



# APPLICATION REPORT Food & Beverage

## Mass flow measurement of pet food flavours and sebum

- Precise dosing of ingredients in the manufacture of different pet foods
- Reliable and repeatable measurement for consistent product quality
- Installation in a vibrating environment



### 1. Background

Agrofeed, founded in Montevideo, Uruguay, in 1989, is specialised in the production of pet nutrition. The company was the first to apply extrusion technology to pet production, which enabled them to become Uruguay's first manufacturer of different premium foods for cats and dogs. Investment in leading edge technology allows the company to maintain the high quality standards of their products.



Pet food production

### 2. Measurement requirements

The production process involves two volumetric systems with an intermediary container from where the two main liquid ingredients, i.e. sebum and a mixture of vitamins and minerals, are sprayed over a dry cereal mixture. The process runs 24/7 and requires precise dosing: Adding too little additives and the complete batch has to be rejected, adding too much and the manufacturing cost increases dramatically.

These precious additives had been previously measured volumetrically by way of weigh and fill machines installed on top of a metallic structure, in a vibrating environment. These systems, however, failed frequently and proved to be too unreliable and expensive as they caused a lot of product loss, downtime and maintenance. The customer therefore decided to replace the old systems by flowmeter technology.



Volumetric systems with intermediary container



## 3. KROHNE solution

Agrofeed decided on 2 OPTIMASS 6400 C Coriolis mass flowmeters for dosing the liquid ingredients into a mixer to combine them with the dry ingredient. The flowmeters were easily configured for the production of the standard as well as premium products and their changing dosing requirements.

The KROHNE devices are able to measure changes in density and temperature so the liquid-based ingredients can be kept in recirculation until uniformly sprayed over the dry cereal mixture.

As for the compact installation of the meters only minimal pipework changes were required. Despite continuous vibration due to pumps and mixing machinery, the OPTIMASS 6400 guarantees a stable and repeatable measurement unaffected by these demanding conditions. Thanks to their crosstalk immunity, the two mass flow meters can operate in close proximity.



Unaffected by vibrating environment: OPTIMASS 6400 C



Dosing of liquid sebum and vitamin mixture

## 4. Customer benefits

Agrofeed is very pleased with the OPTIMASS 6400 which has solved the problems of production disruption or costly product wastage. There is a continuous monitoring of additives and sebum. Significant measurement errors or even the failure of the measuring system no longer occurs.

## 5. Product used

### OPTIMASS 6400 C

- Twin bent tube Coriolis mass flowmeter for dosing applications in pet food production
- Entrained Gas Management (EGM™): continuous measurement even with gas concentrations from 0...100% and sudden changes in the gas content
- Optimised flow divider for minimum pressure loss
- Suitable for hygienic applications (EHEDG, 3A certified)
- Communication: HART®, FOUNDATION™ fieldbus, PROFIBUS® and Modbus
- Modular electronics concept



### Contact

Would you like further information about these or other applications?  
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