

Industrial validation of an ozone based CIP system for dairy industries

workshop

13th December 2012

ainia, Parque Tecnológico de Valencia. C. Benjamín Franklin 5-11

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Hygienic standards are a main concern in dairies. Some of the most important cleaning tasks are those related to the washing of closed equipment where Cleaning In Place (CIP) systems are of common use. CIP are characterized by automatic cleaning programs based on a succession of several solutions of water, cleaning chemicals and disinfectants that are discharged together with large amounts of water to rinse out residual chemicals. So health and environmental concerns are supporting the need for alternative sanitation technologies.

Ozone is an effective and proved sanitizing agent over a wider spectrum of micro organisms than conventional disinfectants and doesn't generate chemical residues. LIFE OZONECIP was a Demonstration Project (LIFE05 ENV/E/000251), which focused on the reduction of the environmental impact of CIP operations by using ozone. This project was focused on winery, dairy and brewery sectors and it showed, at pilot scale, that comparable hygienic efficiency could be achieved with ozone CIP systems, reducing the amount of water used/discharged and the organic load discharged by 50% while achieving similar disinfection and cleanliness efficiency.

The ECO3CIP (2010-2013) project (ECO/09/56045/SI2.564671) deals with the **first industrial application of an ozone based CIP system in a dairy company** and its validation in technical and economic terms at industrial level.

The partnership is composed by **ainia** technological center as coordinator of the project, **Esnelat** a dairy industry, **Xylem** as expert on ozone technology and **Instalaciones Grau** as expert on CIP systems.

Currently a ozone based CIP plant is working at Esnelat's facilities and its performance is being assessed compared to conventional cleaning protocols at industrial scale. This event summarizes 6 years of research and development on this technology application, shows the first big scale industrial ozone cip working in a dairy (still under assessment) and brings together different stakeholders in order to contribute to the implementation of new ecotechnologies that meet environment and economic growth.



agenda

9.15 *Welcome*

9:30 **Review of ozone applications in food industry**

Frédéric Violleau

Enseignant-Chercheur. Adjoint de la directrice du département Sciences Agronomiques et Agroalimentaires. Ecole d'Ingénieurs de PURPAN. TOULOUSE (France)

Coordinator of the International Ozone Association-EA3G Agri Food Task Force

10.00 **Overview of Ozone technology**

Concha García Pedraz

Product Manager Ozone and DAF. Xylem inc.

10.30 **Final Results of LIFE Ozonecip Demonstration Project Project. The environmental problem. Environmental benefits.**

Irene Llorca

Técnico del departamento de Calidad y medio ambiente de ainia

11.00 **Integration of ozone and clean in place technologies.**

Fernando Risueño

Técnico de Instalaciones Industriales Grau.

11.30 *Break*

12.00 **The ECO3CIP project. Presentation of the first industrial plant. Ongoing work.**

Alberto Larrauri

Director de Calidad e I+D de IPARLAT

12.30 **Ozone based CIP as a Best Available Technology**

Albert Canut

Técnico del departamento de Calidad y medio ambiente de ainia

12.45 **Visit to Clean in Place Pilot Plant (Used in LIFE Ozonecip)**

13.15 **Questions and debate**





AGREEMENT NUMBER- ECO/09/256045/SI2.564671
CIP Eco-innovation. First Application and market replication projects