


TECHNOLOGY FACTSHEET 1

Service	What is	Application	Field of application	Equipment
F2F Traceability Informative System 	<i>RFID and WSN for supply chain monitoring and product traceability</i>	<i>An IT platform (F2F Food Information System) allows SMEs in the food & drink industry to identify and trace food information along the supply chain from the producer (farm) to the end consumer (fork).</i>	<i>Development of demonstrators in different sectors: fish (2), shellfish (3), meat (2), cheese (4), wine (2). Application in farm, logistics, processing, warehousing, distribution, retail and final consumer.</i>	<i>RFID tags, antennas, readers, handheld devices, sensors, webservice platform.</i>
Improvements			Results	
<ul style="list-style-type: none"> • Seeking information about a specific product batch became easier (paper documentation replaced with electronic collection of data); • The process to enter data in the system got faster (manual writing of data replaced with RFID labels); • Customers awareness about quality information on package regarding the production process has disruptively increased; • F2F information system improves products uniqueness compared to competitors (traceability and cold chain data directly related with the product) 			<ul style="list-style-type: none"> - Reduced data errors in production (-86%) - Reduced time for collecting orders, sorting products, packing and labelling (-50%) - Reduced time and costs for recall /shipping errors (-40%) - RoI after 5 years = 72% 	

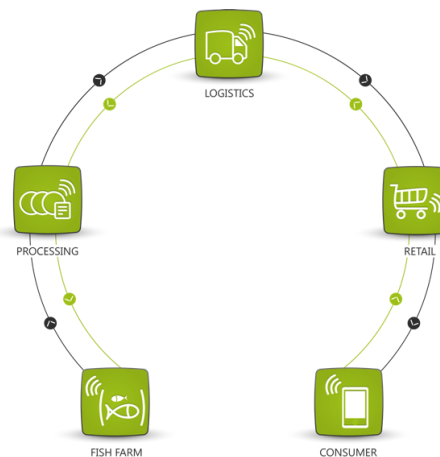
Innovazioni tecnologiche trasferite dal mondo della ricerca alle aziende agroalimentari TF1

© Marco Battistella, t²i - trasferimento tecnologico e innovazione s.c.a r.l.

INNOVATION FOR AGRO-FOOD TRACEABILITY

Benefici del sistema informativo F2F

- Raccolta in tempo reale delle informazioni di ogni lotto di produzione
- Monitoraggio della catena del freddo e di altri aspetti ambientali
- Gestione efficiente e monitoraggio del magazzino
- Comunicazione ai clienti di dati di tracciabilità per singola confezione
- Valorizzazione dell'unicità e della qualità.



TECHNOLOGY FACTSHEET 2

Service	What is	Application	Field of application	Equipment
Energy efficiency in milk processing	<i>Re-design of the dairy industry for sustainable milk processing</i>	<i>Milk processing, sustainability, heat and power generation, waste water, solar and waste heat, on-site produced biogas or other renewable fuels.</i>	<i>Analysis and optimization of the whole milk process chain with regard to energy and water consumption. Development and evaluation of innovative technologies tested under real life conditions in 5 dairies.</i>	<i>New concepts and technologies for the supply of heat, cold and power, LCA and decision making tool, exergy-based analysis.</i>

Improvements	Results
<ul style="list-style-type: none"> <i>new technologies for chilling, heat generation and distribution in dairies</i> <i>membrane filtration for an innovative pre-concentration of milk on-farm</i> <i>new concepts for low temperature drying of milk</i> <i>classifying waste-stream treatments for water savings & energy production</i> <i>Life Cycle Assessment of the dairy chain</i> <i>exergy-based analysis to assess potential of energy and water savings</i> 	<ul style="list-style-type: none"> <i>- Reduced water and energy demand in the dairy (-30%)</i> <i>- Waste flows into valuable products (80% reuse)</i> <i>- Tool for energy simulation scenarios</i> <i>- Reduced transportation costs (-50%)</i>

**Innovazioni tecnologiche trasferite dal mondo della ricerca alle aziende agroalimentari
TF2**

© Marco Battistella, t²i - trasferimento tecnologico e innovazione s.c.a r.l.

INNOVATION FOR AGRO-FOOD SUSTAINABILITY

Benefici delle nuove tecnologie

- riduzione domanda di acqua ed energia
- efficientamento risorse nelle fasi di lavorazione nel lattiero-caseario
- trasformazione flussi di scarto in prodotti di valore
- modello di simulazione per progettare caseifici ecosostenibili

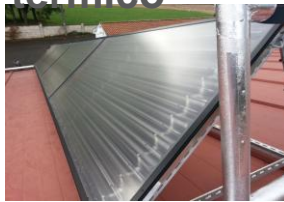


Concentratore latte crudo



Boiler a biomasse

Solare termico



Refrigeratore ad assorbimento

...e molto altro

Pompa di calore



TECHNOLOGY FACTSHEET 3

Service	What is	Application	Field of application	Equipment
<i>TDLAS for inline MAP control</i>	<i>Innovative non-intrusive laser gas sensors on food production for real time quality/safety in line control of food packaging and bottling</i>	<i>Non intrusive, Contactless, Laser Gas Sensor, Real Time, On-line Control, In-Line control, Food quality, Food Safety</i>	<i>Quality/safety in line control of food packaging and bottling systems by measuring the headspace gas composition such as container closure integrity, moisture and O₂, H₂O, CO₂ concentration. For pasta, meat, bread, milk, dairy, ready-to-eat food seasoning vegetables</i>	<i>Tunable Diode Laser Absorption Spectroscopy based techniques: for transparent or semitransparent packages (Lpro srl, Italy) and for opaque packages (Gasporox AB, Sweden)</i>
Improvements			Results	
MEASURE HEADSPACE GAS COMPOSITION and HEADSPACE PRESSURE rapidly and NON-DESTRUCTIVELY ALLOWS manufacturers to MONITOR a number of QUALITY parameters in filling/package lines such as e.g. CONTAINER CLOSURE INTEGRITY, MOISTURE AND OXYGEN CONTENT etc.			<i>Validation of 100% of the production measuring the gas content inside close packages in real time</i>	

**Innovazioni tecnologiche trasferite dal mondo della ricerca alle aziende agroalimentari
TF3**

© Marco Battistella, t²i - trasferimento tecnologico e innovazione s.c.a r.l.

INNOVATION FOR AGRO-FOOD QUALITY&SAFETY

Benefici del sensore spettroscopico a laser

- monitoraggio atmosfera interna e controllo integrità confezioni alimentari in tempo reale e sul 100% della produzione
- applicabile sia con packaging trasparente (vaschette, sacchetti, bottiglie) che non trasparenti (es. bottiglie opache di latte e succhi)
- riduzione scarti e maggior sicurezza per il consumatore finale.



Strumento da
laboratorio

Macchina in
linea

