



Dairy Newsletter

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Some Characteristics of Higher Producing Herds

The Akey Dairy Herd Monitor summarizes herd information from DairyCOMP 305 records. There are currently over 100,000 cow records in the database (some herds are included over more than one monthly test day).

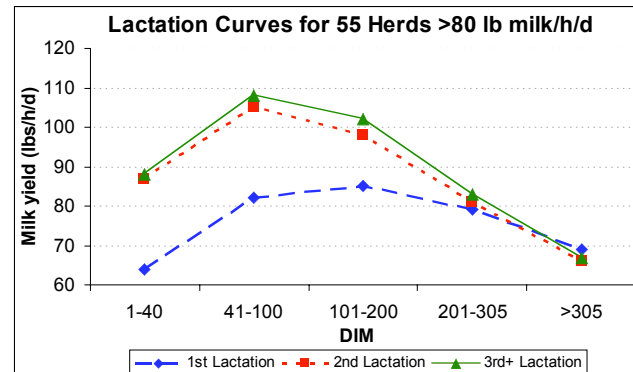
The following table includes average data for all herds in the database compared with 55 herds in the database that had average test day milk greater than 80 lb/h/d.

Item	Average	>80 lb	Difference
No. milking	786	721	-65
DIM	186	181	-5
Days dry	60	61	+1
% left herd	23	23	0
% sold	18	19	+1
% died	5	5	0
% left 1-40 DIM	36	34	-2
Milk/cow/d	77	86	+9
%>100 lb/d	19	29	+10
305 ME, lb	25,712	28,127	+2,415
% fat	3.6	3.6	0
% protein	3.0	2.9	-0.1
SCC x 1000	287	239	-48
Preg rate	17	18	+1
1 st service CR	35	37	+2
Day to 1 st bred	79	76	-3
Days open	135	130	-5
% herd preg	48	50	+2
HDR, %	53	55	+2
Milk by stage 1 st lactation			
1-40 DIM	59	64	+5
41-100 DIM	74	82	+8
101-200 DIM	77	85	+8
201-305 DIM	72	79	+7
Milk by stage 2 nd lactation			
1-40 DIM	81	87	+6
41-100 DIM	96	105	+9
101-200 DIM	88	98	+10
201-305 DIM	71	81	+10
Milk by stage 3 rd + lactation			
1-40 DIM	80	88	+8
41-100 DIM	98	108	+10
101-200 DIM	90	102	+12
201-305 DIM	72	83	+11

The higher producing herds averaged 9 lb/h/d more milk (86 vs. 77 lb), had higher percent of cows > 100 lb/h/d (29 vs. 19%), and 305 ME milk was 2,415 lb higher (28,127 vs. 25,712 lb) compared to the average of herds, respectively. Milk fat % and milk protein % were about the same. Somatic cell count was slightly lower for higher producing herds (239,000 vs. 287,000 cells/ml). All measures of reproductive performance were equal to or better for high producing herds vs. the average of herds. Cull rates between the higher producing herds and the average of herds was similar.

These data indicate that herd health (based on culling) and reproductive performance are not necessarily compromised by higher production levels. The factors that are in place in higher producing herds (nutrition and management) that enhance production also maintain good herd health and reproductive performance.

The figure below illustrates milk/h/d by stage of lactation for the 55 herds with > 80 lb of milk/h/d.



The Impact of Monensin in Lactating Dairy Cows

Duffield et al. (2008) published two comprehensive review studies regarding the effects of monensin in dairy cows. In the first article the authors focused on the metabolic effects. In the second study they focused on production effects.

Monensin is an ionophore, which interferes with ion transport across gram positive bacterial cell

membranes, resulting in bacterial death. Due to this shift in rumen microbial population the ratio of volatile fatty acids (VFA) produced will change into increased propionate and reduced butyrate and acetate. Duffield et al. (2008) used results of 45 trials with metabolic data and 77 trials with production data in their meta-analysis.

The study regarding metabolic effects concluded that treating cows with monensin changed energy metabolism. BHBA and NEFA concentrations were significantly reduced, while glucose and insulin were increased. As expected the effects were stronger in early lactation. The extent of changes was influenced by a consistent delivery of monensin, start of treatment and to a small degree the dose of treatment.

Results of the second study indicate that this shift in metabolism should come from changed dynamics in the rumen, because cows with monensin reduced DMI 2% (0.66 lbs). The improved energy balance, due to changed metabolism, was used to improve production; this resulted in a 3% (1.5 lbs) increase in milk yield. Monensin reduced milk fat 0.13%, but yield did not differ. Protein % decreased a little bit, but yield increased. The effect of reduction of milk fat content is lower when treatment was started in early lactation compared to starting further on in lactation. No explanation was given why. Diets were evaluated to estimate dietary factors, which could explain the reduction in milk fat. It was found that increased levels of C18:1 in the diet was associated with reduced milk fat (C18:1 could have been a marker of total unsaturated fat intake). Effects were greater in trials with higher concentration of unsaturated fatty acids. Milk fatty acid profile was changed, indicating that monensin disrupts biohydrogenation. NDF or peNDF were not found to influence milk fat content.

Increasing rumen peptide balance (as estimated by CPM) increased the positive effect of monensin on milk protein yield. Earlier in vitro work indicated that monensin reduces microbes that degrade protein. Providing sufficient peptides (degradable true protein) should allow both optimal bacterial and milk protein yield.

Besides improved milk production efficiency, monensin also improved BCS and BW gain when cows were treated with monensin.

Sources: Duffield et al. 2008 JDS 91: 1334-1346 and 1347-1360

Cost of Milk Production Worldwide

The International Farm Comparison Network (ICFN) studies the economics and trends in dairy production in various countries and publishes an annual report. From this report published in 2007 for the 2006 survey, here is a list of countries from low to high milk production cost. Cost are listed in US dollars per 100 lb of energy corrected milk.

<\$7.26 – The larger or better farms in Ukraine, Belarus, Cameroon, Uganda, India, Pakistan, Western Australia, and farms in Argentina.

\$7.26-\$11.34 – Chile, Bangladesh and New Zealand, most farms in India and Australia, smaller farms in the Czech Republic, Uganda, Pakistan, and larger farms in Bulgaria, South Brazil, Peru, China, and average managed farms in Ukraine and Belarus.

\$11.34-\$14.06 – South Africa, USA, small farms in Peru, China, most farms in Brazil, and larger farms in Ireland, Turkey, and Israel.

\$14.06-\$18.14 – Spain, Portugal, Morocco, Mexico, the larger farms in Austria, Germany, UK, Sweden, and the Czech Republic, and the smaller farms in Ireland, Bulgaria, Israel, and Cameroon.

>\$18.14 – Switzerland, The Netherlands, Luxembourg, France, Italy, Denmark, Finland, Norway and Canada, and small farms in Austria, Germany, UK, Sweden, and Turkey.

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