THE MARKET ADMINISTRATOR'S
REPORT

TEXAS MARKETING AREA
NEW MEXICO - WEST TEXAS MARKETING AREA
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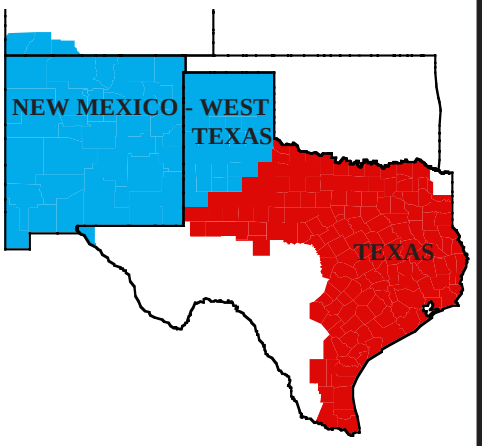


VOLUME XXV, NO. 9 SEPTEMBER 1999

FACT SHEET - MILK PROTEIN TESTING - FAQ's
CHANGING FROM CRUDE PROTEIN TO TRUE PROTEIN

What is the difference between crude protein and true protein?

Crude protein, sometimes called total protein, is estimated from measuring the total nitrogen content of milk. Nitrogen is multiplied by 6.38 to express the results on a protein equivalent basis. The total amount of nitrogen in milk, however, comes from both protein and non-protein nitrogen sources. True protein reflects only the nitrogen associated with protein and does not include the nitrogen from non-protein sources.

What is non-protein nitrogen?

This is a normal part of milk. The non-protein nitrogen (NPN) fraction is composed of urea and other low molecular weight nitrogen containing compounds such as creatine and creatinine. About 50% of the NPN in milk is urea, and variation in NPN is attributed primarily to variation in urea content. Non-protein nitrogen has little nutritional value and does not contribute to cheese yield. Therefore, it does not have the same economic value as "true" milk protein to either the processor or the consumer.

How much of the crude protein is NPN?

The amount of NPN in milk varies naturally, just like any other milk component. On average, NPN represents approximately 6% of the total nitrogen. On an absolute basis, NPN accounts for about 0.19% of the "protein" in a crude protein value, but may range at the extremes between 0.12-.25%.

How are crude protein and true protein measured?

Kjeldahl nitrogen analysis forms the basis for the **reference tests** for both crude and true protein. In both cases, nitrogen is multiplied by 6.38 to express the results on a protein equivalent basis. Milk infrared analyzers are the most common testing instruments used for determination of protein for **payment testing**. They are calibrated using results from Kjeldahl reference testing. These instruments detect a signal generated from the protein molecules. In simple terms, the machines "see" protein but cannot see NPN substances.

Why change the basis for measurement of the protein concentration from crude protein to true protein?

In the past, most electronic milk testing equipment were calibrated on a crude protein basis. This created problems because, although the NPN varied, the machine could not measure this variation. By calibrating on crude protein, a certain amount of error was inevitable when the machine attempted to predict something it could not measure. The direction and magnitude of these errors are not easily predicted, as NPN is not well correlated with either crude or true protein level. These errors are eliminated when true protein is used as the basis for calibration because the electronic testing instruments can directly detect the protein signal.

Are there differences in NPN between farms? Between breeds?

Milk NPN levels are influenced primarily by farm management and feeding practices. Feed practices account for much of the variation in NPN observed between farms, regions and seasons. Any differences in NPN between breeds will be small compared to the effects of diet.

Will expressing protein as true protein rather than crude protein decrease my protein test?

On an absolute basis, yes.

Will the lower protein test decrease the milk price?

No. The value of protein will be increased to compensate for the decrease in protein. The change in test level in the Federal Milk Markets will be revenue neutral.

How do I compare my true protein tests to my previous crude protein records?

Add 0.19% to the true protein values to get an approximate estimate of crude protein.

You say that NPN levels can vary. So is adding a constant correction of 0.19% to estimate crude protein from true protein accurate?

Estimates of crude protein based on electronic milk testing have never been accurate with respect to the actual amount of NPN in milk, since this is not a component that the machine can measure. Adding a constant factor contributes no greater error than previously occurred when instruments were calibrated on a crude protein basis.

How will changing from crude protein to true protein influence genetic selection for protein production?

Using true protein will reduce the amount of random error in milk protein production data and improve the data quality for genetic selection. This will be an advantage for genetic selection for improved protein production in all breeds within the US. The actual value of protein production can be adjusted to a crude protein basis by adding 0.19% to the true protein test to make data comparable to historic data and data from other countries that still express milk protein on a crude protein basis.

