



Factsheet 5: Milk Cow Nutrition Monitors on Dairy Farms

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Daily Observations and Measures

Intake of Ration and/or Feeds

- ◆ Look at ration color, texture and uniformity of TMR after delivered to manger. Ration should smell fresh, be cool, and look like individual feeds before being mixed or fed. Mix should be exactly the same from one end of the bunk to the other.
- ◆ Evaluate amount of ration or individual feeds fed each day. Monitor weights of all feeds or ration fed to herd or groups (example feed sheets are attached). Weights should not increase or decrease by more than 5% per day when cow numbers remains constant.
- ◆ Check refusal amount and quality. Evaluate feed or ration remaining in the bunk for particle size, odor and temperature. Approximately 1 to 3% of the daily amount fed should be remaining in the manger. Residual feed should look and smell similar to the fresh feed fed the previous feeding. Look at manger to see if the surface is clean and no feed buildup is occurring in corners.

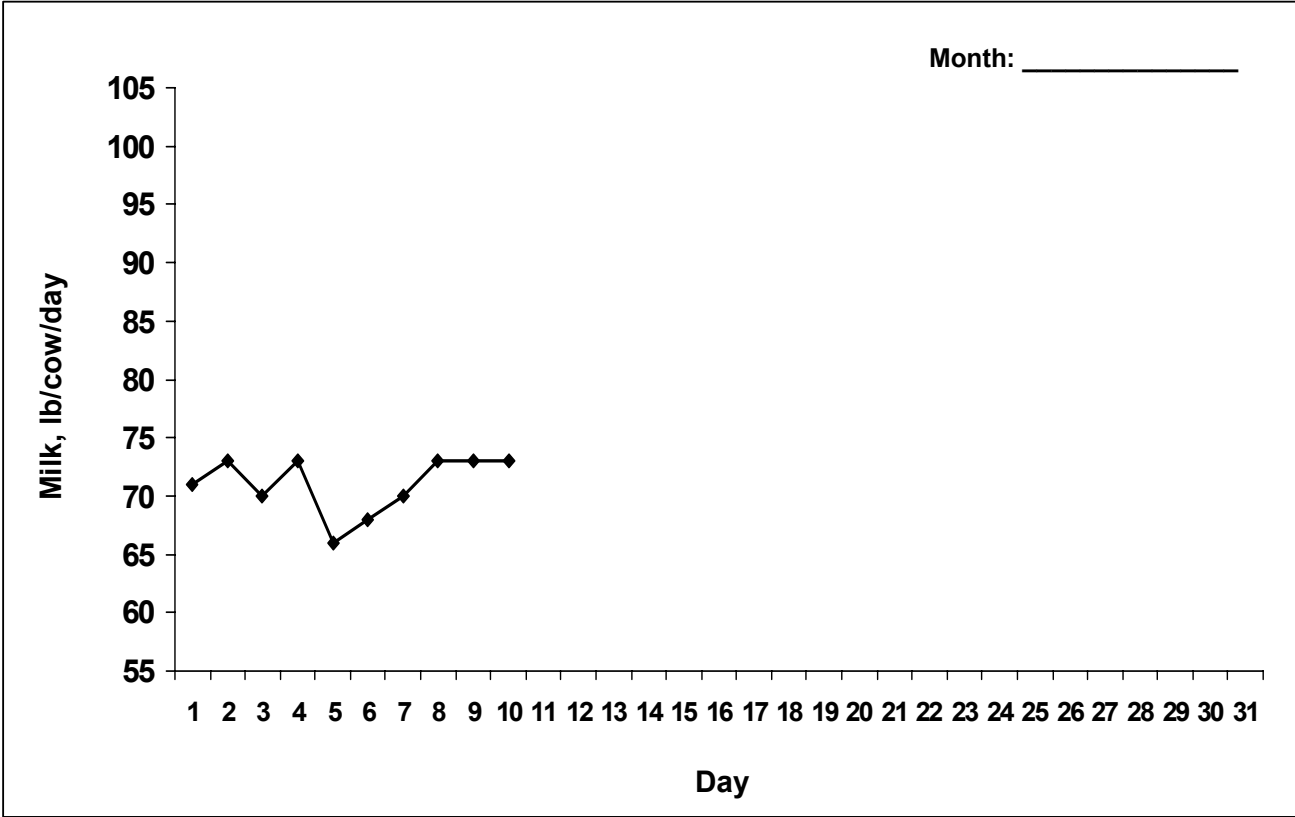
Milk Production

- ◆ Check daily for cleanliness and good flow rate.
- ◆ Bulk tank. Monitor the amount of milk produced each day and the amount shipped for every other day pickup.
- ◆ Calculate or monitor pounds of milk produced per cow for each group or herd (see Figure 1). Graphing the average pounds of milk per cow produced each day for the herd is an easy and quick way of monitoring production trends. A change of over 5 lb/cow from the previous day may indicate a ration or feed change, a deviation in milking routine or some other abnormal situation.

