

GOTA: Guide for the Optimisation of the Use and Treatment of Drinking Water for Fattening Calves

Summary

Water is key to the future of human and animal activity, as it will be an increasingly limited resource and its quality is expected to reduce in the coming years. It is estimated that there will be an increase in the demand for drinking water due to the growth of the human population and the consequent increase in agricultural production required to supply people with food, and also due to changing rainfall patterns caused by climate change (Doreau et al., 2012). There are various methodologies used to calculate water needs, each one producing a different final value, but the most accepted method states that producing 1 kg of beef requires 15,415 l of water (Mekonnen & Hoekstra, 2012). This figure is questionable and a value should be provided in accordance with our production system, given that efficiency values, water consumption values, and the slaughter age of the animals have been assumed. Water quality is getting worse. Water quality can be defined in terms of its organoleptic, physical and chemical and microbiological aspects. There are two aspects that are of particular interest in terms of decreasing quality: nitrate contamination and microbiological quality, in addition to possible treatments to improve the situation.

What actions can be taken and where?

- a) Determine the consumption of water in the various fattening phases (consumption curves in accordance with age and time of year). Adjust the supply to the demand. Contribute data to calculate the water footprint.
- b) Consumption: reduce wastage by assessing the type and number of drinking troughs.
- c) Determine its optimal quality: nitrates.
- d) Study optimal water purification treatments: effect on consumption, efficiency.

Objectives

The ultimate aim of the GOTA project, as its name indicates, is to prepare a Guide for the Optimisation of the Use and Treatment of Drinking Water for Fattening Calves.

Its Catalan acronym, GOTA, translates as drop, symbolising the value of a drop of water in today's world. The intensive cattle fattening sector is aware that water is an increasingly scarce resource and although it is the most important nutrient (it is essential for life and it limits feed consumption), it has not been a priority for the sector until now.

Description of initiatives outlined in the project

To achieve this goal there are four specific objectives that need to be met:

- a) Determine the water consumption in the various fattening phases (consumption curves in accordance with age and time of year).
- b) Optimise consumption: maximise consumption and reduce wastage by studying the design and number of drinking troughs.
- c) Determine its optimal quality (nitrates).
- d) Study optimal water purification treatments.

Moreover, the data may be used in the future to estimate the water footprint of the Catalan cattle fattening system. It is expected to be lower than the footprint estimated on the global level.

Expected results and practical recommendations

With the aim of making progress at sector level (fattening calves), the GOTA project will produce

- data to enable the calculation of the water footprint.
- a practical guide for the optimisation of the use and treatment of water in the sector.

Task force leader

Entity: **CORPORACIÓ ALIMENTARIA GUISSONA**

Contact e-mail:

josep.ribo@bonarea.com

Typology of entity:

Agri-food industry

Task force coordinator

Entity: **ASSOCIACIÓ D'EMPRESARIS DE BOVÍ D'ALCARRÀS**

Contact e-mail:

gestio@alcarrasbovi.net

Typology of entity:

Agri-food company

Other task force members (grant beneficiaries)

Entity: **NANTA, SA**

Contact e-mail:

j.riera@nutreco.com

Typology of entity:

Agri-food company

Entity: **SOLUCIONES INTEGRALES PARA LA NUTRICIÓN**

Contact e-mail:

tatje@sinual.com

Typology of entity:

Agri-food company

Other task force members

Entity: **ASFAC**

Contact e-mail:

direccio@asfac.org

Typology of entity:

Entity: **ASOPROVAC CATALUNYA**

Contact e-mail:

catalunya@asoprovac.com

Typology of entity:

Entity: **IRTA**

Contact e-mail:

maria.devant@irta.cat

Typology of entity:

Entity: **SETNA NUTRICION SAU**

Contact e-mail:

joangrau@setna.com

Typology of entity:

Subject area(s) of application

Animal husbandry and welfare
Water management

Geographical area(s) of application

Province(s)

Tarragona
Lleida
Girona
Barcelona

Region(s)

Bages
Pla d'Urgell
Vallès Oriental
Noguera

Garrigues
Osona
Segrià

Dissemination of the project *(publications, conferences, multimedia...)*

The main dissemination element will be the presentation of the GOTA guide. An Annual Technology Transfer Plan (PATT) seminar could also be organised by the parties responsible for disseminating the project. Moreover, the content of the GOTA guide will be broken down in the form of EIP Abstracts (10 to 20, depending on the results) in order to share them with the EIP-AGRI and thereby increase the visibility of the project on the international level.

Project website

More information on the project

Project dates

Starting date (month-year): June 2018

Completion date (month-year):

Current status: *Underway*

Budget approved

Total budget: €201,400.00

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Resolution ARP/1868/2017, of 20 July, calling for applications for grants for the year 2017.

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