Will this change in payment testing affect nutritional labeling?

No. Crude protein is the basis for nutritional labeling on an international basis.

Do any other countries express milk protein content for payment testing on a true protein basis?

Yes. France and Australia

Please summarize the advantages of using true protein instead of crude protein?

Using true protein instead of crude protein will better reflect the economic value of milk protein. Additionally, it will improve the accuracy of payment testing for protein by eliminating sources of random error. This will result in more equitable and accurate protein tests, and improve the quality of data used for genetic selection and farm management.

Authors: David M. Barbano and Joanna M. Lynch, Cornell University, Ithaca, NY. *Reprinted with author's permission.*

DAIRY FARMERS APPROVE MILK MARKETING ORDER REFORMS

In referenda held August 2-6, eligible dairy farmers voted in favor of consolidating the current 31 federal milk marketing orders into 11, and several other important reforms, including the minimum pricing of Class I (drinking milk).

An individual referendum was held for each of the consolidated orders. More than the required two-thirds of participating producers approved the reforms. The percent of approval of each of the orders by eligible, voting producers was as follows.

Order	No. Producers Eligible to Vote	No. Producers Voting	% Approval Among Voting Producers
Northeast	18,570	13,921	90.5
Appalachian	4,099	3,226	98.9
Florida			100[1/]
Southeast	5,099	3,982	98.8
Upper Midwest	23,294	20,013	96.1
Central	7,903	7,703	98.9
Mideast	9,874	6,971	96.3
Pacific Northwest	1,094	1,009	97.0
Southwest	1,457	1,432	97.8
Arizona-Las Vegas	119	116	93.1
Western	906	678	95.9

[1/] Number of producers is restricted because it represents data for fewer than three cooperatives.

TOP TEN TEXAS COUNTIES a/ – AUGUST 1999

County	Number of Producers	Pounds	% Change From 1998b/	County	Number of Producers	Pounds	% Change From 1998b/
1. Erath	151	101,325,678	-7.05	7. Wood	63	11,416,504	-12.87
2. Hopkins	232	35,799,262	-19.40	8. Johnson	39	10,951,533	-20.42
3. Comanche	46	34,191,529	+3.56	9. Lamb	3	9,310,494	+61.62
4. El Paso	8	19,700,230	-4.27	10. Cherokee	25	6,967,260	-25.80
5. Archer	58	15,748,825	-5.89	Ten County Total	650	258,802,517	-8.34 b/
6. Hamilton	25	13,391,202	-12.83	Other Counties Total	547	118,589,630	-9.44
				Texas Total	1,197	377,392,147	-8.69

a/ Includes all known Grade "A" milk produced on farms located in Texas.
b/ Compared to top ten counties for the month in the previous year.

Minimum Prices at 3.5%, for Federal Orders 126 and 138 (Zone 1) **Formula Prices (3.5%) and Price Quotations**

	Class I a/				Class	Uniform a/			Grade A	Block	Spray
	126	138	Class II	Class III	III-A	126	138	B F Diff.	Butter	Cheese	Powder
Month	-------- Dollars Per Hundred Wt. --------							¢/Point	----------Cents Per Pound----------		
June	15.17	14.36	12.31	13.10	15.38	14.11	13.69	21.7	184.68	140.38	102.89
July	14.04	13.23	11.18	14.77	15.59	13.22	13.04	22.3	191.85	156.56	102.97
August	16.26	15.45	13.40	14.99	16.52	15.50	15.05	24.5	208.30	163.20	104.63
September	17.93	17.12	15.07	15.10	19.81	16.81	16.09	32.5	266.66	165.56	110.07
October	18.15	17.34	15.29	16.04	18.13	17.29	16.63	27.3	231.89	175.34	111.80
November	18.26	17.45	15.40	16.84	14.87	17.44	16.89	17.8	165.47	183.17	112.50
December	19.20	18.39	16.34	17.34	13.48	17.85	17.08	13.2	132.31	187.07	114.90
Averages 1998b/	16.70	15.89	13.84	14.20	14.85	15.43	14.65	19.2	168.71	153.63	106.94
January 1999	20.00	19.19	17.14	16.27	13.12	18.03	16.68	13.7	133.22	175.95	108.93
February	20.50	19.69	17.64	10.27	12.78	16.27	19.03	13.9	122.53	130.10	104.37
March	19.43	18.62	16.57	11.62	12.36	15.76	14.49	13.2	120.27	130.92	102.39
April	13.43	12.62	10.57	11.81	11.06	12.33	12.03	9.5	93.98	131.31	102.28
May	14.78	13.97	11.92	11.26	11.62	12.97	12.43	11.1	103.89	126.61	102.28
June	14.97	14.16	12.11	11.42	13.29	13.37	12.84	16.1	140.31	127.47	101.39
July	14.42	13.61	11.56	13.59	12.37	13.57	13.39	13.4	125.44	147.02	101.72
August	14.58	13.77	11.72	15.79	12.62	13.97	13.61	13.6	130.63	172.13	103.84
September	16.75	15.94	13.89								

