

Craignathro Eggs Ltd. - Easter Meathie Poultry Farm:- (PPC Application)

EM. 1. Non- Technical Summary

Craignathro Eggs Ltd. Presently has one free range egg unit with 32,000 bird placements. This is located approx. 2 Km to the north of the proposed site and operated independently of the proposed development. For that reason, the application will not include that existing facility.

The proposed site will operate on an 'aviary system' with 'wide belts' under nest boxes, feeders, watering points and perches to maximise the capture and management of manure.

The proposed houses (2) will accommodate 64,000 birds.

Pullets will be introduced at 16 weeks old and retained for approx. 55 to 60 weeks before the flock is 'depleted'.(this timeline may be increased) Once the houses are cleared of birds the houses are thoroughly cleaned physically, washed down and then disinfected before the introduction of the next flock.

The Houses are designed by Big Dutchman International, a reputable company in the provision of units for free range egg production.

Construction

The concrete floors will be protected from water ingress by the placement of an impermeable damp-course (DPM) and supported at the south side of the houses (in the free range area) by an interceptor drain, cutting off all drainage from higher ground and diverting it away from the buildings. This helps maintain a depressed local water table in the vicinity of the 2 houses at all times and especially winter.

All walls and roofs will be insulated to retain heat but also minimise condensation.

Previous PPC control experience exists at their existing unit although operational staff will be kept separate for biosecurity reasons.

The 2 houses will be served by manure belt that collects manure from under the perches, drinking and feeding locations and nest boxes which is the majority of the surface area within the houses. These will provide capture for the majority of manure / dropping within the buildings although a small area remains at the periphery of each house where manure becomes part of the floor 'litter'.

Sensors around each individual house record climatic conditions which are fed into the unit computer system and this determines operation of fans to create optimal conditions for the hens and keeps litter dry, but not dusty. Target level for manure dryness is approx. 60% dry matter, and for litter > 80%. Maintaining dry conditions is helped by the relatively dry

climate in this part of the country but enhanced by the provision of heat exchangers, ensuring in-coming air is relatively dry and has captured potential heat loss. Further, warmed incoming air is directed onto the manure belts to enhance speed of manure drying.

Eggs are conveyed to a central service area where they are packed and go off site for processing.

No food mixing occurs on site. Most feed is produced off site but on the main farmstead. The farm produces significant quantities of barley which forms the mainstay of the feed and along with essential additives, robust crumb feed is produced consistent with commercially produced feedstuffs for every stage of their cycle. Feed composition is adjusted throughout the flock occupancy to provide the perfect diet and also minimises waste and especially minimises Nitrogen and Phosphorus loss to the environment. In particular, minimum nitrogen loss means ammonia production is also reduced.

Mains water supplies the site and the pressure is reduced before serving nipple drinkers with drip cups which is recognised as good practice for avoiding water loss and potential wetting of litter. They will be regularly set at the right height for the birds to drink without spilling, and fitted with alarms to identify pressure drops through minor leakage.

All aspects of building design supported by management systems will minimise the impact on the *aerial, land and water environments*.

Manure

Manure is removed from the houses regularly, (2-3 x / week) and delivered by conveyor to a trailer parked just outside the sheds.

Both manure and litter will be dried through the use of heat exchangers.(and air jets) Manure is then taken off the permitted site and applied to own and other farmers' fields using good agricultural practice in delivery and storage. Subsequent field distribution timing and quantities will be consistent with their manure and fertiliser management plans which are also linked to protection of ground water in this NVZ area.

Birds

Bird mortalities are attended to immediately and carcasses collected during the day, placed in sealed bags and transferred to a freezer in the Central Services Area on the permitted site. Final collection and removal is by an appropriately licenced company (final disposal probably rendering.)

Site cleaning.

At the end of 'campaigns', the birds will be removed and the houses and then cleaned physically of manure/ litter before being washed, sterilised and recommissioned. As

demand for litter as a fertiliser / soil conditioner outstrips production no long term stockpiling takes place.

Washings are collected in a sealed tank and applied to fields off the permitted site as part of their nutrient budgeting plan. Manure and litter will be retained dry for removal off site and used as part of the farm nutrient budgeting plan. Excess to requirements is utilised on adjacent farms.

