

MOGEELY PIG FARM



126635-21/12/2012-EIS-Part C

APPENDIX 4

CUSTOMER FARMERS

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## Customer Farms 2012 Mogeely

Farm Code	Total Amount m3	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.
1	444.02	0	0	0	0	0	0	0	0	0	0	0	0
2	3626.74	0	0	0	0	0	0	0	0	0	0	0	0
3	2523.21	0	0	0	0	0	0	0	0	0	0	0	0
4	5486.07	0	0	0	0	0	0	0	0	0	0	0	0
5	6477.81	0	0	0	0	0	0	0	0	0	0	0	0
6	4415.95	0	0	0	0	0	0	0	0	0	0	0	0
7	190.89	0	0	0	0	0	0	0	0	0	0	0	0
8	753.66	0	0	0	0	0	0	0	0	0	0	0	0
9	181.78	0	0	0	0	0	0	0	0	0	0	0	0
11	1597.83	0	0	0	0	0	0	0	0	0	0	0	0
13	5066.74	0	0	0	0	0	0	0	0	0	0	0	0
14	1228.62	0	0	0	0	0	0	0	0	0	0	0	0
15	219.93	0	0	0	0	0	0	0	0	0	0	0	0
16	212.9	0	0	0	0	0	0	0	0	0	0	0	0
17	700	0	0	0	0	0	0	0	0	0	0	0	0
18	139.99	0	0	0	0	0	0	0	0	0	0	0	0
19	360.24	0	0	0	0	0	0	0	0	0	0	0	0
20	363	0	0	0	0	0	0	0	0	0	0	0	0
21	577.52	0	0	0	0	0	0	0	0	0	0	0	0
22	407.4	0	0	0	0	0	0	0	0	0	0	0	0
23	908.69	0	0	0	0	0	0	0	0	0	0	0	0
24	1691.8	0	0	0	0	0	0	0	0	0	0	0	0
25	1480	0	0	0	0	0	0	0	0	0	0	0	0
26	361.5	0	0	0	0	0	0	0	0	0	0	0	0
27	1196	0	0	0	0	0	0	0	0	0	0	0	0
28	60	0	0	0	0	0	0	0	0	0	0	0	0
29	2696.55	0	0	0	0	0	0	0	0	0	0	0	0
30	3937.59	0	0	0	0	0	0	0	0	0	0	0	0
31	1465	0	0	0	0	0	0	0	0	0	0	0	0
32	280	0	0	0	0	0	0	0	0	0	0	0	0
33	81.81	0	0	0	0	0	0	0	0	0	0	0	0
34	165	0	0	0	0	0	0	0	0	0	0	0	0
35	1783.64	0	0	0	0	0	0	0	0	0	0	0	0
36	807.6	0	S	0	0	0	0	0	0	0	0	0	0
37	1624	0	0	0	0	0	0	0	0	0	0	0	0
38	490.86	0	0	0	0	0	0	0	0	0	0	0	0
39	933.79	0	0	0	0	0	0	0	0	0	0	0	0
40	456.5	0	0	0	0	0	0	0	0	0	0	0	0
	59394.63	0	0	0	0	0	0	0	0	0	0	0	0

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Conceptual map for planning purposes only. No warranty is given for any use.

MOGEELY PIG FARM

## APPENDIX 5

# ORGANIC MANURE NUTRIENTS

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## SCHEDULE 2

CRITERIA AS TO STORAGE CAPACITY AND NUTRIENT  
MANAGEMENT

Table 1 Slurry storage capacity required for sows and pigs

Unit type	m <sup>3</sup> /week <sup>1</sup>				
	2.0:1	2.5:1	3.0:1	3.5:1	4.0:1
Water:meal ratio changing for finishers only					
Breeding unit (per sow place)	-	-	-	-	0.174
Integrated unit (per sow place)	0.312	0.355	0.398	0.441	0.483
Finishing unit (per pig)	0.024	0.031	0.039	0.046	0.053

<sup>1</sup>An additional 200mm freeboard must be provided in all covered tanks and 300mm freeboard in all uncovered tanks. Allowance must also be made for net rainfall during the specified storage period for uncovered tanks.

Table 2 Slurry storage capacity required for cattle, sheep and poultry

Livestock type	m <sup>3</sup> /week <sup>1</sup>
Dairy cow	0.33
Suckler cow	0.29
Cattle > 2 years	0.26
Cattle (18-24 months old)	0.26
Cattle (12-18 months old)	0.15
Cattle (6-12 months old)	0.15
Cattle (0-6 months old)	0.08
Lowland ewe	0.03
Mountain ewe	0.02
Lamb-finishing	0.01
Poultry — layers per 1000 birds (30% DM)	0.81

<sup>1</sup>An additional 200mm freeboard must be provided in all covered tanks and 300mm freeboard in all uncovered tanks. Allowance must also be made for net rainfall during the specified storage period for uncovered tanks.

Table 3 Storage capacity required for dungstead manure

Livestock type	Solid fraction (m <sup>3</sup> /week)	Seepage fraction (m <sup>3</sup> /week) <sup>1</sup>
Dairy cow	0.28	0.04
Suckler cow	0.25	0.03
Cattle > 2 years	0.23	0.02
Cattle (18-24 months old)	0.23	0.02
Cattle (12-18 months old)	0.13	0.01
Cattle (6-12 months old)	0.13	0.01
Cattle (0-6 months old)	0.07	0.01

<sup>1</sup>Allowance must also be made for net rainfall during the specified storage period for uncovered tanks.

Table 6 Annual nutrient excretion rates for livestock

Livestock type	Total Nitrogen	Total Phosphorus
	kg/year	kg/year
Dairy cow	85	13
Suckler cow	65	10
Cattle (0-1 year old)	24	3
Cattle (1-2 years old)	57	8
Cattle > 2 years	65	10
Mountain ewe & lambs	7	1
Lowland ewe & lambs	13	2
Mountain hogget	4	0.6
Lowland hogget	6	1
Goat	9	1
Horse (>3 years old)	50	9
Horse (2-3 years old)	44	8
Horse (1-2 years old)	36	6
Horse foal (< 1 year old)	25	3
Donkey/small pony	30	5
Deer (red) 6 months — 2 years	13	2
Deer (red) > 2 years	25	4
Deer (fallow) 6 months — 2 years	7	1
Deer (fallow) > 2 years	13	2
Deer (sika) 6 months — 2 years	6	1
Deer (sika) > 2 years	10	2
Breeding unit (per sow place)	35	8
Integrated unit (per sow place)	87	17
Finishing unit (per pig place)	9.2	1.7
Laying hen per bird place	0.56	0.12
Broiler per bird place	0.24	0.09
Turkey per bird place	1	0.4

Table 7 Amount of nutrient contained in 1m<sup>3</sup> of slurry

Livestock type	Total Nitrogen (kg)	Total Phosphorus (kg)
Cattle	5.0	0.8
Pig	4.2	0.8
Sheep	10.2	1.5
Poultry — layers 30% DM	13.7	2.9

For the purposes of calculation, assume that 1m<sup>3</sup> = 1,000 litres = 1 tonne.

Table 8 Amount of nutrients contained in 1 tonne of organic fertilisers other than slurry

Livestock type		Total Nitrogen (kg)	Total Phosphorus (kg)
Poultry manure	broilers/deep litter	11.0	6.0
	layers 55% dry matter	23.0	5.5
	turkeys	28.0	13.8
Dungstead manure (cattle)		3.5	0.9
Farmyard manure		4.5	1.2
Spent mushroom compost		8	2.5
Sewage sludge		Total nitrogen and total phosphorus content per tonne shall be as declared by the supplier in accordance with the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 and any subsequent amendments thereto.	
Dairy processing residues and other products not listed above		Total nitrogen and total phosphorus content per tonne based on certified analysis shall be provided by the supplier.	

Table 9 Nutrient availability in fertilisers

Article 15

Fertiliser	Availability (%)		
	Nitrogen		Phosphorus
	From January 1 2010	From January 1 2011	From January 1 2007
Chemical	100	100	100
Pig and poultry manure	50	50	100
Farmyard manure	30	30	100
Spent mushroom compost	45	20	100
Cattle and other livestock manure (including that produced on the holding)	40	40	100

<sup>1</sup>Refers to year of application



MOGEELY PIG FARM

## APPENDIX 6

# BUFFER ZONES

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- (c) Where a period of six years or more has elapsed after the taking of a soil test in relation to soil the results of that test shall be disregarded for the purposes of paragraph (a) except in a case where that soil test indicates the soil to be at phosphorus index 4.

