

Brewers' Spent Grains for Cattle Feeding

Dr. Josep Juanbaro* *SDRCA – Barcelona (Spain), Nicaragua 139A, 3, 1, 08029 Barcelona, Spain*

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***Corresponding Author:** *Dr. Josep Juanbaro, SDRCA – Barcelona (Spain), Nicaragua 139A, 3, 1, 08029 Barcelona, Spain, Email: info@sdrca.es*

INTRODUCTION

Vallfogona de Balaguer (Noguera County) has about 1.884 inhabitants, including 3 other aggregates: la Ràpita, l'Hostal Nou and la Cudosa. Nowadays it is one of principal milk production area from the Catalan lands.

Many things have arrived to modify not only personal life, but also from the cows. 50 years ago, the farmers had practically devoted their time for familiar living, being the commerce of relatively low incomes.

In this moment all could be of higher magnitude. Lleida farmers were divided in two: the northern lands (mountain) and southern territories (plains). Northern people choose brown cows. Vallfogona de Balaguer enjoys from enormous territories to prepare forage, but needs to buy nutrition components abroad.

There is a crossing between farmers and the food industry such as beer production. Breweries prepare beer from malt. After this stage, the Brewers' Spent Grain is the insoluble part from maceration. This material is very rich in protein (just below 25%, dry), but there are some other parts (polysaccharides) for ruminants including of course cows.

Experimental

Accurately dried BSG gives the following contents:

- _cellulose, 180 g / kg
- _hemicelluloses, 246g / g (only arabinoxylans)

- _starch, 68 g / kg
- _soluble sugars, 11 g /kg
- _fats, 83 g / kg
- _nitrogen matters, 250 g/ kg
- _mineral matters, 39 g /kg
- _other without nitrogen, 123 g / kg (only lignine)

Breweries do not permit to store BSG. Trucks go to farmers as soon as possible in order to avoid infection of the plant. BSG exits from reactors at 74°C

DISCUSSION

It is not unusual to employ *lactobacillus* as soon as possible in order to make stable a silo of every kind of forage, but not for BSG because lactobacillus dies at 74°C

The function of *lactobacillus* is to achieve pH 3.5 in all part of the silo.

This problem disappears by using food grade H₃PO₄ in order to go to pH 3.5

RESULTS

A very stable and compact silo is obtained, typical infections are avoided. Cows are in a good state of health. Quality of milk is good as usual. It is possible to check the results obtained from the farm La Saireta (Vallfogona de Balaguer, Lleida).

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