



Operational Report- Ashleigh Farms Ltd
Ballinameela, Cappagh, Dungarvan, Waterford
CHC 00179 Rev.01
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Project Quality Control Data Sheet

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1.0 Overview

The objective of the activities carried out at this facility are: the rearing of pigs, specifically bred for efficient pig meat production, from birth until they are removed off site to the processing facility. Critical to successful operation is efficiency and good management of the overall process with particular emphasis on:

- Efficient food conversion ratio
- Fast growth rate to slaughter weight
- Operation according to current Environmental Legislation

To maximise output the following are essential elements for the success of the enterprise;

- Genetic potential of the stock
- Minimal disease status
- Good quality buildings and environments.
- High quality feeds
- Good management and stockmanship

2.0 Size of Development

The activity carried out on the site is the rearing of pigs in a licensed facility. The facility is in a rural area comprising, ancillary structures and equipment necessary for the accommodation and management of the animals and the administration of the enterprise. The structures and equipment on the site were designed and installed specifically for rearing pigs for sale off site. This pig farm is designed to accommodate up to 9900 production pigs.

3.0 Operation

The development will consist of the following buildings, detailed as follows:

- 3 No Dry Sow House;
- 3 No. Farrowing House;
- 1 No Weaner House;
- 4 No Fattening House
- 1No. Gilt Rooms and Boar pens House

The producer operates a 900 sow integrated piggery facility. The rearing process is as follows:

- a) Sows who have finished suckling their previous litter will be directed to the service area where artificial insemination will be undertaken. A number of boars will be housed in the service area for simulation purposes as this has been shown to increase conception success;
- b) Pregnant sows will be forwarded to the dry sow house where they will be housed for the duration of the 114 day gestation period;
- c) Shortly before parturition, each sow will be moved to a pen in one of the farrowing houses. Following the birth of her litter, the sow will remain with the piglets for 4 weeks;
- d) At four weeks, each litter will be transferred to the weaner house, while the sow will return to the service area;
- e) Weaned pigs will be moved to one of the two fattening houses at 10 weeks of age. At this stage, each weaned pig will typically weight 35-40kg;

- f) Pigs will be fattened in the fattening houses for 12 weeks, during which time their weight will rise to 100-110kg. At the end of this period, the fattened pigs, now 26 weeks old, will be loaded onto a truck for export;
- g) From time to time female pigs (maiden gilts) will be retained onsite to replace sows lost through age. Prior to entry to the service area, each gilt will spend 1-2 weeks in a gilt area, located adjacent to the service area, to allow her to become accustomed to the automated sow feeding system.

The producer's objective is to achieve a higher number of piglets produced annually by each sow through the use of a Danish breed of pig, and by achieving high piglet survival rates through loose farrowing.

Depending on the age, pigs will be fed one of several wet feed mixes developed by the applicant in consultation with a Danish firm specialising in pig feed supplements and minerals. These are produced at the producers own mill, located on their Kinsalebeg pig unit (P0651-01)/mill facility. Feed will be delivered via the producers own vehicle, thus timing of deliveries will be managed to minimise any potential impact. Pigs in each of the units will be feed with an automated feeding system.

Water will be supplied from three onsite groundwater well. Abstracted water will be pumped to one onsite storage tank. Storage volume of the tank is 8,000L, equivalent to 3 days onsite water usage.

There are three sources of solid waste onsite, summarised as follows:

- a) Staff facilities –office waste;
- b) Process activities – packaging waste and bottles;
- c) Pig mortality – pig carcasses

Waste streams A and B will be managed through a local refuse collection service and/or transported to a civic amenity site. The producer is currently exploring options to manage carcasses disposal onsite, with the primary objective being disease management through the removal of vehicles that have been to other farm enterprises collecting animal carcasses.

Wastewater will arise from staff facilities and facility washing. Waste water from staff facilities will discharge to the septic tank onsite. Waste water from facility washing will discharge to the manure collection system.

