Manure Standards

Manure Standards WP2

Template for a farm survey on manure management

Questionnaire for swine farms

Farm name: _____

Manager: _____

Location: _____

Date: _____

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1. LIVESTOCK REGISTER FOR THE SEASON (normally 12 months)

1.1. Livestock numbers and specifics (per manure handling line)

Intensive and AFC calculation	
Livestock	**Total livestock number**
Slaughter pig	
Weaners	
Sows	

1.2. Production

Intensive and AFC calculation			Only for AFC calculation		
Slaughter pig					
Pigs number per batch, animals produced			**Outside period**		days/year
Starting weight		kg	**Outside period**		hours/day
Final (delivery) weight		kg			
Starting age		days			
Down time between batches		days			
Weaners					
Weaners number, animals produced			**Outside period**		days/year
Starting weight		kg	**Outside period**		hours/day
Final weight		kg			
Starting age		days			
Sows					
Sows numer (year sows)			**Outside period**		days/year
Piglet number per year sow			**Outside period**		hours/day
Piglet body weight at weaning		kg			

2. DIET COMPOSITION - FEED TYPE AND QUALITY FOR THE SEASON (normally 12 months) TMR calculation (according to the number of feeding groups)

2.1. Slaughter pig

				Unit may be variable (g/kg FM; g/kg DM; etc.)			Needed only if the DM digestibility is not known			Period length
Feed	**kg/day per animal**	**DM %**	**DM digestibility %**	**CP %**	**P %**	**K %**	**Ash %**	**OM %**	**OM digestibility %**	**Days in the group**
Phase 1 – Age (in days): from ..... to										
Phase 2 – Age (in days): from ..... to										
Phase 3 – Age (in days): from ..... to										
Phase 4 – Age (in days): from ..... to										
Phase 5 – Age (in days): from ..... to										

DM – dry matter, OM – organic matter, CP – crude protein

2.2. Weaners

				Unit may be variable (g/kg FM; g/kg DM; etc.)			Needed only if the DM digestibility is not known			Period length
Feed	**kg/day per animal**	**DM %**	**DM digestibility %**	**CP %**	**P %**	**K %**	**Ash %**	**OM %**	**OM digestibility %**	**Days in the group**
Phase 1 – Age (in days): from ..... to										
Phase 2 – Age (in days): from ..... to										
Phase 3 – Age (in days): from ..... to										
Phase 4 – Age (in days): from ..... to										

Phase 5 – Age (in days): from …… to ……										

DM – dry matter, OM – organic matter, CP – crude protein

2.3. Sows

				Unit may be variable (g/kg FM; g/kg DM; etc.)			Needed only if the DM digestibility is not known			Period length
Feed	**kg/day per animal**	**DM %**	**DM digestibility %**	**CP %**	**P %**	**K %**	**Ash %**	**OM %**	**OM digestibility %**	**Days in the group**
Free and gestation period - Phase 1										
Free and gestation period - Phase 2										
Free and gestation period - Phase 3										

Lactation period - Phase 1										
Lactation period - Phase 2										

DM – dry matter, OM – organic matter, CP – crude protein

3. HOUSING SYSTEMS FOR THE SEASON SPRING ……../SPRING …….

3.1. Animal housing

3.1.1 Keeping technology

	Slaughter pigs	**Weaners**	**Sows** (free and gestation period)	**Sows** (lactation period)
Slatted flor				
Solid flor				
Deep litter				

3.1.2 Pen's system

		Slaughter pigs	Weaners	**Sows** (free and gestation period)	**Sows** (lactation period)
Slatted flor	Pen size				
	No. pigs per pen				
Solid flor	Pen size				
	No. pigs per pen				
Deep litter	Pen size				
	No. pigs per pen				
Other (describe)					

3.2. Bedding material (per manure handling line)

Manure handling line	**Annual consumption** (m^3)	**DM** %	**Total N** (kg/t)	**Soluble N** (kg/t)	**P** (kg/t)	**K** (kg/t)	*** Specify crop species**
Straw *							
Sawdust or wood shavings							
Peat							
Sand							
Rubber mat							
Other*							

* - Please specify, **- If own data available

3.3. Removal frequency from barn to storage (needed only if deep litter manure system is used)

Manure handling line	**Slurry system**		**Solid system**	
	Manure channel	**Cross channel**	**Manure channel**	**Cross channel**
Frequency (times/day)				
Other (please, specify)				

3.4. Additives to Manure / Slurry / Liquid waste

Additional substance		Approx. volume / quantity	Frequency	Notes
Rainwater from roofs**	Yes/No			
Water (washing, rinsing) *	Yes/No			
Other (please specify)	Yes/No			
Would it be possible to measure by installing flow meters on specific water lines?				Yes / No

* from rinsing milking areas, passageways etc., ** may be given as a water volume in m3 or as a roof area in m2 - please specify