(3) Without prejudice to the generality of sub-article (1) and subject to sub-article (4), the amount of available nitrogen or available phosphorus applied to promote the growth of a crop specified in Table 12, 13, 14, 15, 16, 17, 18, 19, 20 or 21 of Schedule 2 shall not exceed the amount specified in the table in relation to that crop having regard to the relevant nitrogen index or phosphorus index, as the case may be, for the soil on which the crops are to be grown.

(4) In the case of a holding on which grazing livestock are held, the amount of available phosphorus supplied to the holding by the concentrated feedstuff shall be the amount fed to such livestock in the previous calendar year and the phosphorus content of such concentrated feedstuff shall in the absence of a known phosphorus content or phosphorus content provided by the supplier be deemed to be 0.5 kg phosphorus in respect of each 100 kg of such concentrated feedstuff.

- (5) (a) In the case of a holding on which grazing livestock are held, the amount of available nitrogen and available phosphorus supplied to the holding by manure from such livestock shall (save insofar as such manure is exported from the holding) be deemed to be the relevant proportion of the amount of available nitrogen and available phosphorus contained in the total manure produced by such livestock.
- (b) In paragraph (a), the "relevant proportion" means the proportion of a year as is represented by the storage period specified in Schedule 3 in relation to the holding.

#### PART 4

### PREVENTION OF WATER POLLUTION FROM FERTILISERS AND CERTAIN ACTIVITIES

#### *Distances from a water body and other issues*

17. (1) Chemical fertiliser shall not be applied to land within 2m of any surface waters.

(2) Organic fertiliser or soiled water shall not be applied to land within—

- (a) 200m of the abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100m<sup>3</sup> or more of water per day or serving 500 or more persons,
- (b) 100m of the abstraction point (other than an abstraction point specified in paragraph (a)) of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water

scheme supplying 10m<sup>3</sup> or more of water per day or serving 50 or more persons,

- (c) 25m of any borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified in paragraph (a) or (b),
- (d) 20m of a lake shoreline,
- (e) 15m of exposed cavernous or karstified limestone features (such as swallow-holes and collapse features), or
- (f) subject to sub-articles (13) and (14), 5m of any surface waters (other than a lake or surface waters specified at paragraph (a) or (b)).

(3) Notwithstanding the requirements of sub-articles (2)(a), (2)(b) and (2)(c), the following distances shall apply from 12 January 2011 (in the case of drinking water abstractions located in counties Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford and Wicklow), from 15 January 2011 (in the case of drinking water abstractions located in counties Clare, Galway, Kerry, Limerick, Longford, Louth, Mayo, Meath, Roscommon, Sligo and Westmeath) and from 31 January 2014 (in the case of drinking water abstractions located in counties Cavan, Donegal, Leitrim and Monaghan) or as soon as may be thereafter-

- (a) 30m from the abstraction point in the case of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m<sup>3</sup> or more of water per day or serving 50 or more persons,
- (b) 15m from the abstraction point in the case of any borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified in paragraph (a).

(4) Sub-article (3) shall only apply in situations where a local authority has completed a technical assessment of conditions in the vicinity of the abstraction point, including taking into account variation in soil and subsoil conditions, the landspreading pressures in the area, the type of abstraction, available water quality evidence and the likely risk to the water supply source and the local authority has determined that the distance does not give rise to a risk to the water supply and a potential danger to human health.

(5) A local authority may decide to apply the landspreading restriction to the upstream catchment area and to the close proximity downstream of the abstraction point in the case of any surface waters referred to in sub-article (3)(a).

(6) A local authority may, in the case of any particular abstraction point and following consultation with the Agency, specify a greater distance to that specified in sub-articles (2) or (3) where, following prior investigations, the authority is satisfied that such distance is appropriate for the protection of waters being abstracted at that point. The distance so specified shall be determined by the

local authority using an evidence-based approach which takes into account the natural vulnerability of the waters to contamination from land spreading, the potential risk to human health arising from the landspreading activity as well as the water quality evidence, including information on water quality trends.

(7) Notwithstanding the provisions of sub-articles (2), (3) and (6) a local authority shall as soon as may be practicable, following prior investigations and following consultation with the Agency, specify an alternative distance, including a landspreading exclusion area where necessary, in the case of a water abstraction for human consumption in a scheme supplying 10m<sup>3</sup> or more of water per day, or serving 50 or more persons, where—

- (a) on the basis of the results of monitoring carried out for the purposes of Article 7 of the European Communities (Drinking Water) (No. 2) Regulations 2007 (S.I. No. 278 of 2007), the quality of water intended for human consumption does not meet the parametric values specified in Part I of the Schedule of those Regulations or the quality of water constitutes a potential danger to human health, and it appears to the local authority that this is due to the landspreading of organic fertilisers or soiled water in the vicinity of the abstraction point, or
- (b) investigations undertaken by a water services authority as part of the management of a water supply scheme indicate that the landspreading activity presents a significant risk to the drinking water supply or a potential danger to human health having regard to catchment factors in the vicinity of the abstraction point including but not limited to slope, vulnerability, and hydrogeology, the scale and intensity of land spreading pressures, the type of water supply source and water quality evidence, including information on water quality trends.

(8) A distance specified by a local authority in accordance with sub-articles (3), (6) and (7) may be described as a distance or distances from an abstraction point, a hydrogeological boundary or topographical feature or as an area delineated on a map or in such other way as appears appropriate to the authority.

(9) In relation to sub-articles (6) and (7), "prior investigations" means, in relation to an abstraction point, an assessment of the susceptibility of waters to contamination in the vicinity of the abstraction point having regard to—

- (a) the direction of flow of surface water or groundwater, as the case may be,
- (b) the slope of the land and its runoff potential,
- (c) the natural geological and hydrogeological attributes of the area including the nature and depth of any overlying soil and subsoil and its effectiveness in preventing or reducing the entry of harmful substances to water, and

(d) where relevant, the technical specifications set out in the document "Groundwater Protection Schemes" published in 1999 (ISBN 1-899702-22-9) or any subsequent published amendment of that document.

(10) Where a local authority specifies a distance in accordance with either of sub-articles (3), (6) or (7) the authority shall, as soon as may be—

(a) notify the affected landowners, the Agency and the Department of Agriculture, Fisheries and Food of the distance so specified,

(b) send to the Agency a summary of the report of any investigations undertaken and the reasons for specifying the alternative distance,

(c) make an entry in the register maintained in accordance with Article 30(6), and

(d) publish and maintain on the local authority website an updated schedule of setback distances specified for each drinking water supply.

(11) The requirements under sub-article (10) shall apply in the case of each local authority water supply and all other supplies for which the local authority has supervisory authority.

(12) The Agency may issue advice and/or direction to a local authority in relation to any requirements including requirements for technical assessments and prior investigations arising under sub-articles (2), (3), (4), (5), (6), (7), (8) or (9) and a local authority shall comply with any such advice or direction given.

(13) The distance of 5m specified in sub-article (2)(f) may be reduced to 3m where one of the following conditions is met—

(a) the water in question is an open drain, or

(b) the area of land adjacent to the water is a narrow parcel of land not exceeding one hectare in area and not more than 50m in width.

(14) Notwithstanding sub-articles (2)(f) and (13), organic fertiliser or soiled water shall not be applied to land within 10m of any surface waters where the land has an average incline greater than 10% towards the water.

(15) Where farmyard manure is held in a field prior to landspreading it shall be held in a compact heap and shall not be placed within—

(a) 250m of the abstraction point of any surface waters or borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m<sup>3</sup> or more of water per day or serving 50 or more persons,

(b) 50m of any other borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified at paragraph (a),

- (c) 20m of a lake shoreline,
- (d) 50m of exposed cavernous or karstified limestone features (such as swallow-holes and collapse features),
- (e) 10m of any surface waters (other than a lake or surface waters specified at paragraph (a)).

(16) Farmyard manure shall not be held in a field at any time during the periods specified in Schedule 4 as applicable to that substance.

(17) Silage bales shall not be stored outside of farmyards within 20m of a surface watercourse or drinking water abstraction point in the absence of adequate facilities for the collection and storage of any effluent arising.

*Requirements as to manner of application of fertilisers, soiled water etc*

18. (1) Livestock manure and other organic fertilisers, effluents and soiled water shall be applied to land in as accurate and uniform a manner as is practically possible.