a/ Subject to zone and location adjustments. b/ Simple averages

TOP NEW MEXICO COUNTIES a/ – AUGUST 1999

County	Number of Producers	Pounds	% Change From 1998b/	County	Number of Producers	Pounds	% Change From 1998b/
1. Chaves	41	129,833,215	+.11	7. Bernalillo	8	10,816,427	-.50
2. Dona Ana	23	61,660,693	-.23	8. Valencia	10	9,432,955	-4.42
3. Curry	13	55,074,828	+18.25	9. Socorro	8	8,979,398	+8.47
4. Roosevelt	32	47,680,523	+2.35				
5. Lea	13	31,145,894	+1.49	Nine County Total	154	376,240,523	+2.70
6. Eddy	6	21,616,590	-1.66	Other Counties Total	4	4,387,795	+1.49
				New Mexico Total	158	380,628,318	+2.69

a/ All known Grade "A" milk produced on farms located in New Mexico.
b/ Compared to top counties for the month in the previous year.

POUNDS OF GRADE A MILK MARKETED BY PRODUCERS LOCATED IN TEXAS BY MONTHS: JANUARY 1997 THROUGH AUGUST 1999, WITH PERCENTAGE COMPARISONS

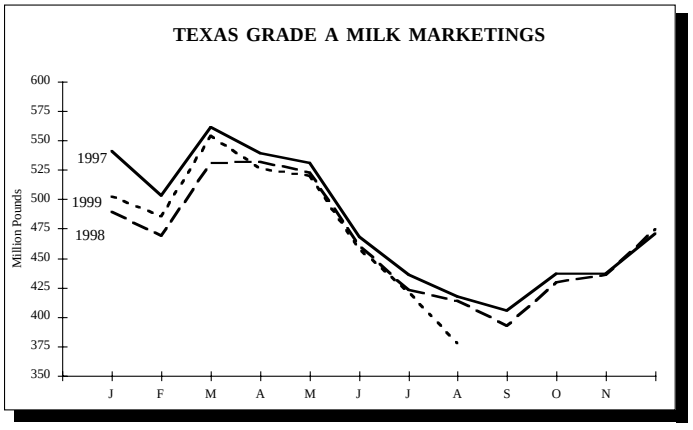
MONTH	1997 POUNDS	Number of Producers	1998 POUNDS	Number of Producers	1999 POUNDS	Number of Producers	PERCENT CHANGE 1998/97	PERCENT CHANGE 1999/98
January	540,918,023	1,610	491,168,340	1,359	501,754,729	1,251	-9.20	+2.16
February	503,177,566	1,591	469,305,849	1,347	486,044,271	1,245	-6.73	+3.57
March	560,823,025	1,566	532,588,272	1,339	553,983,640	1,241	-5.03	+4.02
April	539,258,903	1,553	532,823,237	1,336	525,773,380	1,233	-1.19	-1.32
May	530,457,547	1,550	524,523,430	1,319	519,613,189	1,219	-1.12	-.94
June	468,546,651	1,523	464,057,905	1,321	458,247,406	1,216	-.96	-1.25
July	435,777,197	1,489	422,973,696	1,305	421,340,140	1,206	-2.94	-.39
August	417,271,524	1,463	413,296,879	1,298	377,392,147	1,197	-.95	-8.69
September	405,563,476	1,435	392,427,802	1,300			-3.24	
October	436,528,559	1,408	429,372,951	1,289			-1.64	
November	436,607,225	1,391	435,572,798	1,271			-.27	
December	470,803,040	1,368	474,573,747	1,260			+.80	
Years Total	5,745,732,736		5,582,684,906				-2.84	

