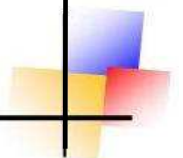




traceability
and
backward
traceability



dairy products



the system

Dairy industries face daily problems connected to the traceability and backward traceability of incoming milk, the management of standard internal processes (both connected to the production than administration), the management of weighing and packaging as well as problems connected to mobile sale and route accounting.

This activities are often done manually, using different systems that are not always integrated and this causes errors and wastes of time.

This application software for traceability and backward traceability, specifically developed for dairy industries wants to

- ✓ design and integrate different information systems

in order to cover all the different areas ("administration", "mobile sale and route accounting", "operational processes", "traceability and backward traceability", "weighing and packaging"), providing industries with

- ✓ an information support
- ✓ automatism for process verification

Results are

- ✓ less wastes of time
- ✓ less errors
- ✓ more independence for the operators
- ✓ management optimization

This complete application software is composed by different modules that covers all corporate departments: modules can be sold separately and they can be integrated with existent information structures in the company.

1. traceability and backward traceability

This traceability and backward traceability software application allows dairy industries to

- ✓ manage the "lot" of incoming materials, half-worked items and finished products
- ✓ manage the link between production lots and their shipment
- ✓ manage the different plants in order to check milk processing
- ✓ manage events and processing parameters that affect product quality

Basically the system allows dairy industries to answer to questions like

- which customers received a specific production lot?
- which raw-material lot or half-worked item has been used in a specific finished lot?
- which lots have been sold to that customer?
- which lots have been used in that finished lot?

Our traceability and backward traceability system allows dairy industries to

- ✓ manage "suppliers"
- ✓ manage carriers
- ✓ manage "milk reception"
- ✓ manage "lots" (incoming, half-worked, finished, outgoing items)
- ✓ manage barcode tags that identify materials (for example: incoming materials, half-worked items, finished products, outgoing items)
- ✓ link analysis, quality, technical information to a specific "lot"
- ✓ manage milk movements in the industry and its processing
- ✓ manage every single aspect connected to shipments
- ✓ manage the connection with equipments needed for milk processing
- ✓ manage the connection with "weighing and packing" systems
- ✓ manage the connection with the operational system
- ✓ manage the connection with the "internet"

basically

**the system answers to questions connected to the backward traceability
using information gathered during the traceability process**

Let's see how the system works.

2. milk reception

The system allows operators to check all incoming raw materials as well as:

- ✓ to manage supply contracts with farms.
- ✓ to schedule incoming milk loads
- ✓ to record all milk loads done in a day.
- ✓ to check carriers that collect milk (if industries use them).
- ✓ to unload in production all requested quantities.
- ✓ to sell milk without processing it.

The system starts with:

3.1. milk arrival scheduling

This function allows dairy industries to schedule milk orders to process in order to satisfy all production and sale needs. Specific orders are then sent to the different farms where milk is going to be collected.

The milk arrival function works with deadlines fixed by the industry (usually every week) and it completely manages information about incoming milk as well as to print different quality modules like:

- ✓ module for Milk arrival expectation /schedule
- ✓ Milk collection module (carrier)
- ✓ Milk collection module (farm)
- ✓ module to be sent to Authorities
- ✓ module for Milk arrival schedule

3.2. recording of incoming milk in the dairy

Incoming milk is registered in the system considering different "rounds" in other words milk collected by carriers in the different farm in their area. The system records milk origin, the vehicle, the collection time, the round number and the gross weight of incoming milk.

Cancel Confirm New Close

Milk reception

Date: 23/03/09

Base Masses Bills Stocks Goods-Invent Summary

Round summary

Origin	SUPPLIER	Number	1
	Product Type	Declared Qty	Recorded quantity
	FRESH MILK	8.360,000	8.360,000
	Total	8.360,000	8.360,000

Documents

	Supplier	Number	B	Date
	SOC.AGR. PIPPO	1		23/03/09
	AZ.AGR. MARIO ROSSI F.LLI	2		23/03/09
	AZ.AGR. PAPERINO	3		23/03/09
	AZ.AGR. MARIO BIANCHI	4		23/03/09
	ALLEVAMENTO TRE MAESTA'	5		23/03/09
	SOC.AGRIC. MATILDE DI CANOSSA	6		23/03/09
				23/03/09

Back

3.3. laboratory analysis (milk quality checks)

The system allows operators to record all information detected by the analysis on

- samples provided by suppliers
- samples taken from all different cells in the truck

Operators can add more analysis to a single milk collection; this operation is done in case the result of the first check is not positive.

The system checks inserted values considering acceptable limits (where considered), that can be configured for product type. Operators can indicate, for every numeric value to record, acceptable limits and the indicator to use when fees have to be applied.