(2) Fertilisers or soiled water shall not be applied to land in any of the following circumstances—

- (a) the land is waterlogged;
- (b) the land is flooded or likely to flood;
- (c) the land is snow-covered or frozen;
- (d) heavy rain is forecast within 48 hours, or
- (e) the ground slopes steeply and, taking into account factors such as proximity to waters, soil condition, ground cover and rainfall, there is significant risk of causing water pollution.

(3) A person shall, for the purposes of sub-article (2)(d), have regard to weather forecasts issued by Met Éireann.

(4) Organic fertilisers or soiled water shall not be applied to land—

- (a) by use of an umbilical system with an upward-facing splashplate,
- (b) by use of a tanker with an upward-facing splashplate,
- (c) by use of a sludge irrigator mounted on a tanker, or
- (d) from a road or passageway adjacent to the land irrespective of whether or not the road or passageway is within or outside the curtilage of the holding.

(5) Subject to sub-article (6), soiled water shall not be applied to land—

20 [610]

(a) in quantities which exceed in any period of 42 days a total quantity of 50,000 litres per hectare, or

(b) by irrigation at a rate exceeding 5 mm per hour.

(6) In an area which is identified on maps compiled by the Geological Survey of Ireland as "Extreme Vulnerability Areas on Karst Limestone Aquifers", soiled water shall not be applied to land—

(a) in quantities which exceed in any period of 42 days a total quantity of 25,000 litres per hectare, or

(b) by irrigation at a rate exceeding 3 mm per hour

unless the land has a consistent minimum thickness of 1m of soil and subsoil combined.

(7) For the purposes of sub-article (6), it shall be assumed until the contrary is shown that areas so identified as "Extreme Vulnerability Areas on Karst Limestone Aquifers" do not have a consistent minimum thickness of 1m of soil and subsoil combined.

*Periods when application of fertiliser is prohibited*

19. (1) Subject to this article, the application of fertiliser to land is prohibited during the periods specified in Schedule 4.

(2) Sub-article (1) shall not apply in relation to the application to land of—

(a) soiled water, or

(b) chemical fertilisers to meet the crop requirements of Autumn-planted cabbage or of crops grown under permanent cover, or

(c) fertilisers whose application rate or usage rate is less than 1kg per hectare of available nitrogen or phosphorus.

*Limits on the amount of livestock manure to be applied*

20. (1) Subject to this article, the amount of livestock manure applied in any year to land on a holding, together with that deposited to land by livestock, shall not exceed an amount containing 170 kg of nitrogen per hectare.

(2) For the purposes of sub-article (1), the amount of nitrogen produced by livestock and the nitrogen content of livestock manure shall be calculated in accordance with Tables 6, 7 and 8 of Schedule 2 except in the case of pig manure or poultry manure where a different amount is specified in a certificate issued in accordance with Article 32 in relation to that manure.

(3) For the purposes of sub-article (1), the area of a holding shall be deemed to be the net area of the holding.

(4) The application to land on a holding in any year of livestock manure in excess of the amount specified in sub-article (1) shall be deemed not to be a contravention of that sub-article where all of the following conditions are met—

- (a) the occupier of the holding has made application in respect of that year to the Minister for Agriculture, Fisheries and Food for authorisation of a derogation from the requirements of that sub-article;
- (b) the application under paragraph (a) is duly completed in the form and on or before the date specified for the time being by that Minister;
- (c) the application under paragraph (a) is accompanied by an undertaking in writing by the occupier to comply with all the conditions specified in Schedule 5, and
- (d) all the conditions set out in Schedule 5 are met by the occupier in relation to the holding.

(5) Where an application is made to the Minister for Agriculture, Fisheries and Food in accordance with sub-article (4) that Minister shall consider the application and, where that Minister considers that the application does not comply with the conditions therein, shall issue a notice of refusal to the occupier.

*Ploughing and the use of non-selective herbicides*

21. (1) Where arable land is ploughed between 1 July and 30 November the necessary measures shall be taken to provide for emergence, within 6 weeks of ploughing, of green cover from a sown crop. A rough surface shall be maintained prior to a crop being sown in the case of lands ploughed between 1 December and 15 January.

(2) Where grassland is ploughed between 1 July and 15 October the necessary measures shall be taken to provide for emergence by 1 November of green cover from a sown crop.

(3) Grassland shall not be ploughed between 16 October and 30 November.

(4) When a non-selective herbicide is applied to arable land or to grassland in the period between 1 July and 30 November the necessary measures shall be taken to provide for the emergence within 6 weeks of the application, of green cover from a sown crop or from natural regeneration.

(5) Where green cover is provided for in compliance with this article, the cover shall not be removed by ploughing or by the use of a non-selective herbicide before 1 December unless a crop is sown within two weeks of its removal.

(6) In the case of land which is ploughed in the course of a ploughing competition under the auspices of the National Ploughing Association, a temporary exemption in the form of an extension to the time period specified in sub-article (1) or (2) for establishment of green cover after the land is ploughed may be granted to a person by the Minister for Agriculture, Fisheries and Food where it can be shown that conditions are such that an extension is necessary.



MOGEELY PIG FARM

## APPENDIX 7

# ORGANIC MANURE SPREAD DATES

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## SCHEDULE 4

PERIODS WHEN APPLICATION OF FERTILISERS TO LAND IS  
PROHIBITED

1. In counties Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford and Wicklow, the period during which the application of fertilisers to land is prohibited is the period from—

- (a) 15 September to 12 January in the case of the application of chemical fertiliser
- (b) 15 October to 12 January in the case of the application of organic fertiliser (other than farmyard manure)
- (c) 1 November to 12 January in the case of the application of farmyard manure.

2. In counties Clare, Galway, Kerry, Limerick, Longford, Louth, Mayo, Meath, Roscommon, Sligo and Westmeath, the period during which the application of fertilisers to land is prohibited is the period from—

- (a) 15 September to 15 January in the case of the application of chemical fertiliser
- (b) 15 October to 15 January in the case of the application of organic fertiliser (other than farmyard manure)
- (c) 1 November to 15 January in the case of the application of farmyard manure.

3. In counties Cavan, Donegal, Leitrim and Monaghan, the period during which the application of fertilisers to land is prohibited is the period from—

- (a) 15 September to 31 January in the case of the application of chemical fertiliser
- (b) 15 October to 31 January in the case of the application of organic fertiliser (other than farmyard manure)
- (c) 1 November to 31 January in the case of the application of farmyard manure.

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## APPENDIX 8

# RECORD OF MOVEMENT OF ORGANIC FERTILISERS

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RECORD 3

RECORD OF MOVEMENT OF ORGANIC FERTILISERS <sup>1</sup>

Movement forms must be submitted before the end of each year i.e. details of exports which occur in 2012 must be submitted on this form by 31.12.12

**IMPORTER(S) PLEASE NOTE:** All importer details must be supplied. Importer breach of the 170kg limit N/oha may be liable to penalty. If the importer does not have a herd number, the area and LPIS number OR a map with adjacent LPIS number of the area question will be required.

Date of movement	Type of fertiliser from Tables 7 and 8 of the Regulations (e.g. cattle or pig slurry)	Nutrient content of fertiliser (from Tables 7 or 8)		Quantity moved (m <sup>3</sup> , litres, kg, specify units used)	Total N kg	Total P kg	Confirmation that details of movement are correct Name, Signature & Herd No are required for the Exporter and Importer(s) <b>This form cannot be processed unless all details are supplied.</b>		
		N kg/m <sup>3</sup>	P kg/m <sup>3</sup>				EXPORTER		IMPORTER(S) (List if more than one importer)
							Name: Herd No: Signature:	Name: Herd No: Signature:	
							Name: Herd No: Signature:	Name: Herd No: Signature:	
							Name: Herd No: Signature:	Name: Herd No: Signature:	
<b>Total N and P in organic fertilisers moved (kgs)</b>								Name: Herd No: Signature:	Name: Herd No: Signature:

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<sup>1</sup> A copy of this record must be maintained by both the exporter and importer. The "exporter" is the farmer sending organic fertiliser out of his/her holding. The "importer" is the farmer taking it in.

**PLEASE COMPLETE AND RETURN FORM TO: Nitrates Section, Department of Agriculture, Food & the Marine, Johnstown Castle Estate, Wexford.**  
PLEASE NOTE: The only acceptable proof of postage will be a Swift Post Receipt or a Registered Post Receipt.

MOGEELY PIG FARM

## APPENDIX 9

DEPARTMENT OF AGRICULTURE  
APPROVED METHODS OF  
LANDSCAPING & RECOMMENDED  
PLANT TYPES FROM RURAL  
ENVIRONMENT PROTECTION  
SCHEME 4 (FARMERS' HANDBOOK)

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A long, thin tongue or hinge allows the laid stem to be twisted and positioned to best advantage.