It is estimated based on the European Communities (Good Practice for Protection of Water) Regulations 2010 (SI 610/2010) that the quantity of manure arising will be 19,000m³/year, with an expected dry matter content of 5-10%. Manure will fall through the slated floors to tank under each house. The tanks discharge to an over ground tank located at the southern side of the complex.

Underneath the building footprint and at the above ground holding tank, a leak detection system, designed in accordance with Department of Agriculture, Food and Marine guidelines, will alert the producer to any breaches in the integrity of the manure collection system.

Manure stored in the above ground tank will be removed at intervals by truck/tractor drawn tanker. Land spreading on farms will be undertaken in accordance with SI 610/2010 which specifies spreading periods, spreading rates and buffer zone distances.

There will be no yard runoff, as all access roads will be surfaced with stone chippings which will allow for downward percolation of rainwater. Treated waste water from the onsite septic tanks will discharge to groundwater via a percolation area at the sites western boundary.

It is anticipated that most of the noise sources will not be audible beyond the site boundary. Noise levels arising from site operations will be significantly lower than typical guidance criteria based on the high-tech nature of the newly developed unit.

Odour emissions, mainly associated with the release of ammonia from stored manure will be managed through onsite operational procedures as well as design features of the unit, including management of pig diet protein levels, addition of an odour management to feeds etc.

In 2012 Ashleigh Farms participated in European Commission's Seventh Framework Programme (FP7) under the Research for the Benefit of SME programme with the Research Institute, School of the Built Environment, Liverpool John Moores University. The 2-year project was aimed at helping European SMEs in the livestock industry operate more effectively by reducing costs and enabling them to responsibly meet environmental standards using unique technologies developed at the aforementioned research institute. The project successfully delivered a prototype Anaerobic Digestion (AD) and Microwave system with a novel process to generate biogas and digestate from pig slurry in a responsible and economically viable manner.

Following the FP7 project, Ashleigh Farms then lead a successful application to secure European Horizon 2020 Fast Track to Innovation funding to upscale the bio-digestion design to an industrial pilot scale.

The project name is Biowave and is an integrated novel microwave pre-treatment system for efficient production of biogas from anaerobic digestion of pig manure to create a sustainable waste-management system

The Horizon 2020 project commenced in April 2016. The Anaerobic Digestion plant has been integrated into its pig production unit in Ballynameelagh, Cappagh, Co. Waterford. Ashleigh Farms are working with a consortium of partners from the UK, France and Ireland to manage specification of system requirements, field trials of the system, commissioning, commercialization, planning and project coordination.

The objectives of the operation of the AD unit include:

- Environmental benefits: significant reduction in greenhouse gas emissions and odour from pig slurry;
- Allowing anaerobic digestion of pig slurry without additional carbon source such as food waste or energy crops, thus allowing for a simpler more cost-effective renewable energy solution for pig farmers;
- Reduction of the residence time of pig slurry in the bio-digester from an average of 21 days to an average of just 10 days;
- Improved efficiency - improve methane yield from the current 60% to 80% allowing on-site energy generation to offset existing energy costs.
- The leftover digestate from the anaerobic digestion process is stable and nutrient-rich and is ideal for fertiliser.

Production at the unit is continuous, however, due to the high degree of automation, working hours will generally be restricted to 0800-1700, Monday to Friday.

4.0 Disease Status

The buildings are designed so that pigs will move in one direction through the facility as they age, thus minimising the transfer of disease from fattened pigs back through the farrowing unit.

The fattening house incorporates isolation pens including separate ventilation and manure containment. This zone will be used to house animals showing potential disease symptoms, or animals requiring observation or veterinary inspection. The likelihood of enzootic diseases will be minimal as the facility will be new and stocked at the outset with certified disease-free stock. The likelihood of disease outbreak will also be low as the facility will be restocked from within.

Finally, the producer is currently exploring options to manage carcasses disposal onsite, with the primary objective being disease control through the removal of vehicles that have been to other farm enterprises collecting animal carcasses.

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