3.4. fee calculation for wrong supplies

If supplies is not within acceptable limits, fees can be applied to milk suppliers. Analysis values are related to the following indicators:

- CBT
- Fat
- Proteins

The system allows dairy industries to add 3 analysis for a single indicator, the % of fee charged for the recorded CBT value and it calculates automatically the milk quantity considered in the fee and the related value to subtract from the supplier invoice.

the system allows operator to *print the quality check table related to the truck*: this printing can be done for truck and period of time (from date to date) and it displays the total calculation for fees (milk quantity and value). The printing can be sent to the supplier that has to change the value of invoiced goods (not the delivered liters).

4.4. milk transfer

The system allows operators to manage milk transfer to the different tanks with an indication about :

- ✓ milk type
- ✓ supplied quantity
- ✓ destination tank
- ✓ quantity in the tank

The connection with the bill recording module allows operators to know, whenever they want, suppliers who provided the milk. The system allows operators in the administration office to save all bills issued by milk suppliers: collected information can be used by milk traceability systems than by the corporate administration to check invoices.



COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

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3.5 milk direct sale

Once it has been collected, milk can be directly sold by the dairy industry.

The system allows operators to record milk sales and to unload the pick-up tank and change stocks.

The link with the accounting allows operators to issue fiscal documents/delivery notes.



3. cream reception and manufacture

As previously described for milk reception, operators can use advanced instruments to trace incoming materials. In particular the system allows operators to record:

- ✓ quantity declared by suppliers in kg
- ✓ fat % stated by suppliers
- ✓ weighted quantity in kg
- ✓ actual average fat %
- ✓ rounds number
- ✓ information about masses in other words real quantities found in trucks.

The system gives the company details about

- ✓ round
- ✓ vehicle
- ✓ trailer

Later on these information allow the dairy industry to check the mass balance and the correctness of information in supplier bills.

For every round the system allows operators to save information in shipping document delivered by carriers. They can add information about a specific round (origin, round number, list of trucks, total declared quantities and so on) as well as specifications about the document (bill) that has been delivered by the carrier.

When cream reception has been done and stocks have been generated, the system highlights the final stock in every tank with the related fat percentage.

At the end of rounds and cream reception, operators can monitor and save information that come from analysis performed on

- ✓ samples delivered by suppliers
- ✓ samples taken from the tanks

Once information about the performed rounds have been inserted, the laboratory can display "round tabs" and add only information about the analysis.

The "Mass balance" function allows operators to display and check the correctness of what has been declared by the single suppliers, evaluating delivered creams.

		MASS	FAT	LINES	R.S.M.	PH	CRIO
Mass balance							
Search Results							
04/01/08		REAL	13.950,00	21,18	2.955,200	6,56	6,64
AMA-	-1	SUM	13.895,00	21,24	2.951,450	6,67	6,61
SENT		DELTA	0,00	0,06	-3,75	0,11	0,03
		DELTA %	0,39	-0,28	0,13	-1,68	0,45
05/01/08		REAL	17.290,00	19,06	3.295,100	6,70	6,58
AMA-	-1	SUM	17.290,00	18,70	3.233,750	6,73	6,57
SENT		DELTA	0,00	0,36	61,35	-0,03	0,01
		DELTA %		1,89	1,86	-0,45	0,15
04/01/08		REAL	12.890,00	36,29	4.677,850	4,37	6,64
AMA-	-2	SUM	12.900,00	36,84	4.752,400	4,37	6,66
SENT		DELTA	10,00	55,00	-74,55	0,00	-0,02
		DELTA %	-0,08	-1,52	-1,59		-0,30
05/01/08		REAL	15.280,00	30,74	4.697,700	4,80	6,58
AMA-	-2	SUM	15.300,00	29,86	4.568,500	4,85	6,59
SENT		DELTA	20,00	88,00	129,20	-0,05	-0,01
		DELTA %	-0,13	2,86	2,75	-1,04	-0,15



4. management of production processes

The complete management of production processes for incoming milk/cream is the core part of this software application: from the pick-up of milk from tanks to packaging and labelling of finished products.

This system allows industries to monitor:

- ✓ production departments
- ✓ operators
- ✓ shifts

basically it checks all different departments/production lines in the company, it gives information about operators who are working in that department, their schedule as well as the one for all different department/production lines, shifts for every operator than for the whole company, with reasons for production stops, holidays and so on.

Information given by the system allow the full display and a complete management of every single production cycle as well as a complete management of corporate production cycles and a summary of inserted information.

At the end of every working day, production information about the day can be added to the system in order to issue production tabs for the following products:

- ✓ panna
- ✓ mascarpone
- ✓ milk
- ✓ butter
- ✓ latticello
- ✓ cheese

Every tab allows operators to record half-worked products and raw materials needed to produce them, their related workings and then also a list of finished products.

Production tab module is linked to the warehouse too so when you close a production tab you can then issue the related warehouse movements. At the end of the production cycle operators can print directly barcode tags to stitch on finished products before placing them in the warehouse. Available quantities are then correctly added and the warehouse is quickly unloaded (thanks to the reading of barcode tags) when the goods are going to be picked up to be loaded on agents' trucks.