4. MANURE STORAGE FOR THE SEASON (normally 12 months)

4.1. General questions

Liquid manure / Slurry

Is all manure stored Yes / No
If no, how is it disposed _____
How much is exported or sold _____(%, t)
Is manure imported or bought Yes / No
How much is imported or bought _____(%, t)

Solid manure

Is all manure stored Yes / No
If no, how is it disposed _____
How much is exported or sold _____(%, t)
Is manure imported or bought Yes / No
How much is imported or bought _____(%, t)

4.2 Liquid manure / Slurry storage

		Barn 1	Barn 2	Barn3
Pumping pit	Yes/No			
	Volume	(m^3)	(m^3)	(m^3)
	Frequency emptied			
Storage		**Storage 1**	**Storage 2**	**Storage 3**
	Type of storage (tank, lagoon, other)			
	Primary matter stored (slurry, urine, dirty water)			
	Storage area (m^2)			

	Volume (m^3)			
	Minimum storage capacity (months)			
	Number of animals served			
	Covered Yes/No			
	Roof /crust / other			
	Distance from barn			
Mixing	**Pump / propeller / other**			
	Time	(hours/day)	(hours/day)	(hours/day)

4.3. Solid manure storage

Concrete pad Yes / No

Number of concrete pads in the farm _____

Pad characteristics	Pad 1	Pad 2	Pad 3
Amount of solid manure stored [%]			
Distance to storage [km]			
Seepage collected			
Minimum storage capacity [Months]			
Heap height [m]			
Floor area [m^2]			
Storage volume [m^3]			
Covered [Yes / No]			

`

Field heap Yes / No, Number of field heaps in the farm _____

Pad characteristics	Field heap 1	Field heap 2	Field heap 3
Heap r area [m^2]			
Heap height [m]			
Distance to storage [km]			
Covered [Yes / No]			

5. FARM CHARACTERISTICS FOR A GROWING SEASON (normally 12 months)

6.1. General farm questions

Mean annual air temperature for ……. and…… _____°C

Mean annual precipitation for …… and ……. _____ mm

Field ID	Crop	Area ha	Soil status (if available)		
			N*	P**	K**
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

* - plant available ; ** - Expressed as elemental form

6. MANURE QUANTITY AND QUALITY FOR THE SEASON (normally 12 months)

Ex- barn or Ex-storage*
Analysis performed — laboratory analysis / farm analysis
Date of analysis _____
Analysis frequency _____
Has quality changed over time? _____
Stage of manure sampling* — ex housing / ex storing
* Circle the correct answer

Total quantity of manure produced** t/yr or m^3/yr		Volume weight kg/m^3	DM %	pH	TN (kg/t)	NH_4-N (kg/t)	TP (kg/t)	P_{inorg} (kg/t)	TK (kg/t)	Ash %
Solid										
Semi-solid										
Slurry										
Liquid manure /urine										

7. MANURE APPLICATION FOR A GROWING SEASON (normally 12 months)

7.1. General question

Total field area available at the farm for manure spreading _____ha
Portion of manure spread on fields as fertilizer _____%
Amount of manure exported off-farm _____tonnes
Use or fate of exported manure_____
Soil nutrient analysis before spreading Yes / No

7.2. Application of fertilizers and manures to fields (including permanent grasslands and meadows) for growing season (normally 12 months)

Field ID	Crop type	Field area (ha)	Planned fertilization (manures + mineral)			Manures						Mineral fertilization			Expected maincrop yield (t/ha)	Achieved maincrop yield (t/ha)
			N (kg)	P (kg)	K (kg)	Type[1]	Application rates (t/ha)	Distance from storage	Top dressing [2]	Spreading technique[3]	Incorp-oration[4]	N (kg)	P (kg)	K (kg)		
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																

1) Slurry / urine / solid / semi-solid and animal type

2) Application in growing crop (check if yes)

3) Broadcasting / band spreading / injection

4) Time between application and incorporation: 0 (immediately), 1 (within 4hrs), 2 (between 4-24hrs), 3 (after 1 day), No (no incorporation)

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7.3. Spreading equipment use

Transport of liquid manure and/or slurry	**Farmer's own** Yes / No	**Number of tanks**	**Make model description / Volumes**
Slurry tanks			
Slurry hauling truck			
Umbilical system			
Irrigation			

Spreading of liquid manure and/or slurry	**Farmer's own** Yes / No	**Volume** [m^3]	**Spreading width** [m]
Buffer tank on field			
Band spreaders			
Injector			
Broadcaster			
Other			
Spreading of solid manure	**Farmer's own** Yes / No	**Load** [t]	**Spreading width** [m]
Broadcaster			
Incorporation method			

8. FARMS WITH MANURE PROCESSING FOR THE SEASON (normally 12 months)

8.1 Portion or quantity of manure processed / treated

Solid _____

Slurry _____

Liquid _____

Does processing occur **before** or **after** storage? _____