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The System

A Free Range Egg Production Unit is a building, which, in agricultural terms, is unusual. It is specific to an area of land, which it needs to gain accreditation and operate properly within industry and welfare standards.

An egg to be sold, as "free range" must have been produced in accordance with stringent standards. The standards to be applied in operation of the proposed Unit are the RSPCA Freedom Food Welfare Standards for Laying Hens and Pullets (February 2006). In addition, other standards must be met, principally the Lion Code, and strict standards published by individual retailers.

The combined effect of is to produce a welfare based system, which is highly regulated, and subject to regular independent inspection that extends to the quality, freshness and traceability of the eggs produced.

The RSPCA Welfare Standards (which apply EEC Legislation on Poultry Welfare) set limits on the number of birds that may be housed within a Unit as well as the amount of land that must be available for the birds to roam. These considerations affect the size of the Unit as well as it's location upon the land.

In all new Free Range Units the maximum stocking density internally, in broad terms, is 9 birds per sq. m.

Externally there must be available a minimum of 1 hectare of land for every 1,000 birds. No part of the qualifying land for this purpose can be more than 350 metres from the Unit itself.

The Unit is designed and located around welfare and quality standards, to achieve correct environmental conditions and stocking density.

There are formal accreditations and regular checks performed by RSPCA Inspectors which ensure continuing compliance and end user satisfaction that the term "free range" can be properly applied.

This also applies to both the Lion Code and retailers, producing a business that is open to formal inspections at any time.

Aspects of the Building and Range

The application for planning permission is not being made by John Bowler (Agriculture) Limited (JBA).

The Applicant for planning permission has entered a contract with JBA, which, upon the Unit becoming operational, provides a guaranteed market for all eggs produced.

In addition JBA, as part of the contract, operates a national support and collection network with company owned transport. Producers operate their own business and control the output with full back-up services provided by JBA. The back-up services provide proven methods and answers to maintain the flock in good health and production.

JBA offers a packaged opportunity to establish free range Units to bona fide applicants. Currently, at 2006, the total flock size operated by JBA's producers is over 1,000,000 birds, representing a significant percentage of traceable free range sales through multiple outlets across England and Wales.

JBA is well known as a premier supplier in the industry and has long-standing links with the industry generally.

The Unit for which permission is sought has been designed, both in it's dimensions and layout, to meet RSPCA standards and will be operated to the national "Lion Code".

The Unit can be altered in appearance in that it is possible to provide coloured profile sheets and different colours to walls and gables. A roof colour is suggested in the application.

The birds enter and leave the Unit via 'pop-holes', which lead onto a ground level mesh veranda.

The mesh veranda prevents packing of the ground by the birds, and acts to help clean the bird's claws on returning to the Unit.

This also applies to both the Lion Code and retailers, producing a business that is open to formal inspections at any time.

The birds are directed to the open range by means of a paddock.

The paddock is rotated regularly and the birds excluded from the previous used areas.

The "paddock rotation" system ensures that birds are always rotated to fresh pasture which prevents degradation of the grass and / or any build up of detritus. Following this principle ensures that the Unit retains sustainable surroundings of the quality grazing and avoids the problems of poached or contaminated land close to the Unit itself.

In this way the land immediately around the shed is able to regenerate. This is a proven system, allowing the potentially difficult area around the fixed Unit to remain in a good condition for the duration of the flock.

Environmental and Health Aspects: Smell

The Free Range Unit is designed, and proven in practice, to produce negligible environmental consequences. Concerns generally arise from perceived problems from smell, dust, flies, rodents and feral animals.

A) (i) Smell (day to day)

The design of the Unit incorporates a plastic slatted floor droppings pit, which has a proven history of creating no smell nuisance.

The design adopted means that, as droppings build up through the flock cycle, they remain dry and friable. There is a natural dry composting that takes place and ammonia in quantity will not be produced.

The RSPCA specify maximum ammonia levels in houses and great care is taken to maintain a dry environment in the Unit and control ammonia levels. To ensure the droppings remain dry and friable water usage is monitored daily, allowing any system leaks to be detected and dealt with quickly.

The surrounding pasture is regenerated and only occupied by birds for a short time, thus there is no build up of detritus outside the Unit (which is, in itself, a disease risk for the birds).

In practise, any smell within the houses is not apparent beyond its immediate surroundings. The Unit will confirm to "The Code of Good Practice for the Protection of Air" 1998 and as amended.

(ii) Smell (cleaning out)

The Unit cycle is normally 58 to 60 weeks (i.e. in excess of one year, as opposed to intensive cycles which could be as short as 6 weeks).

The Unit is only cleaned out at the end of each cycle (i.e. once every 60 weeks). At the clean out time, the Unit is dismantled internally and the detritus removed (see waste disposal protocol).