Laid stems are secured to prevent them being damaged by livestock rubbing or pushing against the hedge and to prevent damage from strong winds. Cut stems are secured to posts driven into the hedge bank interwoven with suitable rods (hazel/willow) to give stability.

### **Coppicing of Hedgerows**

Long neglected and overgrown hedges with sufficient vigour may be coppiced (cut back to 10 cm. from ground level). This may be carried out with a chainsaw or circular saw. Gaps should be filled by in-planting similar species, e.g. blackthorn or holly quicks. New growth that emerges from ground level must be protected by fencing from livestock and weed competition until established.

Only broadleaf species are suitable for coppicing; in general conifers do not regenerate from cut stumps.

#### **Species that will regenerate when coppiced include:**

Hawthorn (*Crataegus monogyna*), Birch (*Betula pendula*), Alder (*Alnus glutinosa*), Willow (*Salix alba*), Poplar (*Populus nigra*), Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Oak (*Quercus spp.*), Hazel (*Corylus avellana*), Sweet Chestnut (*Castanea sativa*), Holly (*Ilex aquifolium*).

### **New Hedgerow Establishment**

#### *Guidelines for Site preparation:*

Burn off a metre strip of vegetation beforehand by using one of the following methods:

- Glyphosate is the preferred option in summer and repeat 4 weeks pre planting.
- At least once pre-planting.
- Cover with black polythene (1m wide) at least for 6 months.

Plough or break up soil in a trench

- 0.6m wide and 0.3m deep
- using plough or mini digger with 25cm bucket

Add well composted FYM or compound fertiliser

Rotavate soil

Mound planting is recommended where drainage is not ideal

Form a potato ridge. Deeper rooting depth leads to better drainage

Avoid water logged, shallow and very exposed sites

Ensure the site has sufficient soil

Kill off grass and weeds beforehand

Avoid planting the hedge too close to a wall or fence

#### *Species selection:*

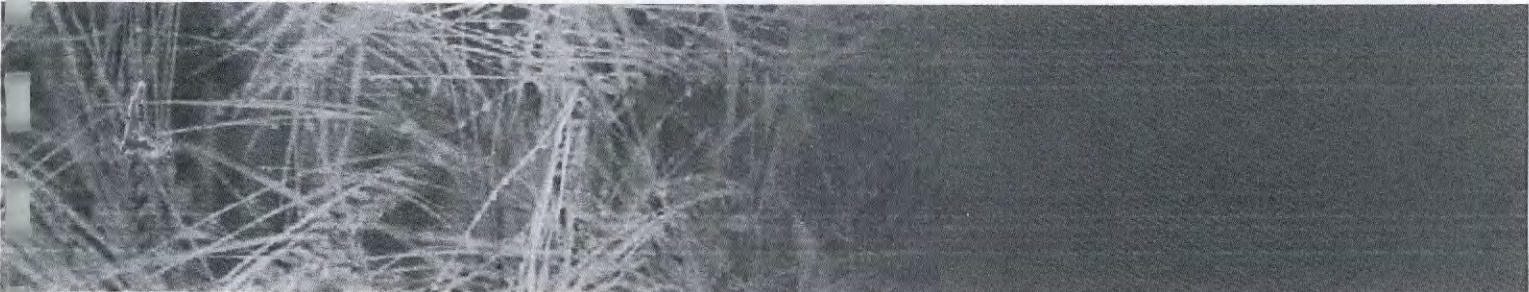
In order to conserve Ireland's genetic biodiversity the species selected should originate from suitable indigenous sources of native seed. Species selection should be considered in the context of the desired function of the hedgerow. A multi-species hedge, will have more wildlife and aesthetic interest while a stockproof hedgerow will require a predominance of thorny species. A stockproof hedge should have a minimum of 80% thorny species.

Select species suitable to the site. A mix of species is more attractive and valuable to wildlife.

Use of native species of Irish origin must be prioritised.

Use hawthorn as the dominant species.

Include other suitable species as desired: Choose from native plants e.g. blackthorn, hazel, holly, spindle, dog rose, crab, guelder rose etc.



Look around you – follow nature’s example.

**Planting Guidelines:**

Plant between November and February

Don’t plant in very wet or frosty conditions

Plant density for a stock proof hedgerow should be 8 plants per metre run.

Plant hawthorn in single rows (at c.140mm centres) or double staggered rows (c.400mm apart and c.375mm between rows).

Plant a multi-species hedge in a single row at suitable plant spacings. Depending on species selection aim for 4- 6 plants per metre run.

Suggested plant density options:

2-8 hawthorn/metre

2-6-beech/ metre

2-5 holly/ metre

Other planting densities depend on species

**After planting care:**

Aftercare is essential for the successful establishment of the newly planted hedge!

Trim back spindly top growth of hawthorn to encourage basal growth.

Fence appropriately to exclude all stock and to protect against rabbits and hares.

Grass and weeds must be controlled

Different control methods:

- o Black polythene
  - o Biodegradable mulches egg wood chippings
  - o Mechanical/manual control
  - o Herbicides applied according to Measure 6
- Replace dead plants at the appropriate time.

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**NATIVE BROADLEAF TREES**

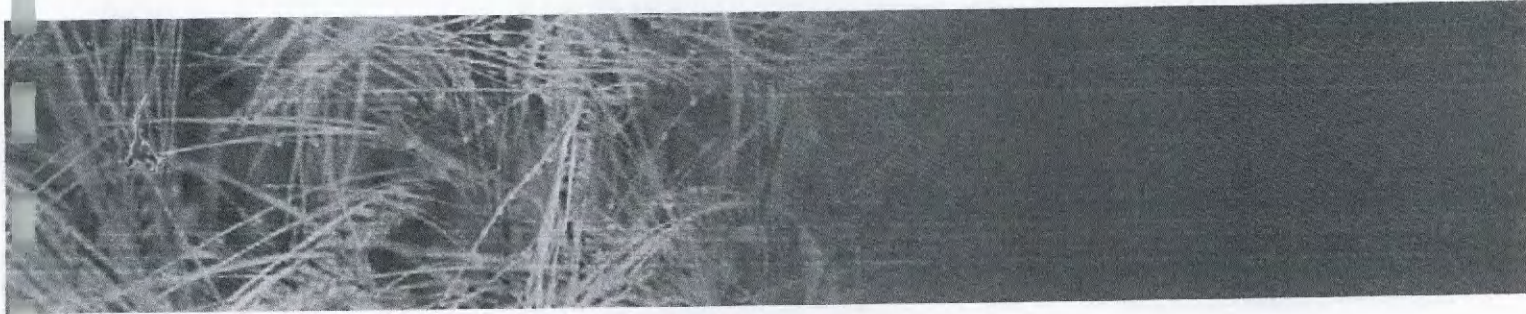
SPECIES	OPTIMUM SITE	CHARACTERISTICS	REMARKS
Pedunculate Oak <i>Quercus Robur</i>	Well-aerated deep fertile loams. Will do well on heavier soils	Slow growing, long lived tree once the climax vegetation over most of the country	Major forest species. One of our few native broadleaved trees. Very high amenity value
Sessile Oak <i>Quercus Petraea</i>	Tolerates less rich and lighter textured soils than Q. robur	Oaks will not produce good timber on excessively drained or sandy soils	Major forest species. Native to Ireland. Now designated as Irish national tree
Ash <i>Fraxinus Excelsior</i>	A very exacting species demanding good soil conditions, preferably sheltered, moist well-drained fertile loam soils	A fast growing species regarded as not being suitable for large scale planting	Major forest species. Native tree.



