

## Type of waste:

Poultry processing waste

## Project:

Cootehill Farms is one of Europe's largest chicken processing companies. The facility has a waste liquid processing plant with a DAF system, lagoons and biological treatment. The solids collected are separated into CAT 1, 2 and 3 and are hauled away at a substantial cost. The solid waste includes intestines, heads, feet, beaks, feathers and blood.

## Objectives:

The main focus of the trial was to improve the issues Cootehill was experiencing with their waste management which meant reducing the BOD and TSS levels, the use of oxygenation agents and the volume solids leaving site by truck. These aims are the environmental and Economic targets that Cootehill wanted to achieve.

## Client/ Location:

Co-Operative Poultry Products, Cootehill Farms, Coothill, Co Caven, Ireland.



## Implementation:

The Advetec XO digester was installed in a work shed on the grounds of the factory, and containers of CAT 1-3 waste was forklifted to the shed which was then loaded 4 times daily. The Advetec 460 Bio stimulant was dispensed at a rate of 900ml per day over 684 individual doses. The waste being deposited outside of the XO produced a noxious odour which was overcome by installing a vent to redirect the fumes into the factories collection system to then be treated.

## Results:

This trial resulted in the reduction of BOD and TSS, while eliminating the need for oxygenating chemicals. This would yield an annual saving of approximately €28,500. The odours previously causing concern at the facility disappeared from the lagoons and the scum/foaming ceased; no odour was produced from the XO machine. An excessive level of water was produced when the intestines dissolved in the XO digester. Advetec have a macerator/ dewatering system that can reduce this water content, therefore it was not an issue. If required for use however a suitable drain or waste water treatment is required. Similarly modifications were made when blood was added to the liquor as the bacteriological process slowed by approximately 75%. To improve this Advetec added a balancing product which binds to the haemoglobin in the blood, preventing the bacteria from being starved of Oxygen. Additionally Advetec have retrofitted an Air Knife system to the XO digester which increases the O<sub>2</sub> in the mixture substantially, aiding the digestion of the waste. During the trial, the XO digester processed 4.5 tonnes of offal waste in 21 days. The XO digester was trialled for 6 weeks altogether (commissioning + operational stage), during this time there was no solid residual waste; only liquid was actively removed from the digester during operation. 225 kilograms of waste was dug out of the XO from the discharge chamber at the end of the demonstration. This equates to a reduction percentage of 95%.



## Summary:

The trial showed that offal waste could be efficiently digested and gave waste reductions of over 90% in 72 hours. There was no odour or contamination concerns from the XO digester and the modifications made to the unit were specifically tailored to provide optimal reduction for the specific waste type. The analysis of the trial data showed that due to the consistency of the waste, Cootehill would require an XO digester that was at least twice the size of the proposed unit to meet all of their waste disposal targets.