concern was the fifty tonnes of DAF sludge (high nitrogen and fat content), received weekly from a local chicken processing facility. This feed stock was extremely volatile and odorous, and all previous attempts to control its odour had met with only limited success

Nuisance odour concerns due to encroaching residential and commercial developments around Plant's Choice facility prompted a successful trial of a new liquid micronutrient supplement application developed by HydraLogic Systems Inc., located in Barrie, Ontario.

The new process, sold under the trade name BioStreme™ "Micro-nutrient Supplement", involves optimizing the environmental conditions for biological processes within the decomposing organic matter. The supplement was specifically developed to enhance growth and reproduction of existing facultative bacteria which synthesize organic material without odorous by-products.

Prior to the trial, Plant's Choice feedstocks were blended with wood chips and other materials on-site to create the nitrogen to carbon ratio necessary to accommodate commercial feedstocks for a complete composting process. Compost materials were then formed in 60 metre long windrows which were aerated or turned every couple of days over a 13 week period.

Above: Using an agricultural spray system, windrows are topically sprayed to maintain odour control.

Moisture content, pH and internal windrow temperatures were monitored during the active composting stage to ensure pathogen sterilization, and a quality end product that satisfied all government regulations.

Under the new HydraLogic program, incoming DAF sludge is now topically sprayed with BioStreme upon arrival to site. A windrow is then built using a mixture of sludge and wood chips. A diluted solution is topically applied to the windrows to achieve a 10 ml of concentrated product per square metre, and turned as in the original composting process.

Spraying and turning is repeated a total of three times to blend the windrow uniformly with Bio-Streme. The windrow is then left undisturbed for three to four weeks.

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