Wild Cherry <i>Prunus Avium</i>	Fertile deep well-drained mineral soils. Preference for slightly acid soils but will do well on deep loams over limestone	Fast growing, light demanding, requiring considerable space. The only commercial broadleaved tree with attractive blossoms	Major forest species. Native tree. May suffer from bacterial canker and aphid attack
Alder <i>Alnus spp</i>	Common alder is a very hardy accommodating species suitable for wet sites. Good wildlife species. Grey and Italian alders will tolerate and grow well on drier sites. Italian alder is has a preference for more alkaline sites	Fast growing nitrogen-fixing tree. Suitable broadleaf for even the wettest sites	Minor forest species. Common Alder is a native tree. Coppices freely and can be used in mixtures on very infertile sites. Valuable shelter tree
Birch <i>Betula spp</i>	Pioneer species suited to very acid soils and peats	Fast growing, hardy species, withstands exposure and frost well. Useful as a nurse crop in mixtures but must be kept under control or it will smother a slower growing tree species	Minor forest species. Native tree. Young trees coppice freely. May be used as a soil improver. Can be mixed into shelterbelts
Willow <i>Salix spp</i>	Useful species for wet sites and streamsidess	Fast growing useful for conservation and amenity but rarely for timber production. Willow can be used in a variety of ways as a shelterbelt system	Minor forest species. Native tree.
Whitebeam <i>Sorbus Aria</i>	Most fertile mineral soils	Attractive amenity tree also suitable for shelter	Minor forest species. Native tree. Tolerant of exposed and coastal sites
Rowan <i>Sorbus Aucuparia</i>	Suitable for lowland and hill acidic sites. Will tolerate even alkaline sites	Hardy tree suitable for exposed sites. Widely used amenity tree	Minor forest species. Native tree. Offers good support for wildlife

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**NATIVE CONIFER**

SPECIES	OPTIMUM SITE	CHARACTERISTICS	REMARKS
Scots Pine <i>Pinus Sylvestris</i>	Thrives on light textured or sandy soils. Tolerant of acid conditions. Avoid poorly drained or alkaline soils and exposure to coastal winds	A strong, light demanding slow growing tree. Can be used as a nurse species. Unsuitable for high elevations or shelter-belting	Major forest species. Once native but died out, now comes from imported sources. Regarded as the best conifer for both amenity and wildlife. Attracts insects, birds and red squirrels

**OTHER COMMON TREE AND SHRUB SPECIES IN THE IRISH LANDSCAPE AND THEIR CHARACTERISTICS**

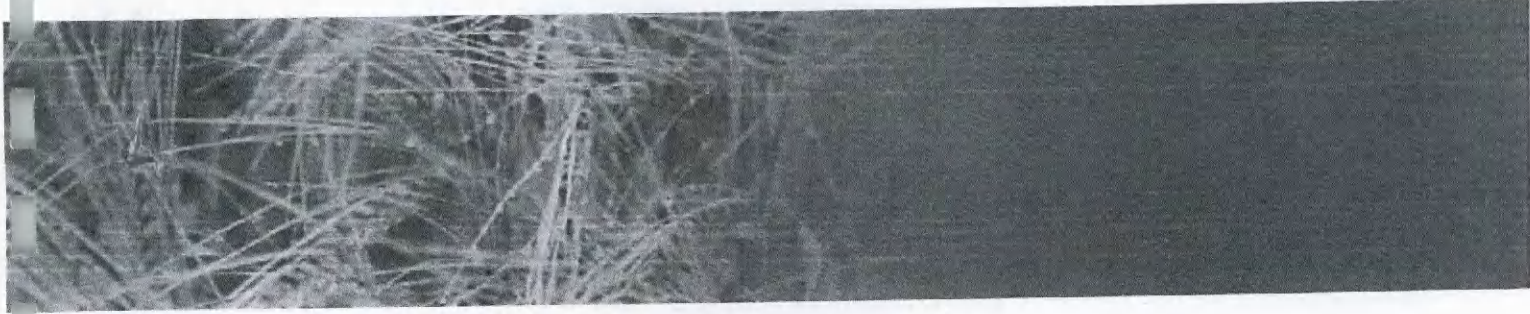
Species	Characteristics/Remarks
Beech <i>Fagus Sylvania</i>	Well drained, loamy, fertile soils with a preference for soils derived mainly from limestone Tolerant of shade when young. Creates dense shade and suppresses ground vegetation as it reaches maturity Major forest species. Non-native tree. Benefits from a nurse on exposed sites. Useful for under-planting. Grey squirrels can be very destructive particularly to young beech
Sycamore <i>Acer Pseudoplatanus</i>	Prefers a moderately fertile free draining soil. Tolerant of calcareous soils Fast growing tree that seeds easily. Withstands exposure and smoke pollution very well Major forest species. Non-native tree. Grey squirrels can be very harmful. A windfirm tree. Rich in wildlife value. Valuable for shelter
Poplars <i>Populus</i> Hybrid clones	Very exacting species requiring deep, well drained moderately fertile sites Very fast growing, light demanding tree. Some species susceptible to bacterial canker, select disease resistant clones only Potentially major forest species. Non-native tree. Offers great prospects as Short Rotation Forestry species for pulpwood, paper and particle board

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Species	Characteristics/Remarks
Red Oak <i>Quercus Rubra</i>	Grows well on poor sandy soils A fast growing tree, less suited to heavy soils Minor forest species. Non-native tree. High amenity because of its red and russet colours in the autumn
Horse Chestnut <i>Aesculus Hippocastanum</i>	Thrives on all except waterlogged sites but has a preference for fertile soils An excellent amenity tree used mainly for avenues or as a specimen tree Minor forest species. Non-native tree
Walnut <i>Juglans spp</i>	Deep, well drained, loam textured, moderately fertile soil. Suitable for well sheltered sites with a southerly aspect J. nigra grows somewhat faster than J. regia but timber may not be as highly figured. Worth pruning to give a clean stem Potentially major forest species. Non-native tree. Abnormal growths called "burr walnut" are much sought after for veneer, an example of diseased or malformed wood being more valuable than healthy timber
Lime <i>Tilia spp</i>	Grows on a wide range of sites, but prefers moist fertile limestone soils Relatively fast growing. Suitable for planting as an amenity tree. Attracts swarms of aphids in summertime causing sticky "honeydew" to cover foliage that drips off to ground vegetation Minor forest species. Non-native tree. Tree flowers are strongly scented and a great attraction for many insects and a rich source of nectar for bees
Norway Maple <i>Acer Platanoides</i>	Prefers a deep, moist, alkaline soil. Tolerates less fertile and drier sites than sycamore. Avoid exposed sites and frost hollows Fast growing tree when young. An attractive amenity tree. Greenish yellow flower makes a beautiful sight in early spring. Brilliant red, green and gold coloured leaves in the autumn Minor forest species. Non-native tree. Grey squirrel can be very damaging

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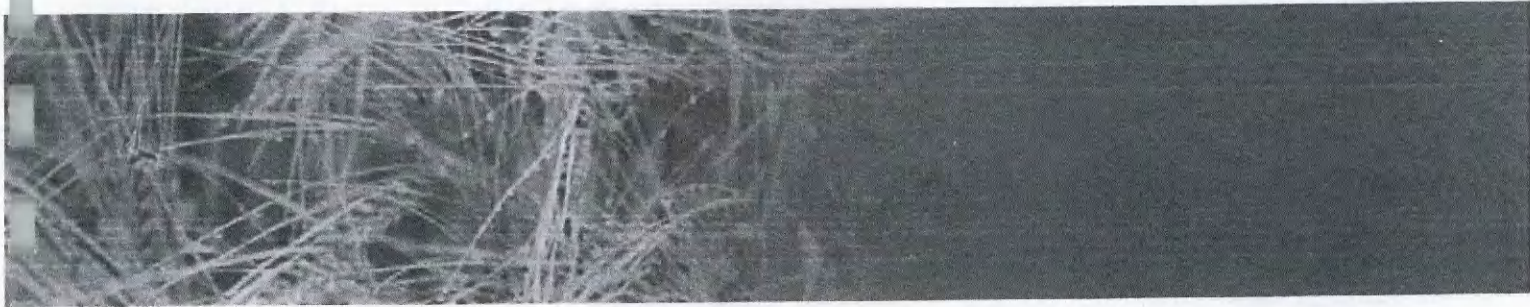
Species	Characteristics/Remarks
Privet. <i>Ligustrum vulgare</i>	Medium sized bushy shrub, partially evergreen, closely related to the hedging species, <i>Ligustrum ovalfolium</i> , a Japanese import. Flowers white, heavily scented followed by small black berries.
Sea Buckthorn <i>Hippophae rhamnoides</i>	Shrub of coastal areas. Will succeed in almost any soil. A dense bushy shrub 1-1.5 m high: branches armed with stout spines. Small green flowers followed on female plants by attractive orange-yellow berries, which are normally avoided by birds. Excellent shrub for maritime exposure.
Snowberry <i>Symphoricarpus rivularis.</i>	A twiggy shrub with small pinkish flowers followed by white globular fruits. Spreads freely by root suckers. The white globular fruits are very striking in the Winter hedgerow.
Dogwood <i>Cornus sanguinea</i>	The straight red stems of this shrub are very conspicuous in hedgerows in Winter. It grows to six foot, has dark - green untoothed opposite arranged leaves that turn dark red in Autumn. The hawthorn scented white flowers are followed by black fruits. Dogwood is common in limey soils and roots readily from hardwood cuttings stuck in Autumn.