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In this way the land immediately around the shed is able to regenerate. This is a proven system, allowing the potentially difficult area around the fixed Unit to remain in a good condition for the duration of the flock.

It is anticipated that there would be some smell from the site during cleanout. However this will last no more than 1-2 days a frequency less than most usual agricultural practices.

Waste Management Protocol: External

NVZ

If the farm does lie within a designated NVZ, the occupier of the farm is responsible for compliance for the whole of the farm, if applicable. Should the proposed development and use be commenced, the occupier will revise and ensure compliance with NVZ action programme rules and compliance certification and records.

Externally

The birds exit onto a wire mesh which prevents degradation of the pasture immediately outside the pop holes. Should waste build up under the veranda this is easily removed and taken off site. If at all this would only be needed once at mid flock.

The birds are directed by fencing to paddocks then to access range constituting a minimum of one sixth of the free range grazing area. This paddock is then moved at equal intervals through the flock life, as necessary to ensure the range is properly utilised.

Moving range allocations allows the paddock (which is only occupied for one sixth of the flock period) to recover the grass and prevents any build up externally of detritus, which might present a pollution risk.

Sustainability

This system allows the passage of flocks through a fixed building to have no cumulative derogatory effects on any particular site, to maintain a clean outside environment and protect the health of the birds. The system is extensively practically proven on Units standing on all soil types, and is a method recognised by the accreditation bodies. Flock ranging practice and bird density controls (no more than 1000 birds per hectare) ensure that the range is not overgrazed and that the pasture is not subject to an unsustainable build up of nitrates. Perimeter fencing can be

introduced to deny the birds access to any landscape or ecological features that may need protection, an exclusion zone of approximately 5 meters being the usual based on the low intensity of use involved.

Waste removal

At the end of the flock cycle, the waste is removed via the end doors. The waste is excavated out by a bobcat type machine and loaded directly into waiting vehicles (normally tractor trailers) which are sheeted if necessary. The waste is then removed from site for spreading elsewhere as per to the Water Code. Waste is not retained on the site because, as a free range extensive system (as opposed to intensive poultry keeping) any external pollution will represent a disease threat to the incoming flock.

A concrete loading area is provided outside the removal doors to facilitate sweeping up after removal, and prevent the ground from becoming contaminated.

Waste Management Protocol: Surface Water

Surface water discharge will be principally from the roof of the building or any hard surfacing of roadways servicing the development.

Roof water is collected by conventional guttering and down pipes and routed away for the building via underground drains. Roof water is not allowed to spill directly to ground as build up around the building could lead to water logging and potential disease problems should the water become contaminated by chicken droppings.

Final disposal of this surface water is usually by soak-away, subject to ground conditions. In some instances, subject to a site based agreement through the planning system, there may be a ditch system in place that has suitable distance and capacity to take any peak flow. In exceptional circumstances, or where sufficient percolation is not available, then a small attenuation pond can be installed, isolated from the range by fencing if necessary.

Due to the small areas involved, it is usual to allow surface water tracks to run off. The nature of a farm of this type with no heavy stock proximity to the Unit, allows the approaches to the Unit to be kept clean and clear. This good housekeeping is also reflective in stock health, and is a factor in maintaining a healthy, vermin free environment. The use is also a low traffic generator and so the possibility of any form of wash off pollution into the ground from tracks is very low.

In principle then, there is a functional reason to separate roof and storm water from the surroundings of the Unit itself.

Disposal of Dead Birds

A mortality rate of up to 5% over the flock duration can be expected. This equates to approximately 1 bird per 1000 birds housed per week.

If there is a disease challenge or physical problem then the fatality rate may rise. Subject to availability in this area, the producer may take the opportunity to use the DEFRA disposal of fallen stock scheme, or use a small capacity incinerator, which is more than adequate for this use.

Any incinerator installed will have an afterburn Unit which effectively reduces emissions and odours.

The incinerator usually used for these Units is the Stour II incinerator which is manufactured by Waste Spectrum Environmental. The Stour II operates at less than 50kg / hour, achieves 850oC for two seconds and has automatic timer controls. It is fully compliant with the latest (2003) Animal By-Product Regulations. It currently holds 'Declaration of Type Approval' and is soon to be granted 'Type Approval status by DEFRA.