Waterers

- ◆ Check daily for cleanliness and good flow rate.

Figure 1. Average Daily Milk Per Cow



Weekly Measures and Checks

Feed

- ◆ Determine moisture (dry matter) content of all high moisture grain, silage and haylages fed. Adjust amount of feed in the ration if moisture content changes by more than 3%.
- ◆ Do an inventory of purchased feeds.

Dry Matter Intake

- ◆ Calculate DMI of each group or herd.

Feed	lb as Fed	X	% DM/100	Lb of Feed DM
Haylage	1500	x	50/100	750
Corn silage	5220	x	33/100	1723
Corn	630	x	88/100	555
Protein/mineral	965	x	90/100	868
TOTAL	8315			3896

Ration fed to 80 cows; DMI lb/day = 3896 lb / 80 cows = 48.7 lb

Ration DM is 3896 lb DM / 8315 lb as fed x 100 = 46.8%

Health Related Nutrition Monitors

Health Problem	Average Incidence
Milk fever, after calving	< 3%
Displaced abomasum	< 5%
Sore feet - laminitis	< 6%
Ketosis, after calving	< 5%

Monthly Measures

Feed

- ◆ Test all forages and high moisture corn at least once per month. Minimum analysis should include: DM, CP, ADF, NDF, Lignin, Fat, Starch, Ca, P, Mg and K .
- ◆ Check forage and high moisture corn inventories. Adjust feeding amounts as needed.

Ration

- ◆ Particle size guidelines for TMR and forages.

Feed or TMR	Particle Separator Box %		
	Top	Middle	Bottom
TMR	6 - 10	40 - 50	<50
Hay forage	15 - 20	30 - 40	30 -40
Corn silage	<10	40 -50	40 - 50

- ◆ Calculate ration cost and Income Over Feed Cost for herd and milking cow groups.

Cost guidelines are as follows:

Milk cows: 2.50 to 4.00/cow/day

Feed cost/cwt of milk: < \$5.00 for milk cows only

Animal

- ◆ Manure scoring

Manure can be a tool to help evaluate how well feed is being digested, whether the ration has a correct balance of nutrients (protein, fiber and carbohydrates) and if water intake is appropriate.

Score	Appearance	Nutrition Factors
1	Very loose, runny manure. Splatters on impact and runs away.	Excessive soluble and/or degradable protein. Low fiber, high starch - acidosis
2	Loose and runny. Splatters on impact, but tends to form a pile.	Similar situation as for score 1. Lush pasture.
3	Pudding consistency. Soft, yet piles. Piles spread slowly or easily. Manure will form a pile of 1 to 1.5".	Balanced diet.
4	Manure is thick and readily piles up. Will not stick easily to boots.	Dietary factors are: low soluble or degradable protein, excessive fiber or low starch level, inadequate salt feeding. Typical dry cow manure.
5	Firm, very dry piles. Visible fiber particles.	Similar to score 4 except dehydration may be a factor.

◆ Ruminating (cud chewing) activity

Cows should chew or ruminate 8 to 11 hours per day. Most rumination will occur when cows are lying down. Expect 50% or more of all cows lying in stalls to be chewing their cud.

◆ Body condition scores (BCS).

Stage of Lactation	Body Condition Score	
	Target Score	Acceptable Range
Fresh cow	3.5	3.0 to 3.8
100 days in milk	2.8	2.5 to 3.0
Dry off	3.5	3.0 to 3.5

In tie stall herds of less than 100 cows, BCS can be done on each animal and evaluated relative to days in milk. In large free stall herds or groups, 20% of the animals can be selected randomly and scored or an alternative is to count the number of animals outside the desired or acceptable BCS range. If more than 20% of the cows are outside the desired BCS range, a dietary energy problem should be suspected.

◆ Milk composition

Milk fat and protein tests should be monitored at least once a month. For milk plant bulk tank samples, milk fat should be .3 to .4% units higher than milk protein. Individual DHI cow tests should average similar to bulk tank tests. No more than 25% of the cow should have a milk protein % higher than their milk fat %.