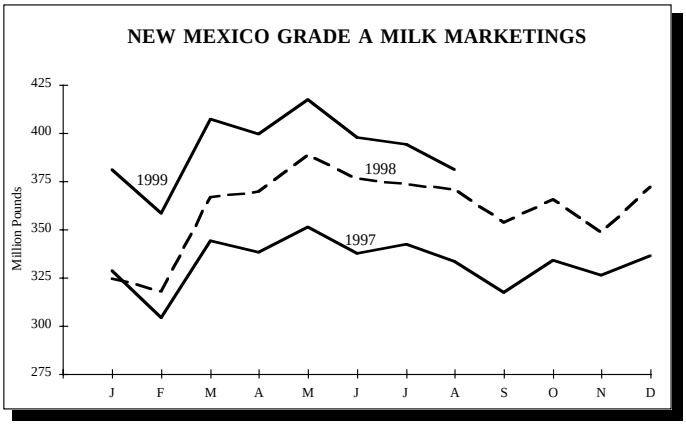
*Revised figures

POUNDS OF GRADE A MILK MARKETED BY PRODUCERS LOCATED IN NEW MEXICO BY MONTHS: JANUARY 1997 THROUGH AUGUST 1999, WITH PERCENTAGE COMPARISONS

MONTH	1997 POUNDS	Number of Producers	1998 POUNDS	Number of Producers	1999 POUNDS	Number of Producers	PERCENT CHANGE 1998/97	PERCENT CHANGE 1999/98
January	328,059,604	156	324,314,276	158	381,115,401	156	-1.14	+17.51
February	303,972,265	156	317,500,751	156	358,049,940	157	+4.45	+12.77
March	343,866,862	157	366,656,779	157	406,789,374	156	+6.63	+10.95
April	337,943,697	157	369,782,775	156	399,229,362	157	+9.42	+7.96
May	350,910,125	158	388,308,155	155	416,852,251	157	+10.66	+7.35
June	337,592,757	158	378,569,203	159	397,483,877	159	+12.14	+5.00
July	342,391,766	159	372,803,402	157	393,796,366	158	+8.88	+5.63
August	333,406,557	156	370,668,016	156	380,628,318	158	+11.18	+2.69
September	317,181,279	159	353,457,040	155			+11.44	
October	333,587,208	158	365,469,264	159			+9.56	
November	326,212,021	158	348,126,652	158			+6.75	
December	336,117,343	157	371,894,332	157			+10.64	
Years Total	3,991,241,484		4,327,550,645				+8.43	

*Revised figures





TEXAS AND NEW MEXICO MARKET COMPONENT TEST

	Butterfat		Protein		Lactose		S-N-F		SCC*	
Month	TX	NM	TX	NM	TX	NM	TX	NM	TX	NM
August	3.44	3.37	3.17	3.11	4.73	4.79	8.60	8.60	424	272
September	3.51	3.40	3.22	3.17	4.72	4.77	8.64	8.65	431	262
October	3.58	3.50	3.30	3.28	4.74	4.78	8.74	8.76	403	255
November	3.71	3.65	3.33	3.32	4.78	4.78	8.81	8.79	387	271
December	3.71	3.67	3.34	3.32	4.78	4.77	8.81	8.80	378	263
Average 1998	3.57	3.52	3.23	3.20	4.77	4.80	8.71	8.70	388	285
January 1999	3.67	3.64	3.30	3.26	4.78	4.78	8.78	8.75	375	261
February	3.59	3.60	3.25	3.24	4.78	4.77	8.74	8.72	351	267
March	3.59	3.57	3.26	3.22	4.81	4.78	8.76	8.71	346	255
April	3.50	3.52	3.23	3.20	4.81	4.79	8.74	8.69	342	242
May	3.52	3.48	3.19	3.16	4.80	4.79	8.70	8.66	348	240
June	3.53	3.45	3.19	3.14	4.76	4.79	8.66	8.63	395	265
July	3.52	3.40	3.20	3.11	4.72	4.74	8.64	8.57	408	290
August	3.54	3.43	3.21	3.14	4.70	4.74	8.63	8.60	429	310

* In thousands.

