

MILK BALANCE CONTROL

Milk Balance Control - a valuable management tool:
Day to day control of milk utilisation and milk loss could very well turn out to be a really good investment in many dairies

Introduction:

Compared with other industries the dairy industry is characterised of:

The raw material, the milk is a very big share of final produced products cost price.

The has from the childhood of the dairy industry meant, that the utilisation of the received raw milk to real production were among the most important economic factors in the dairy industry.

Despite all modern technique and data collection, which is found in many milk plants to day, several milk plants face a problem meet the standard wastage ± 0,5 %, which generations have been good practice in the dairy industry

Milk Balance Control:

Based on the reality that working out milk balance control did not

meet the requirements of a modern dairy industry. JP Consult together with Scandinavian dairies launched a project with the aim.

To work out a simple and quickly prepared milk balance at the plant level.

The overall structure of the milk balance is based on:

Weekly volume and fat balances:

The weekly milk balance constitute the milk plants own control measure to ensure fast daily & weekly control and follow up of the effective utilisation of the received raw milk.

Monthly volume and fat balances:

A supplementary monthly balance based on weekly figures can be worked

Milk Balance Control system main idea:

- MBC show a total picture of the milk flow through the dairy straight from arrival of raw milk, through the processing procedure to the final produced product.
- MBC can easily be developed and changed and adjusted to individually demand in the single milk plant.
- MBC supply the milk plant with accurate figure for daily, weekly production as well as accumulated year, and milk loss during production.
- MBC is based on Microsoft Excel and is programmed in Visual Basic.
- MBC create a monthly MBC within few minute.
- MBC is easy to introduce, operate and have a short pay back time

Menu					
X-Town Dairy			Week 01-2012		
Milk reception. Milk treatment.	Market milk production	Butter production	Cheese production	Milk balance	Print
Sheet 1 Stock Milk	Sheet 4 Prod. Market milk	Sheet 4 Prod. Butter	Sheet 5 Prod. Cheese	Milk balance Total milk plant	Milk balance Total milk plant
Sheet 2 Milk Received			Sheet 6 Prod. Cheese, whey	Milk balance Milk treatment	Milk balance All
Sheet 3 Milk Purchase/sale			Sheet 7 Cheese Production/ stock	Milk balance Market milk	Report Information
Sheet 2 Pasteur. Milk/Cream			Sheet 8 Sale Cheese	Milk balance Cheeseprod.	Report e-mail
			Sheet 9 Cheese Accumulated year	Milk balance Whey	Total print Projekt file
				Milk balance Butter production	
Production Deviation and test	Reference Milk raw materiel	Reference Supplier/customer	Reference Butter/cheese		Create a new Week

Fig. 1 Menu Milk Balance control

Both MBC have columns for accumulated year (see fig. 2)

For cheese factory a special MBC working with volume, fat and protein is developed, just MBC in several cases is extended to control i.e. packing material etc.

Easy to handle:

X– town MBC is basically a frame system, which becomes tailor made to every dairy and dairy company.

The overall EDP set up in “Standard milk balance system” is based on “Visual basic programming” and the normal function in the Excel calculation program, the access to the programme is through a main menu. (see Fig 1)

The use of a traditional calculation system as Microsoft Excel gives the system a great extent of flexibility, and the use of a popular spreadsheet program also facilitate and easy introduction at the dairy.

The EDP programming and data collection is easily adjusted to local condition according to specific requirements, just as diagrams and graphic i.e. about milk reception, fat content or comparison from years to year is easily set up.

In most dairies less than 30 min. are used every day for working out the weekly MBC.

The monthly MBC is created automatic within a few minute.

X-Town Dairy	Milk balance milk plant total					
	Week 01-2012			Accumulated year		
	Amount	kg. Fat %	Kg.fat	Amount	kg. Fat %	Kg.fat
Stock week start:						
Milkreception, raw milk	4.080	4,20	171			
Milk/cream treatment	214	19,07	41			
Market milk	408	3,50	14			
Butter	80	40,00	32			
Total stock week start	4.782	5,40	258			
Received milk raw material:						
Raw milk farmer	7.140	4,20	300	7.140	4,20	300
Received other milkplant	27.500	6,80	1.871	27.500	6,80	1.871
Reused product	700	2,50	18	700	2,50	18
Total received milk raw ma	35.340	6,19	2.188	35.340	6,19	2.188
Available milk raw material	40.122	6,10	2.447	40.122	6,10	2.447
Saledelivered milk raw mat.						
Sale milk plant/others DK	5.100	4,20	214	5.100	4,20	214
Sale milk plant/others EU	5.100	4,20	214	5.100	4,20	214
Total saledelivered	10.200	4,20	428	10.200	4,20	428
Market milk production:						
Produced market milk	15.954	8,03	1.281	15.954	8,03	1.281
Total Market milk productio	15.954	8,03	1.281	15.954	8,03	1.281
Butter production:						
Production butter	329	82,50	271	329	82,50	271
Total Butter production	329	82,50	271	329	82,50	271
Cheese production:						
20+ Cheese 1	1034	0,95	10	1.034	0,95	10
30+ Cheese 2	2064	1,30	27	2.064	1,30	27
45+ Cheese 3	1032	2,65	29	1.032	2,65	29
45+ Cheese 4	1032	2,65	29	1.032	2,65	29
45+ Cheese 5	1032	2,65	29	1.032	2,65	29
45+ Cheese 6	1032	2,65	29	1.032	2,65	29
Total Cheese production	7.228	2,14	154	7.228	2,14	154
Scrap milk for feeding:						
Scrap milk from milk treatment	700	0,50	4	700	0,50	4
Scrap milk from butter	350	0,50	2	350	0,50	2
Total Scrap milk	1.050	0,50	5	1.050	0,50	5
Loss of fat in whey			4			4
Test production	100	3,50	4	100	3,50	4
Stock week end:						
Milkreception, raw milk	4.080	4,20	171			
Milk/cream treatment	214	19,07	41			
Market milk	408	3,50	14			
Butter	80	40,00	32			
Total stock week end	4.782	5,40	258			
Disposed milk raw material	39.641	6,07	2.407	39.641	6,07	2.407
Difference 1 (amount)	481	8,31	40	481	8,31	40
Difference 1 [%]	1,20		1,63	1,20		1,63

Fig. 2 Weekly Milk Balance

MBC has proved its efficiency for more than 15 years by:

1. Supplying the Dairy Industry with accurate figure and data for production daily, weekly, monthly as well as accumulated year
2. Been a useful tool to improve the utilisation of the received milk supply with less wastage and in this way save a lot of money.

Practical experience from more than 30 milk plant has shown , that analysis of the existing milk flow and utilization done by JP Consult followed by introduction of MBC has been a very good investment with a short pay back time.

Do you want to know more about "Milk balance Control please contact us by telephone, e mail

MBC Economy:

Gain or loss of milk: 0,1 % per 10 mill. Kg. milk/year

10,000,000 kg. * 0,1/100 = 10.000 kg.

10.000 kg * 0,33 euro = 3300 euro

There have been cases, where pay back time for introduction of MBC system has been as low as 1 month, in most cases pay back time is from 3 to 9 months

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