BAT

DEVELOPMENT: **IPPC NEW PERMIT– PULLET REARING UNIT AT BRYN Y PLENTYN FARM**

LOCATION: **Bryn y Plentyn Farm, Middleton**
Oswestry
Shropshire
SY11 4LP

CLIENT: **DA and LJ Woollam**

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BAT RESPONSES

BAT 25. BAT is to monitor ammonia emissions to air using one of the following techniques with at least the frequency given below.

	Technique ([1])	Frequency	Applicability
a	Estimation by using a mass balance based on the excretion and the total (or total ammoniacal) nitrogen present at each manure management stage.	Once every year for each animal category.	Generally applicable.
b	Calculation by measuring the ammonia concentration and the ventilation rate using ISO, national or international standard methods or other methods ensuring data of an equivalent scientific quality.	Every time there are significant changes to at least one of the following parameters: (a) the type of livestock reared at the farm; (b) the housing system.	Only applicable to emissions from each animal house. Not applicable to plants with an air cleaning system installed. In this case, BAT 28 applies. Due to the cost of measurements, this technique may not be generally applicable.
c	Estimation by using emission factors.	Once every year for each animal category.	Generally applicable.

([1]) A description of the techniques is given in Section 4.9.2.

The pullet rearing unit at Bryn Y Plentyn will utilise the Estimation by using emission factors in addressing BAT 25.

BAT 3. In order to reduce total nitrogen excreted and consequently ammonia emissions while meeting the nutritional needs of the animals, BAT is to use a diet formulation and nutritional strategy which includes one or a combination of the techniques given below.

	Technique (1)	Applicability
a	Reduce the crude protein content by using an N-balanced diet based on the energy needs and digestible amino acids.	Generally applicable.
b	Multiphase feeding with a diet formulation adapted to the specific requirements of the production period.	Generally applicable.
c	Addition of controlled amounts of essential amino acids to a low crude protein diet.	Applicability may be restricted when low-protein feedstuffs are not economically available. Synthetic amino acids are not applicable to organic livestock production.

	Technique (1)	Applicability
d	Use of authorised feed additives which reduce the total nitrogen excreted.	Generally applicable.

(1) A description of the techniques is given in Section 4.10.1. Information on the effectiveness of the techniques for ammonia emission reduction can be taken from recognised European or international guidance e.g. UNECE guidance document on 'Options for ammonia mitigation'.

The pullet rearing unit at Bryn Y Plentyn will utilise the Multiphase feeding with a diet formulation adapted to the specific requirements of the production period in addressing BAT 3.

BAT 4. In order to reduce the total phosphorus excreted, while meeting the nutritional needs of the animals, BAT is to use a diet formulation and a nutritional strategy which includes one or a combination of the techniques given below.

	Technique (1)	Applicability
a	Multiphase feeding with a diet formulation adapted to the specific requirements of the production period.	Generally applicable.
b	Use of authorised feed additives which reduce the total phosphorus excreted (e.g. phytase).	Phytase may not be applicable in case of organic livestock production.
c	Use of highly digestible inorganic phosphates for the partial replacement of conventional sources of phosphorus in the feed.	Generally applicable within the constraints associated with the availability of highly digestible inorganic phosphates.

(1) A description of the techniques is given in Section 4.10.2.

The pullet rearing unit at Bryn Y Plentyn will utilise the Multiphase feeding with a diet formulation adapted to the specific requirements of the production period in addressing BAT 4.

BAT 27. BAT is to monitor dust emissions from each animal house using one of the following techniques with at least the frequency given below.

	Technique (1)	Frequency	Applicability
a	Calculation by measuring the dust concentration and the ventilation rate using EN standard methods or other methods (ISO, national or international) ensuring data of an equivalent scientific quality.	Once every year.	Only applicable to dust emissions from each animal house. Not applicable to plants with an air cleaning system installed. In this case, BAT 28 applies. Due to the cost of measurements, this technique may not be generally applicable.
b	Estimation by using emission factors.	Once every year.	Due to the cost of establishing emissions factors, this technique may not be generally applicable.

(1) A description of the techniques is given in Sections 4.9.1 and 4.9.2.

The pullet rearing unit at Bryn Y Plentyn will utilise the Estimation by Using Emission Factors in relation to BAT 27.

It is confirmed that the unit at Kinton Farm will be in compliance with;

N excretion – 0.6 kg N excreted/animal place/year

P excretion – 0.25 kg P205 excreted/animal place/year

BAT 32. In order to reduce ammonia emissions to air from each house for broilers, BAT is to use one or a combination of the techniques given below.

	Technique ([1])	Applicability
a	Forced ventilation and a non-leaking drinking system (in case of solid floor with deep litter).	Generally applicable.
b	Forced drying system of litter using indoor air (in case of solid floor with deep litter).	For existing plants, the applicability of forced air drying systems depends on the height of the ceiling. Forced air drying systems may not be applicable to warm climates, depending on the indoor temperature.
c	Natural ventilation, equipped with a non-leaking drinking system (in case of solid floor with deep litter).	Natural ventilation is not applicable to plants with a centralised ventilation system. Natural ventilation may not be applicable during the initial stage of rearing of broilers and due to extreme climate conditions.
d	Litter on manure belt and forced air drying (in case of tiered floor systems).	For existing plants, the applicability depends on the height of the side walls.
e	Heated and cooled littered floor (in case of combideck systems).	For existing plants, the applicability depends on the possibility to install closed underground storage for the circulating water.
f	Use of an air cleaning system, such as: 1. Wet acid scrubber; 2. Two-stage or three-stage air cleaning system; 3. Bioscrubber (or biotrickling filter).	May not be generally applicable due to the high implementation cost. Applicable to existing plants only where a centralised ventilation system is used.

([1]) A description of the techniques is given in Sections 4.11 and 4.13.2.

The pullet rearing unit at Bryn Y Plentyn will utilise an effective forced ventilation system and non-leaking drinking system (Technique A).

To conclude, as per the above, the pullet rearing unit at Bryn Y Plentyn will comply with all BAT conclusions.