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#### NATIVE HEDGEROW SPECIES

Species	Characteristics	Sites
Whitethorn (Hawthorn) <i>Crataegus monogyna</i>	Ubiquitous native hedge plant tough, hardy and fast growing. Withstands hard cutting and laying. Displays great variation in flower hue at blossom time. An important source of pollen and nectar for invertebrates; major bee forage plant.	Tolerant of most soils except where very wet. Does not thrive at high elevations. Susceptible to Fire Blight disease; should not be planted near tree/shrub nurseries or commercial orchards.
Blackthorn or Sloe <i>Prunus spinosa</i>	Quick growing shrub, forming an impenetrable stockproof barrier when well established. Throws out root suckers requiring regular management. Excellent plant for gapping hedgerows. Stands up well to cutting. Can be propagated from rooted suckers. Tends to become bare at the base.	Blackthorn does well on heavy and sandy soils. Salt tolerant, suitable for coastal and exposed situations.
Hazel <i>Corylus avellana</i>	Hazel is very suitable to coppice and lay. It has high amenity and wildlife value: an important early source of pollen for bees. The coppiced stems have many uses.	Hazel does well on loams and mildly acid soils. Not tolerant of wet situations. Good choice for free draining limestone soils.
Holly <i>Ilex aquifolium</i>	Slow growing evergreen with high amenity value. Forming a tough stockproof barrier. Good plant for gapping. Susceptible to frost damage.	Holly will grow on clay soils, sands and gravel. Very tolerant of shade. Will not grow on wet sites. Both male and female plants are required to produce berries.
Gorse (Furze or Whin) <i>Ulex europaeus</i>	Abundant in drier parts of Ireland. Does not form a good stockproof barrier on its own. Should be cut back hard when it gets leggy and thin at the base. Gorse should not be laid but trimmed in late Winter.	Gorse does well on poor light soils. Will grow on very dry and exposed sites where other species cannot thrive. It is salt tolerant and suitable for coastal and exposed sites.



Species	Characteristics	Sites
Willow <i>Salix species.</i>	Willow is a native tree, the many species hybridise readily. The tree is fast growing, producing heavy wood. The plant lends itself to laying. Willows make poor stockproof hedges yet have high wildlife and amenity value. The male flowers, catkins, are an early source of pollen for bees.	Useful for wet sites where species choice is limited. Will tolerate flooding. Can be propagated from hardwood cuttings.
Crab Apple <i>Malus pumila.</i>	A good hedge can be made with crab, it is less impenetrable than Hawthorn or Blackthorn. Should be mixed with other species. Provides good wildlife habitat and has high amenity value.	Suited to free draining fertile soils, will not thrive in heavy cold clays. Crab apple occurs intermittently in hedgerows and where present should be retained and allowed develop to maturity.

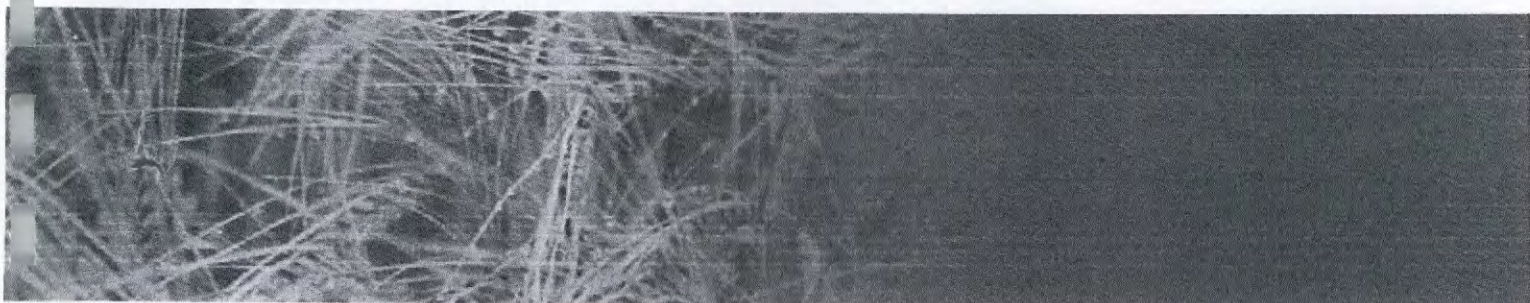
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### NATIVE HEDGEROW SPECIES contd

Species	Characteristics
Elm. <i>Ulmus species.</i> in particular <i>Ulmus glabra.</i>	Wych Elm ( <i>Ulmus glabra.</i> ) is a rare native now only encountered in mountain glens in the North West. English elm ( <i>Ulmus procera</i> ) was reintroduced in Norman times. Elm never attained the importance in hedgerows here as in England. It was originally planted as an ornamental parkland tree. Despite the ravages of Dutch Elm Disease, it is often encountered in hedgerows as suckers that may eventually succumb to the disease. Where present, it should be retained.
Dog Rose. <i>Rosa species.</i>	Dog Rose and other related rose species are a common constituent of hedgerows scrambling through trees and shrubs. Their blossoms and fruit (hips) have high amenity value and are an important source of food for wildlife. Where present they should be retained.
Briars, Blackberry. <i>Rubus species.</i>	Briars often provide extra stockproofing in a hedge. The flowers and fruit provide a wide range of food for wildlife. Blackberry is an important bee plant in Ireland. Briars left unchecked will encroach out into fields by means of tip rooting and should be controlled.
Guelder Rose <i>Viburnum opulus</i>	Handsome hedgerow shrub with high amenity value. Large vigorous shrub with lobed maple like leaves which colour richly in Autumn. The white flowers produced in June and July are followed by crimson fruits which are eaten by birds.
Elder <i>Sambucus nigra.</i>	A ragged, gnarled, small tree common in hedgerows with greyish corky bark and branches containing a soft pith. The white flowers are followed by bunches of purplish fruits. Flower and fruit provide food for a wide rang of wildlife species.
Woodbine, Honeysuckle. <i>Lonicera periclymenum.</i>	Woodbine is a climbing shrub scrambling through hedgerow trees and shrubs. It has high amenity value. The fragrant flowers provide nectar and pollen for insects and are followed by crimson berries readily eaten by birds.

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Species	Characteristics
<p>Clematis. Travellers Joy, <i>Clematis vitalba.</i></p>	<p>A climbing shrub often completely covering hedges and bushes. It climbs by twisting its leaf stalks around other plants. The small insignificant greenish cream flowers attract bees and flies. The masses of feathery fruits so conspicuous in Autumn and Winter give this plant the colloquial name "Old Man's Beard". A shrub that thrives in limey soils. Beautiful shrub of the Autumn hedgerow particularly eye-catching after overnight frost.</p>
<p>Spindle-tree, Pegwood, <i>Euonymus europaeus.</i></p>	<p>Vigorous green stemmed hedgerow shrub occasionally a small tree. The wood is very hard and was used in former times to produce wooden skewers and clothes pegs. The small greenish flowers are followed by eye catching scarlet 4-lobed seed capsules: Spindle or Peg wood is a strikingly beautiful shrub in winter.</p>
<p>Ivy <i>Hedera helix.</i></p>	<p>Ivy is a native evergreen plant with high wildlife value: it provides habitat for insects and nesting sites for birds. It flowers late in the Autumn and is the last important nectar and pollen plant available to insects. The black fruits which ripen in spring are eaten by birds and small mammals, in particular by pine martins. Ivy is not a parasitic plant: the small rootlets put out by the climbing shoots help the plant to adhere to it's support: they have no penetrative powers. In trees, ivy clings to it's host, it does not feed on it, and while the tree is in good health the ivy will be a secondary plant and although ascending the trunk and branches can do no harm. Should the tree decline for any reason and fail to leaf the ivy will take over as is often seen on elm that has succumbed to Dutch Elm Disease.</p> <p>Where necessary ivy should be managed. Ivy may be allowed to develop on some trees within a hedgerow but controlled on others or allowed to grow unchecked for many years and controlled when the growth becomes too heavy. On sound walls ivy is harmless and in fact beneficial, keeping them dry in winter and cool in summer. Walls that are very weak can be pulled down if a weight of ivy has bushed out at the top of the wall and then becomes heavy with snow or rain and susceptible to the pull of strong winds. Clipping obviates this possibility and the life of many walls could be prolonged by a well managed ivy cover. Ivy covered walls should be clipped over in late Spring. If required ivy can be removed from trees and walls by cutting the stem just above ground level and making a second cut at least 10 cm. above the first cut. The resultant detached section of stem should be removed.</p>

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**Species suitable for screening farm buildings, walls etc. under Measure 8**

Suitable tree species can be selected from the species listed in Table 2 above. In addition species from the following can be selected in the mix:

**Deciduous Species:**

Beech (**Fagus sylvatica**), Sycamore (**Acer pseudoplatanus**), Poplars (**Populus Hybrid clones**), Red Oak (**Quercus Rubra**), Horse Chestnut (**Aesculus Hippocastanum**), Walnut (**Juglans spp.**), Field Maple (**Acer campestre**), Norway Maple, (**Acer platanoides**). Lime (**Tilia spp.**)

**Conifers:**

Larch (**Larix spp.**), Corsican Pine (**Pinus nigra var. maritima**), Monterey Pine (**Pinus radiata**), Lawson Cypress (**Chamaecyparis lawsoniana**), Western Red Cedar (**Thuja plicata**), Western Hemlock (**Tsuga heterophylla**), Macrocarpa (**Cupressus macrocarpa**), Korean Fir (**Abies koreana**).