Waste Spectrum Environmental can be contacted for literature or further information in the following ways:

Waste Spectrum Environmental
Spectrum House
Perrywood Trading Park
Wylds Lane
Worcester
WR5 1DZ

Telephone: 01905 362100
Fax: 01905 362101
Email: sales@wastespectrum.com
Web: www.wastespectrum.com

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Disposal of Dead Birds: Incinerator

Waste Spectrum: Stour II Datasheet

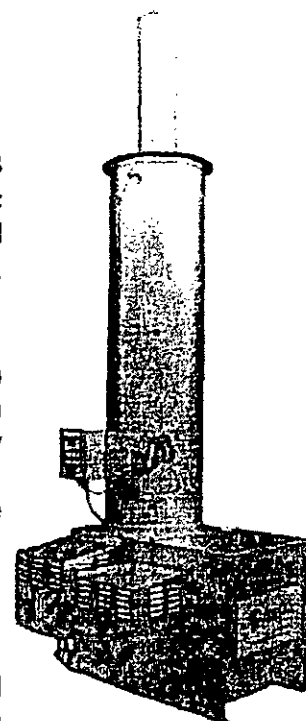
Application Environment

The EU-specified Animal By-products Regulation 2003 dictates that disposal of all fallen stock follows specific criteria. As on-site burial is now illegal, farmers and producers must use an alternative method of disposal, whether by a collection service, hunt kennel or incineration.

Failure to dispose of animal carcasses in accordance with the EU legislation is increasingly likely to result in investigation by DEFRA or the local authority (usually Trading Standards). A considerable fine may be imposed. However, certain EU-suggested disposal options - pose potentially significant bio-security hazards.

Product Aim

The Stour II incinerator is designed to supply a simple and effective solution to the disposal of smaller volumes of fallen poultry, pig, sheep and other similar stock. Use of the Stour II ensures compliance with the EU Animal By-products Regulation 2003 and provides a bio-secure method of disposal, negating the necessity of collection vehicles entering the farm.



How it Works

The Stour II is a DEFRA "Type Approved" compact, top-loading incinerator that is easy to use. With a load capacity of 100kg, it is ideal for farmers needing to dispose of smaller waste volumes, up to that of a sizeable ewe. The operator simply loads the animal carcass into the main chamber and commences a burn programme. The incinerator can then be left unattended until the carcass has been reduced to ash.

The Stour II burns at a rate of less than 50kg per hour. This low capacity status therefore requires no planning permission for on-farm use. The integral afterburner and 3m chimney ensure clean emissions from the flue. Utilising highly efficient automatic burners and timer controls, it provides excellent low cost disposal. The incinerator is easily installed, requiring a 240-volt electricity and fuel supply.

Nitrogen Deposition

Using figures from "Guidelines for Farmers in NVZ'S – England" published by DEFRA, 1000 laying hens will produce 41 tonnes of manure per annum. It is considered that 10% - 12% of this is deposited on the land, the rest being in the building.

This equates to 660kg annual production of nitrogen so 66 – 79.2kg nitrogen per 1000 birds.

Stocking density on the land is 1000 birds per hectare so annual nitrogen deposition is up to 79.2kg/ha/year. The maximum allowed under NVZ rules is 250kg/ha/and typically use on arable land is 220-250kg/ha for wheat and more for soil seed rape.

Furthermore the nitrogen applied to arable land will typically be applied in three tranches in March, April and May whereas the poultry muck will be applied daily. This means that the grass growing on the range will use the nitrogen as it becomes available, whereas a proportion of that applied to arable or pastureland could well be leached out should heavy rain follow application.

Therefore the nitrogen run off risk is considerably less than with conventional agriculture practices.

With physical run off, 4.9 tonnes (12%) per annum of muck on the field per ha is equivalent to 13.4kg/ha per day. This is such a small quantity as to preclude any run off.

If conventional manure were being spread as a fertiliser, 5t/ha in one application would not be unusual.

Traffic Analysis

The free range Unit will, during the time the birds are in lay, require one egg collection per week. The Unit incorporates sufficient feed storage capacity to require maximum of one feed delivery per four weeks.

For cleaning out, we allow additional visits, however this is normally carried out using tractor/trailer combinations. Egg and feed lorry visits are carried out by experienced regular drivers so no routing or route finding problems are anticipated.

Current Egg Collection Lorries: Rigid 2 axle, g.w. 18500kg

Feed Lorries: Rigid 8 wheel

HGV VISITS

Bird Age (wks)	Egg collection	Feed delivery	Birds In	Birds Out	Total
18-21	2	1	2		3
22-25	4	1			5
26-29	4	1			5
30-33	4	1			5
34-38	4	1			5
39-41	4	1			5
42-45	4	1			5
46-49	4	1			5
50-53	4	1			5
54-57	4	1			5
58-61	4	1			5
62-65	4	1			5
66-69	4	1			5
70-73	3	0			3
Total number of visits					66
+ allowance for cleaning out of 7 =					71
71 visits over 1 cycle of birds of 60 weeks					
(including downtime for cleaning out) = 1.4 visits/wk					