Moreover this module allows operators to add the results of chemical and microbiological analysis in all different production tabs.

5. cheese production

This solution for the management of the cheese and milk production offers a series of specific functions for the management of cheese production. The "cheese rounds" module allows users to manage information about the different types of cheese rounds orders.

In particular

- ✓ purchase prices for round
- ✓ the quality of the purchase round
- ✓ time needed to handle the cheese round
- ✓ the locations
- ✓ the loss in weight – washings and packaging
- ✓ the lots
- ✓ the texts of letters to attach to outgoing goods, in line with requested documents
- ✓ cooperatives

You can also manage all administrative duties connected to purchase orders, sale orders and the related check of all incoming documents.

6.1. Datamatrix and cheese rounds identification systems

This software application allows operators to take advantage of laser marking systems like datamatrix codes for the identification of every single cheese round.

Marking casein tags, placed on cheese rounds, operators can identify univocally the cheese round and collect all information needed for cheese backward traceability like milk supplier, working phases, and so on. Codes can be easily read by Datamatrix readers.

If you do not want to mark directly the cheese round or, in case of different products from cheese, this cannot be done (think for example of products like mozzarella cheese), industries can use the same method used to identify single boxes.

6. management of goods inward from supplier

For industries that purchase and sell goods from different suppliers, the system allows a prompt management of purchased goods since their arrival.

At first operators record delivery notes for the specific box or pallet and they can print a barcode tag that is stitched on the box/pallet: goods are now loaded in the warehouse. In this way incoming goods are correctly inserted in the warehouse and at the same time available quantities/goods are correctly increased in the warehouse.

7. Management of remote orders (web order collection)

For companies that collect orders from customers, the system manages orders collected remotely and sent to the head office using handheld terminals connected to the Internet and given to agents.

The system allows the industry to:

- ✓ **send quickly orders to the head office**
zione del rientro o meno in sede del venditore e grazie all'utilizzo di palmari connessi alla rete internet, le informazioni e gli ordini raccolti dall'agente vengono inviati e ricevuti in tempo reale dalla sede centrale per una rapida evasione
- ✓ **una completa anagrafica dei vettori e dei magazzini viaggianti**
Il sistema consente di codificare tutti gli agenti in forza presso l'azienda e i relativi magazzini per ogni furgone. Per ogni agente è possibile stabilire quali saranno i clienti ai quali lui potrà avere accesso nonché quelli associati agli agenti a lui collegati
- ✓ **una completa gestione del cliente**
Il sistema consente una completa gestione del cliente, consentendo all'agente di verificare la sua servibilità (lo strumento lo avverte se è "fuori fido", in questo caso, può scattare un "blocco" e di conseguenza l'attività viene interrotta), gli articoli da proporre sulla base di quelli normalmente acquistati dal cliente, eventuale merce omaggio, la proposta di prezzi e listini personalizzati, ed offre inoltre la possibilità all'agente di vedere le partite aperte del cliente e di incassare eventuali pagamenti delle stesse
- ✓ **l'elaborazione di statistiche di vendita**
Lo "storico cliente" consente al venditore di vedere statistiche di vendita, relative al cliente, in modo sintetico e analitico, per una valutazione commerciale sia di fatturato che di tipologia e volumi di articoli venduti

8. mobile sale

The system allows users to manage mobile sale performed using agents and mobile warehouses thanks to handheld terminals and barcode printers given to all mobile operators, that allow a real-time management of available stocks and sold items.

The system allows you to manage :

- ✓ **a complete data set of carriers and mobile warehouses**
The system allows you to codify all agents who work for the company and the related warehouses for every truck. You can decide which customers are going to be assigned by every agent as well as customers assigned to every related agent
- ✓ **warehouse load/unload for lots**
The system allows users to load/unload warehouse for lots. Goods that are loaded into the truck are usually taken from bigger lots that are stored in the warehouse. At the same time also whole lots loaded into a truck for the mobile sale may not be completely sold at the end of the day. The system allows users to manage correctly these situations using the barcode tags and handheld terminals that allow a correct loading and unloading of the warehouse.
- ✓ **update of warehouse information**
the central warehouse as well as the mobile ones are constantly updated even if some of the goods are unsold at the end of the day. The system records all goods loaded in the morning as "temporary" so that they can be checked and made final by warehouse operators. In this way also the production can be correctly scheduled.
- ✓ **warehouse stock**
The system allows users to take the stock of the warehouse whenever they want and very easily thanks to the use of handheld terminals and the reading of different barcodes
- ✓ **loading requests from handheld terminals**
every agent can issue loading requests to the head office using its handheld terminal.
- ✓ **statistics about agents**
From data about agents' sales, handled goods and receipts, operators can get statistics and information about sale agents and their productivity

9. contact references

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