Suitable self clinging plants for use around farmyards include the following.

Ivy: **Hedera species**. Green leafed varieties should be chosen. Ivy is a shade loving plant should not be grown on a South facing wall.

Climbing Hydrangea: **Hydrangea petiolaris**. vigorous, climbs by aerial roots. deciduous.

Virginia Creeper: **Parthenocisus tricuspidata**. vigorous, deciduous.

**Climbers Requiring Support**

Honeysuckle: **Lonicera periclymenum**. needs support to climb.

Russian vine: **Polygonum baldschuanicum**. Very vigorous rampant, twinning plant, needs support to climb.

To screen farm buildings in coastal exposed sites the following species are recommended:

**Trees:**

**Conifers:** Sitka Spruce (**Picea sitchensis**), Lodgepole Pine (**Pinus contorta**), Corsican Pine (**Pinus nigra var. maritima**), Maritime Pine (**Pinus pinaster**), Monterey Pine (**Pinus radiata**)

**Broadleaf trees:** Sycamore (**Acer pseudoplatanus**) Strawberry Tree (**Arbutus unedo**), Willow (**Salix species**). Alder (**Alnus glutinosa**), Holm Oak (**Quercus ilex**). White poplar (**Populus alba**) Elder (**Sambucus nigra**).

**Shrubs:**

**Escallonia** in species and variety, Burnet Roses (**Rosa pimpinellifolia**), **Rugosa** roses, **Hypericum calycinum**, **Griselinia littoralis**, **Phormium tenax**, **Tamarix**, **Viburnum tinus**, **Ulex europeus**, **Eleagnus**, **Fuonymus**, **Fuchsia magellanica**, **Senecio greyii**, **Pittosporum**, **Hebe**, **Olearia species** in particular **O. traversii**, **O. albida**, **O. macrodanta**. **Hipophae rhamnoides**, **Lupinus arboreus**, **Atriplex halimus**.



MOGEELY PIG FARM

APPENDIX 10

DEPARTMENT OF AGRICULTURE  
MAINTENANCE OF SOIL ORGANIC  
MATTER

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## Maintenance of soil organic matter

### Introduction – The Importance of Soil Organic Matter

Soil organic matter comprises all living soil organisms and the remains of previous living organisms in their various degrees of decomposition. Soil organic matter plays a major role in maintaining soil quality as it positively influences a wide range of soil properties such as the provision of nutrients, water retention and release, as well as reducing the risks of soil compaction, surface crusting and soil erosion. The practice of continuous tillage, (i.e. tillage for six years or more), tends to reduce the organic matter content of the soil unless appropriate management practices are implemented to reverse this trend. This decline is a gradual process. In like manner the process of replenishing soil organic matter is slow, but can be achieved through adapted agricultural management practices and the addition of organic materials to the soil.

Increasing soil organic matter will result in a 'win-win' situation with respect to positively influencing soil fertility and quality and maintaining the physical, chemical and biological conditions necessary in sustainable continuous tillage practices. A number of factors influence the rate of decline of soil organic matter levels including soil type and physical properties, climate, topography, vegetation and land management practice. Soils with organic matter levels above 3.4% are not considered to be vulnerable. This equates to a soil organic carbon content of 2%. The conversion factor from soil organic carbon to soil organic matter is approximately 1.72 (i.e., Soil Organic Matter (SOM) = 1.72 multiplied by Soil Organic Carbon (SOC)).

### Requirements under Good Agricultural and Environmental Condition

Applicants for the single payment scheme (SPS), the disadvantaged area scheme (DAS) and REPS 4 are obliged to comply with the provisions of Good Agricultural and Environmental Condition, one of which is the maintenance of organic matter levels in the soil<sup>1</sup>. While the levels of organic matter in Irish soils are in general satisfactory, there is evidence that there are areas of the country where organic matter levels could be considered to be low, i.e. below 3.4% organic matter (2% organic carbon content). Ireland is obliged to put controls in place to monitor soil organic matter levels in the case of the SPS, DAS and REPS 4 applicants. Such controls will only apply on land under continuous tillage.

The Department of Agriculture, Fisheries and Food will identify land that is in continuous tillage for six years or more in vulnerable areas and notify the applicants that declare this land on their 2009 SPS application form. Applicants who are notified must determine the actual organic matter levels in these continuous tillage parcels in 2009 by arranging to have soil samples taken in accordance with the Statutory Instrument 101 of 2009. Should the organic matter percentage be below the threshold value of 3.4% it will be necessary to seek Cross Compliance – Farm Advisory System (CC-FAS) advice on any remedial action as may be considered necessary. Depending on the soil type or ongoing practices, either no further action will be

<sup>1</sup> Helpsheet/Terms & Conditions for the 2009 EU Single Payment Scheme and for the 2009 Disadvantaged Areas Scheme and other 2009 Area-Based Schemes

required or remedial action will have to be undertaken. The CC-FAS report must set out in detail any remedial actions as may be required.

Applicants in other areas who have not been written to but are also undertaking continuous tillage must also monitor soil organic matter levels from 2010 onwards. Where organic matter levels are found to be below the threshold values of 3.4%, the farmer must again seek the advice of a CC-FAS advisor and where appropriate follow the programme of remedial actions. Where necessary these remedial actions must commence in the year following the organic matter sampling.

Remedial action may have to be applied each year until a soil organic matter level of 3.4% or a level deemed appropriate by the CC-FAS advisor has been achieved. Failure to have the samples taken and to provide the results of the analysis or where appropriate failure to contact a CC-FAS advisor and to follow the recommended remedial programme set out in the CC-FAS report may incur a sanction in accordance with the single payment cross compliance rules. Sampling must be repeated every 10 years. All sampling should be conducted in accordance with SI 101 of 2009 and using approved laboratories. One sample must normally be taken for every 4 Ha. However where soil type, cropping history and fertiliser treatment can be shown to be similar, the sample area may be increased to a maximum of 8 Ha per sample.

### **Inspections**

Inspections for this requirement will be conducted as part of the normal GAEC Cross Compliance requirements. On inspection, applicants will be required to provide the soil analytical report showing the organic matter levels and where it is less than 3.4% they must also show the CC-FAS report setting out, where applicable, the programme of remedial actions. From 2010 onwards, the inspecting officer will check that the remedial actions listed in the CC-FAS report are being implemented. DAFF reserves the right to take soil samples and have them analysed where it deems it appropriate.

### **CC-FAS Advisor**

A CC-FAS advisor is a Teagasc advisor or a private agricultural consultant that has been approved by DAFF to deliver cross compliance advice in accordance with Articles 13 to 16 of Council Regulation 1782/2003. The names of the approved FAS Bodies are listed on the DAFF website at [www.agriculture.gov.ie](http://www.agriculture.gov.ie).

### **The CC-FAS Report**

The CC-FAS report is a report prepared and signed by a CC-FAS advisor. It is required when the soil analysis shows one or more samples have an organic matter level below 3.4%. Such sample areas must be dealt with separately in the CC-FAS report. The advisor must take into account the organic matter levels, soil type, soil condition, climate and the intended future cropping including crop rotation where deemed necessary. The advisor should consider if the land use is agriculturally and environmentally sustainable and whether there is a need or not for a change of practice. As the process of building up organic matter in the soil is very slow, the report must set out the remedial action to be taken for a 10-year period at the end of which the organic matter level will again have to be determined by soil sampling. An exception to this requirement is where a soil sample taken before the end of the 10-year cycle shows that the OM levels have recovered to greater than 3.4% or to a level deemed acceptable for that soil type by the CC-FAS advisor. The remedial action can be suspended in this case.