Rain water treatment

Roof water, drainage from the concrete pads around the site and drainage from under the scratch area will drain to a series of *swales* for treatment. Their design aims for organic matter to be absorbed and treated / digested on the grass whilst treated / purified water passes slowly through the base and banks. Only high rainfall events will incur an overflow to the local watercourse.(Spittal Burn) Monitoring of this system will be undertaken routinely and visual monitoring of the final discharge from the site will be undertaken in times of storm event.

To date, the land being considered for free range, extending to 40 Ha, has been used for the production of grass and cereal. Historically, all of these activities will have incurred routine application of inorganic fertilisers whereas future use as free-range will not require such application. In- situ fertilisation by ranging hens will be the only nutrient addition.

Beyond the scratch area, the free range land will be planted with trees / bushes for birds to spend the daylight hours in. These increase health and animal husbandry as well as reducing loss from predation. During months when trees are in leaf, transpiration will contribute to maintaining a dry habitat for the flock. When mature and the tree canopy is closed, the cover will also act to support other plantations aimed at absorbing particulates and trace ammonia emissions- mainly birds actively ranging.

Environmental Overview

The environmental overview is core to Craignathro Eggs Ltd. to seek to reduce their carbon footprint through conservation of energy, capturing energy and harnessing it and using natural and other resources wisely.

The change in land use is anticipated to reduce downward infiltration of N species and therefore contribute to long term betterment of the NVZ.

New FRE Farm

The FR egg farm commissioned in 2015 at the main farmstead incorporated all the latest developments (best practice) in minimising ammonia and dust production and release to

the atmosphere through the poultry diet, humidity control, water management, house insulation and careful control to maintain a dry atmosphere within the houses.

These design criteria were consistent with conditions that would have prevailed had that unit required regulation through SEPA.(Intensive Agriculture permitting)

As part of the overall application of nutrients, field deposition and aerial emissions, methods and quantities in the future will be less intensive than former land use practices which supports the area need for restoration of ground water conditions. (see above – NVZ status)

Proposed Craignathro Eggs Ltd. FRE Poultry Unit

Unlike the former land use of predominantly cereal crop production and rotation, the proposed FRE farm has the capacity to control most of the environment except the ranging of birds. All litter and manure will be maintained in a dry state so most of the nitrogen will be retained up until application to fields rather than be lost as ammonia. All material will be taken off the site and used mainly on farms remote from the farm.

Over the past two years the Centre for Ecology and Hydrology, in partnership with Forestry Research, (Forestry Commission) have worked on the production of guidelines for tree planting around farms to increase the amount of ammonia that is captured on the farmstead and reduce its release beyond the farm boundary into the general environment and particularly, looking at reducing the quantity of Nitrogen added to 'background'.

Adopting these guidelines will encourage the reduction of nitrogen from being added to background levels in the air and manage it within the site, but it also increases the production of local biomass (nitrogen conversion) and generates an environment which is positive for bird welfare. A planting plan is to be developed in the future.

Analysis of advantage / benefit of site tree planting

Site	Benefits to Farm business	Benefits to environment (general)	Dis-benefits
Tree planting Woods	Potential timber for fuel or other purposes (continuous cover)	(i)Ammonia absorption and conversion to biomass. (ii)Renewable energy source. (iii)River flow buffering capacity during storm events. (iv)Biodiversity increase	None
Shelter belts at gable ends	Prevention of odour and particulates migrating from site. Additional cover for birds ranging.	(i)Removal of particulates and ammonia expelled via extraction fans. (ii)Reduction of residual ammonia (released from sheds) adding to general air quality deterioration. (background)	None All will be designed to maximise benefits established though <i>farmtreestoair</i> modelling
Area of range planted up	Flock welfare and egg production. Biomass for fuel when mature and require thinning and re-planting. (sustainable tree cover and wood supply.) Contribution to carbon neutrality.	Absorption of ammonia by foliage. Absorption of N as NO ₃ and conversion into tree biomass from droppings on range. (less washed out to surface waters. Some enhanced biodiversity. Small potential lowering of water table and therefore winter ground water buffering capacity.	None. All designed to maximise benefits .