

Data Sheet



Source reduction and slurry treatment

Data sheet nº 1

ACTION B1. WATER MANAGEMENT

1. What does make a careful water management?

A key element in the slurry environmental management is the source reduction of its volume. Therefore, we must improve the water management, because it is mixed with slurry, increasing his volume. Good water management involves an improvement of the yields production and costs reduction.

2. Background

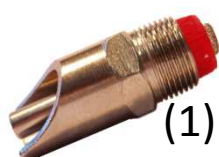
Water volume to management comes mostly, in essential order, from drinking water of animals, cleaning water and cooling water. Water consumption depends on several factors, ranging from environmental factors (temperature, humidity and ventilation), drinkers facilities and management (type, volume, height, tilt, location, balance between the number of drinkers and the number of animals, etc.), to the type and presentation of food, the amount of water, among others.

3. Objective

Laboratory characterization of pig nipples drinkers to know the optimal working conditions both individually and collectively. In a second phase, the actual reductions in water consumption will be evaluated when the drinkers improvements are implemented in commercial farms.

4. Location

The drinkers evaluation, and their physical characterization, will take place in the Laboratory of Animal Production of the University of Lleida. With the information obtained some data sheet, which contained descriptive data and flow results obtained at different pressures in a water circuit, will be developed. Drinkers were classified into 4 types: duckbill (1), spout (2), ball (3) and cylinder (4).



5. Experiment design

5.1 Drinkers and water circuit laboratory characterization

- Research and contact with several drinkers distributors and manufacturers.
- Selection and compilation of technical data provided by the manufacturer.
- Drinkers characterization (23 types):
 - a) Drinker is taken to pieces and material, dimensions and regulation are described.
 - b) The force exerted by drinkers spring is evaluated.
 - c) Outflow water is measured at different pressures (0,5 to 4 bar).



Individual characterization circuit



Dynamometer with tensioner

- A drinking line operation is simulated to assess their group behavior and look the pressure effect in drinkers flow in a circuit when you are using drinkers simultaneously.



Drinkers circuit

5.2 Assessment of water management "in situ" in fattening pig and isowean farms.

- Farms selection.
- Farms characterization (facilities, feeding, and work system).
- Monitoring for a year without any modification.
- Farms selection to make improvement in water management.
- Implementation of the proposed improvements.
- Monitoring of farms where there have been changes.
- Analysis of the results obtained before and after of proposed modifications.

6. Presentation of results

Laboratory results:

- They are displayed in a descriptive sheets for each type of drinker.

Acolló B1: Caracterització d'abeuradors de porcí

Dades comercials
 Casa Comercial:
 Nom comercial de l'abeurador:
 Destinació: Engreix Transició Mares

Dades tècniques que ofereix el fabricant:

- Acceda:
- Pressió de treball:
- Cabal de treball:
- Altres dades:

Descripció física
 Material abeurador:
 Plàstic
 Alumini
 acer inoxidable

Dimensionament:

Imatge lateral	Esquema dimensional
Imatge frontal	
Imatge del detall	

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Anàlisi de treball

Fotos peces desmuntables

Part	cap	clot
Imatge		

Dades tècniques de treball

Pressió (Bar)	0,25	0,6	1	1,6	2	2,6	3	3,6	4	4,6	6	6,6	8	8,6	7
Cabal Mitjana (l/min)	0,8	5	9	1	1	1	1	1	1	1					
Std Err															

Gràfiques

- Drinkers pigs characterization report and a laboratory study performance will be drawn"

Commercial farms results:

- Monitoring data sheet for water management will be generated.
- An information pack on how you should make water management in pig farms will be prepared.

7. Implications

To optimize the use of drinking water in pig farms will be greatly important to select the most suitable type of drinker according to installation of water conditions (flow, pressure losses in the circuit...) and the characteristics and technical performance thereof. We must not forget the location and elevation of the drinker.