A template report sheet, 'GAEC OM', is available on the DAFF cross compliance web page and from the Cross Compliance Unit in Portlaoise. These reports must be available for inspection.

The applicant must confirm each year that the recommended remedial action was carried out by entering the year and a 'Y' in the box provided for each sample area.

### **How Can I Maintain or Improve Soil Organic Matter Levels?**

Building up soil organic matter is a long-term process but is beneficial to the soil in many respects. Options available to improve organic matter content include the following:

- **Incorporate straw:** Chopping and reincorporation of straw improves organic matter levels.
- **Apply farmyard manures or mushroom compost:** Regular applications of FYM or mushroom compost will gradually improve organic matter levels as well as providing valuable nutrient for plants. However under the nitrates regulations, farmers have to adjust their fertiliser applications to take account of the nutrients in these organic fertilisers.
- **Apply organic fertilisers:** Poultry, pig and cattle manure all add organic matter to soil. Again the nutrients in these fertilisers have to be taken into account under the nitrates regulations.
- **Cover Crops:** Growing green cover in autumn combined with spring crops can help build or maintain soil organic matter particularly where they are ploughed in as green manure. However, best results can be achieved if growing of cover crops is combined with other remedial measures.
- **Crop rotation:** Crop rotation including grass in the cycle may restore organic matter levels depending on the particular circumstances.
- **Reduced Till options:** Min-till, and no-till systems on their own will not significantly increase organic matter levels in soil but will reduce the rate of decline. When combined with other actions such as straw incorporation, green manure, etc. they will help to maintain or increase the organic matter level.
- **Reduce or Eliminate Tillage in the cropping rotation:** Tillage increases the aeration of the soil and causes a flush of microbial action that speeds up the decomposition of organic matter. Tillage can often increase erosion which also removes organic matter.
- **Grass:** Grass based cropping normally increases the level of organic matter in soils. Where organic matter is very low the best way to build up levels again is to return the land to permanent pasture.

## What Are the Benefits of Organic Matter?

Organic matter is a vital component of the soil because of its role in the chemical, physical and biological processes

### Chemical Processes

- **Nutrient Supply:** Organic matter is a reservoir of nutrients including nitrogen and phosphorous that can be released to the soil through the mineralisation process. Each percent of organic matter in the soil represents about 1000kg of organic nitrogen in addition to other nutrients. The gradual mineralization of this nitrogen provides an important supply of crop nutrient requirement.
- **pH Buffering:** Organic matter is a useful aid in limiting pH fluctuations.

### Physical Processes

- **Water Holding Capacity:** Organic matter behaves like a sponge, with the ability to absorb and hold a significant quantity of water. A great advantage of the water-holding capacity of organic matter is that it will release most of the water that it absorbs to growing plants. In contrast, clay can also hold large quantities of water, but much of it is not available to plants.
- **Soil Structure Aggregation:** Organic matter causes soil to clump and form soil aggregates, which improves soil structure. With better soil structure, permeability (infiltration of water through the soil) improves, in turn improving the soil's ability to take up and hold water.
- **Erosion Prevention:** Higher organic matter levels tend to reduce loss of soil by erosion because of better water infiltration through a more stable soil structure. A good soil structure reduces the risk of wind erosion.
- **Compaction:** Higher organic matter levels tend to reduce the risk of soil compaction.
- **Reduces surface crusting:** Higher organic matter levels tend to reduce the risk of soil capping particularly on fine textured soils through an improved soil structure.
- **Reduce Erosion:** Most soil organic matter is in the topsoil. When soil erodes through water movement, organic matter is removed with it. Appropriate tillage practices particularly on sloping soils can reduce erosion and organic matter losses such as contour ploughing.

### Biological Processes

- **Biodiversity:** Soil organic matter plays a fundamental role in sustaining soil biodiversity by providing, for example a source of energy and nutrients for soil microorganisms.

MOGEELY PIG FARM

## APPENDIX 11

# WELL REPORT

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water  
technology  
limited



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Date: 12<sup>th</sup> December 2012

Laboratory Report

Date submitted:

6<sup>th</sup> December 2012

Laboratory Reference

12/6-12-37

Sample:

GW1 PO 790-02

COD

4

pH

7.00

Nitrate

<1

Total Ammonia

0.49

Total Nitrogen

14

Conductivity

442

OrthoPhosphate

0.15

Total Coliform

Nil

Faecal Coliform

Nil

*Results are expressed in milligrams per Litre*

*Kim Sheehan*

Kim Sheehan

Directors:

J.P. Mackey, B.Sc., HDE B. Creedon, B.Sc., B.Sc. (Econ) Ph.D., C.Chem., FICI, MRIC, MICorrT. MIWES, MIEI, MIW

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## APPENDIX 12

# CARCASE REGISTER

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## APPENDIX 13

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SITE SYNOPSIS  
NATURA 2000 SITE 000077

## SITE SYNOPSIS

**SITE NAME: BALLYMACODA (CLONPRIEST AND PILLMORE)**

**SITE CODE: 000077**

This coastal site stretches north-east from Ballymacoda to within about 6 km of Youghal, Co. Cork. Though moderate in size, it has a good diversity of coastal habitats, including several listed on Annex I of the E.U. Habitats Directive.

The site comprises the estuary of the Womanagh River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to the low tide mark. The inner part of the estuary is well sheltered by a stabilised sandy peninsula (Ring peninsula). Sediment types vary from muds to muddy sands in the inner part to fine rippled sands in the outer exposed part. The macro-invertebrate fauna of the intertidal flats is well-developed, with the following species occurring: *Corophium volutator*, *Hediste diversicolor*, *Arenicola marina*, *Macoma balthica*, *Scrobicularia plana*, *Cerastoderma edule* and *Lanice conchilega*. In the more sheltered areas the intertidal flats are colonised by mats of green algae (mostly *Enteromorpha* spp.), with brown seaweeds occurring on the rocky shores of the shingle spits. Common Cord-grass (*Spartina anglica*) has spread within the estuary since the late 1970s.

The main channel is flanked by salt marshes and wet fields, much of the latter being improved for agriculture. The salt marshes are mainly classified as Atlantic salt meadows, with such species as Sea Purslane (*Halimione portulacoides*), Sea Lavender (*Limonium humile*) and Sea Milkwort (*Glaux maritima*). On the lower levels of the marshes, and extending out onto the open sand and mud flats, occur annual salt marsh species such as Glasswort (*Salicornia* spp.) and Sea Blite (*Suaeda maritima*). The salt marshes at the site are of particular note as they are of the scarce 'lagoon' type. They are also of good quality and parts of them are in active growth.

Part of the site is also a Special Protection Area for birds; the main interest of the area lies in its waterfowl, with flocks of up to 20,000 regularly present during winter (e.g. 1995-96 peak = 19,725). A total of 107 wetland species have been recorded from this site. Maximum figures for the four winters 1994/95-97/98 show that Golden Plover, a species listed under Annex I of the Birds Directive, almost reached internationally important numbers (9,100) and that the Bar-tailed Godwit, another Annex I species, was present in nationally important numbers (494). Eleven other species also occurred in nationally important numbers: Teal (688), Ringed Plover (163), Grey Plover (504), Lapwing (3800), Sanderling (108), Dunlin (3,373), Curlew (1,378), Knot (280), Redshank (300), Black-tailed Godwit (422) and Turnstone (144). Several additional species occur in regionally or locally important numbers.

Much of the land adjacent to the estuary has been reclaimed and is subject to intensive agriculture, with cattle grazing and silage being the most common land uses. However, many of these fields remain marshy and are important feeding and roosting

areas for wildfowl, Golden Plover and Lapwing. The most serious threat to the site is water pollution, primarily from slurry spreading.

This site's conservation value derives largely from the presence of a number of important coastal habitats listed in Annex I of the E.U. Habitats Directive. But, there is also considerable ornithological interest; Ballymacoda is one of the most important bird sites in the country and supports a higher number of waders than any other Cork estuary of its size. It also contains important numbers of the Golden Plover and Bar-tailed Godwit, two Annex I Bird Directive species, and nationally important numbers of eleven further bird species.

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8.10.2001



- County Waterford -

**Protected Structure(s):  
BALLYNACORRA**  
00517, 00519 - 00523.

**Protected Structure(s):  
CLOYNE**  
00513, 00586 - 00587,  
00592, 00848 - 00849.

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