

Advetec Limited, Case Study Report



Advetec BTR Trial

The **co-operative**

Cootehill Farms is one of the Europe's Largest Chicken processing companies.

Cootehill Farms has 11 locations in Eire, and is the primary provider of processed chicken for The co-operative

Background: The Facility has a waste liquid processing plant with DAF system, lagoons and biological treatment. The Solids are collected and separated into CAT 1, 2 and 3 and these are hauled away at a substantial cost for disposal. The also have significant volumes of blood which is hauled from site and costly to process. The cost for these treatments are climbing and set to rise even further due to new land fill taxes 2010. Cootehill Farms asked Advetec to conduct a trail of there new bio-Thermic Reactor and provide environmentally a 100% on site treatment of there current waste streams.

Objectives: The aim of the trial was to improve the following areas related to onsite waste:

- Digest Organic Solids on site to reduce trucked solids loads leaving the factory.
- Process offal and blood waste through system rather than transport from site
- From trail determine equipment configuration required to provide 100% treatment on site

Implementation: A site wide survey was conducted prior to the Advetec units being installed.

The BTR unit was installed in an area outside the work shed on the grounds of the factory and suitable containers full of the offal with CAT1 –Cat 3 waste was forklift trucked to this area. This was then loaded into the unit several times daily.

Analysis: During the evaluation period the temperature and organic composition where monitored by Advetec and Cootehill staff, the volume placed I the reactor where calculated and the summary figures collated.

The Images on the next page could be quite disturbing please jump to page three for summary

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Results

The installation of the Advetec BTR Demonstrator unit showed that the offal being produced from the Cootehill Farms processing centre could be digested by the machine. This included intestines. Heads, feet, beaks, feathers, blood from the production line

Several process engineering steps had to be made during the trial, No 1: The waste being deposited outside the BTR began to produce a noxious odour. This was rectified by providing a vent so that the fumes were directed back into the factories collection system and treated before going to atmosphere. It was noticeable that no odour came from the BTR Unit. No 2: The intestines although dry in the collection bin dissolved once in the BTR unit and produced an excessive level of water. Advetec have now built a macerator/dewatering system that fits at the front end of the BTR to reduce water content, In applications where this is required a suitable drain to sewer or waste water treatment is required. No 3: When blood was added to the liquor the bacteriological process slowed by 75%. To enhance this Advetec has added a balancing product that works by binding the haemoglobin in the blood which results in the Bacteria not being starved of O₂. Advetec has also retro fitted an air knife system™ which increases O₂ in the mixture substantially.

During the Six week trial the unit processed 2000 litres of waste per week, Over the 6 weeks there was no residual waste ?? 100% digestion occurred. The analysis of the trial data showed that due to the consistency of the waste Cootehill would require a unit 4 times the size of the proposed unit to achieve its goal. By introducing further technology to aid in processing the chicken inners and the blood Advetec believes it can achieve the required levels within the parameters of the initial proposal

Summary

The installation of the Advetec BTR Demonstrator unit showed that the waste being produced from the Cootehill Farms Processing facility could be digested by the machine. A further trial will be taking place in November 2010 with the new macerator/ dewater system and the Air Knife technology so that we can achieve 100 % waste handling efficiency on site.