NEW MEXICO - WEST TEXAS MILK MARKET AT A GLANCE

	REPORTED AUG. 1999	REPORTED JULY 1999	REPORTED AUG. 1998
TOTAL UTILIZATION			
CLASS I	55,526,756	52,220,510	54,551,963
CLASS II	14,944,873	8,549,420	13,737,456
CLASS III/III-A	4,459,918	9,531,364	40,667,505
CLOSING INVENTORY (CLASS I, II AND III)	6,834,848	5,027,804	5,584,545
TOTAL UTILIZATION	81,766,395	75,329,098	114,541,469
DAILY CLASS I UTILIZATION	1,791,186	1,684,533	1,759,741
AUG. -DAILY CLASS I COMPARED TO:		+ 6.33%	+ 1.79%
CLASS I YEAR TO DATE (IN THOUSANDS)	430,142	374,615	434,806
% CHANGE FROM PREVIOUS YEAR	- 1.07%	- 1.48%	- .79%
TOTAL RECEIPTS			
PRODUCER RECEIPTS CLASSIFIED AS CLASS I	52,944,722	49,758,976	53,753,893
PRODUCER RECEIPTS CLASSIFIED AS CLASS II	8,023,067	7,119,497	12,589,949
PRODUCER RECEIPTS CLASSIFIED AS CLASS III/III-A	3,783,365	8,027,589	40,911,085
TOTAL PRODUCER RECEIPTS	64,751,154	64,906,062	107,254,927
OTHER SOURCE A/	10,268,241	4,645,669	3,169,465
OPENING INVENTORY	6,743,484	5,777,367	4,117,077
OVERAGE	3,516		
TOTAL RECEIPTS	81,766,395	75,329,098	114,541,469
DAILY PRODUCER RECEIPTS	2,088,747	2,093,744	3,459,836
AUG. -DAILY PRODUCER RECEIPTS COMPARED TO:		- .24%	- 39.63%
PRODUCER RECEIPTS YEAR TO DATE (IN THOUSANDS)	874,307	809,555	1,355,832
% CHANGE FROM PREVIOUS YEAR	- 35.52%	- 35.16%	- 10.41%
AVERAGE BUTTERFAT TEST OF PRODUCER RECEIPTS	3.494%	3.428%	3.350%
% PRODUCER MILK CLASSIFIED AS CLASS I	81.77%	76.66%	50.12%
NUMBER OF PRODUCERS	85	67	111
AVERAGE DAILY DELIVERY PER PRODUCER	24,573	31,250	31,170
NUMBER OF POOL HANDLERS	9	9	10

A/ INCLUDES MILK, SKIM MILK, CREAM AND SKIM EQUIVALENT OF CONCENTRATED SKIM MILK PRODUCTS

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TEXAS MILK MARKET AT A GLANCE

	REPORTED AUG. 1999	REPORTED JULY 1999	REPORTED AUG. 1998
TOTAL UTILIZATION			
CLASS I	285,263,903	271,836,672	277,039,106
CLASS II	121,990,299	128,642,474	116,422,884
CLASS III/III-A	18,429,608	57,282,797	16,060,307
CLOSING INVENTORY (CLASS I, II AND III)	33,041,397	24,625,336	27,178,231
TOTAL UTILIZATION	458,725,207	482,387,279	436,700,528
DAILY CLASS I UTILIZATION	9,202,061	8,768,925	8,936,745
AUG. -DAILY CLASS I COMPARED TO:		+ 4.94%	+ 2.97%
CLASS I YEAR TO DATE (IN THOUSANDS)	2,197,663	1,912,399	2,131,983
% CHANGE FROM PREVIOUS YEAR	+ 3.08%	+ 3.10%	- 3.08%
TOTAL RECEIPTS			
PRODUCER RECEIPTS CLASSIFIED AS CLASS I	286,266,265	270,371,481	274,873,239
PRODUCER RECEIPTS CLASSIFIED AS CLASS II	97,564,968	115,817,020	90,244,633
PRODUCER RECEIPTS CLASSIFIED AS CLASS III/III-A	20,935,653	48,738,366	16,051,988
TOTAL PRODUCER RECEIPTS	404,766,886	434,926,867	381,169,860
OTHER SOURCE A/	29,417,846	19,948,855	29,519,471
OPENING INVENTORY	24,038,654	27,509,903	25,669,934
OVERAGE	501,821	1,654	341,263
TOTAL RECEIPTS	458,725,207	482,387,279	436,700,528
DAILY PRODUCER RECEIPTS	13,056,996	14,029,899	12,295,802
AUG. -DAILY PRODUCER RECEIPTS COMPARED TO:		- 6.94%	+ 6.19%
PRODUCER RECEIPTS YEAR TO DATE (IN THOUSANDS)	4,526,532	4,121,765	4,005,879
% CHANGE FROM PREVIOUS YEAR	+ 13.00%	+ 13.71%	- 10.27%
AVERAGE BUTTERFAT TEST OF PRODUCER RECEIPTS	3.531%	3.507%	3.435%
% PRODUCER MILK CLASSIFIED AS CLASS I	70.72%	62.16%	72.11%
NUMBER OF PRODUCERS	1,373	1,261	1,453
AVERAGE DAILY DELIVERY PER PRODUCER	9,510	11,126	8,462
NUMBER OF POOL HANDLERS	29	31	29

A/ INCLUDES MILK, SKIM MILK, CREAM AND SKIM EQUIVALENT OF CONCENTRATED SKIM MILK PRODUCTS.