

**Dairy Outlook for 1989**

Until about mid-June, the dairy outlook for 1989 looked fairly straightforward, i.e., increased milk production, good demand, more surpluses, and falling prices, consistent with the 1985 Farm Act. In these subsequent weeks, the impacts of the drought in key milk producing areas has changed the situation in major ways.

**Overview**

In Table 1, U.S. milk production, commercial demand, and CCC purchases of milk (equivalent) are reported for the years 1983 through 1989.

Table 1. Milk Production, Aggregate Commercial Demand, and Surplus Milk, United States, 1983-1989.

	U.S. Milk Production	Commercial Demand	CCC Purchases, Milk Equivalent
1983	139.7 Bil. lbs.	122.5 Bil. lbs.	16.8 Bil. lbs.
1984*	135.5	126.9	8.6
1985*	143.1	130.6	13.2
1986**	143.4	133.3	10.6
1987**	142.5	135.6	6.7
1988***	143.5	136.0	7.8
1989***	141.4	136.3	5.4

\* Diversion program in effect January 1, 1984-March 31, 1985.

\*\* Dairy Termination program in effect April 1, 1986-September 30, 1987.

\*\*\* Forecasts

Note: Calendar 1988 is a Leap Year. The extra day reflects the equivalent of almost 0.4 billion pounds additional milk in both production and commercial demand.

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A number of the estimates presented in this paper were generated at a meeting called by the Milk Industry Foundation in Washington, D.C. on July 19. Participants in the meeting included Robert Cropp from Wisconsin, Andrew Novakovic from Cornell, Charles Shaw and James Nix of USDA, Linwood Tipton of MIF, and me.

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It is evident from the data in Table 1 that a modest drought induced reduction in milk production is anticipated for the second half of 1988 and the first half of 1989. Meanwhile, the rate of growth in commercial demand has slowed substantially in 1988 and is not expected to be up by much in 1989. As a result, the group generating these estimates is not expecting the surplus of milk to go under the "magic" 5 billion pound milk equivalent amount in 1989.

### Milk Production

Milk production is discussed here in the usual sense of milk cow numbers and production per cow. Higher feed costs and short feed supplies are affecting and will affect both of these factors in the next 12 months. Feed costs represent about 37 percent of the total costs of producing 100 pounds of milk. The MIF group's conclusion was that feed costs would increase by 27 percent in this next year (Corn-\$2.50/bu.; SBOM-\$250/ton; Hog-\$120/ton; Silage-\$25/ton). As a result, culling rates and feeding rates, as well as entry, exit, and expansion would all be affected.

Milk cow numbers are getting down near the 10 million mark after bouncing up and down with voluntary supply management programs in recent years. Table 2 reflects milk cow numbers by quarters including estimates for the second half of 1988 and all of 1989.

Table 2. Milk Cow Numbers by Quarters, U.S., 1987-1989.

	<u>1987</u> (000)	<u>1988</u> (000)	<u>1989</u> (000)
Jan-Mar	10,424	10,286	10,050
Apr-Jun	10,339	10,245	10,000
Jul-Sep	10,283	10,160	9,975
Oct-Dec	10,291	10,100	9,975
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Annual	10,334	10,200	10,000

As the cow number projections indicate, the national dairy herd should be down by 1.3 percent in 1988 and almost 2 percent in 1989, with a levelling off in the decline in the second half of 1989.

Production per cow has been increasing at substantial rates in recent years, and the increases will be modified significantly by the drought impact.

Table 3. Milk Production Per Cow, U.S., 1983-1989

<u>Year</u>	<u>Production Per Cow</u>
1983	12,585 lbs.
1984	12,506
1985	12,994
1986	13,260
1987	13,786
1988	14,070
1989	14,140

The 1984 quantity of production per cow at 12,506 pounds reflects what the diversion program did to the upward trend in production per cow. The drought effects in 1988 and 1989 may be observed as having parallel effects. Most of the estimated milk production per cow for 1988 (14,070 pounds) has already been made in the first 7 months of the year. For 1989, with one less production day or 40 pounds less per cow, the increase is judged to be just under 1 percent to 14,140 pounds.

Historically, the interaction of milk prices, feed costs, and beef prices have served quite well in keeping the supply of milk in reasonable balance with the demand for milk. But the Food and Agriculture Act of 1977, with its 80 percent of parity stipulations, elevated prices artificially and moved the industry into the supply-demand imbalance that has been a plague for these several years. Now, in 1988, with the lowest producer milk prices we have seen

since 1979, and with a drought to exacerbate the situation, the historic relationships can be effective again.

Milk-feed price ratio: The milk-feed price ratio has plunged sharply in this summer of 1988 and does not promise to move up to or above the traditional 1.3 to 1.4 decision level until the second half of 1989. Recent ratios as published in Agricultural Prices are as follows:

<u>Year</u>	<u>Milk-Feed Price Ratio*</u>
1985	1.52
1986	1.57
1987	1.63
1988-Jan	1.52
1988-Apr	1.41
1988-Jul	1.15

\* Pounds of 16% protein dairy ration equal in value to one pound of milk. The Dairy Situation publishes milk-feed price ratios computed on a different basis and are generally 0.2 or so higher than those reported in Agricultural Prices.

The roughage side of the ration is equally serious. Alfalfa hay (baled) prices averaged in the \$60-\$70 range per ton in recent years but had jumped to \$88.10 in July. The July price was pulled up by states in the eastern Corn Belt. Pasture conditions are the worst on record, but pastures are no longer a key factor in the milk production picture. Mid-summer rains and shipments of hay at the higher price levels appear to be partially resolving the hay problem.

Milk Cow Replacements: The number of dairy heifers continues to drop, and the ratio of heifers to milk cows continues to drop. The July 1 estimates for these groups just came through (Table 4).

Table 4. Milk Cow Numbers and Milk Replacement Heifers 500 Pounds and Over, U.S., July 1, 1984-1988.

	<u>Milk Cows</u> (000)	<u>Dairy Heifers</u> <u>500 Pounds and Over</u> (000)	<u>Heifers Per</u> <u>100 Milk Cows</u>
July 1, 1984	10,800	4,950	45.8
July 1, 1985	11,050	5,000	45.2
July 1, 1986	10,850	4,700	43.3
July 1, 1987	10,400	4,600	44.2
July 1, 1988	10,250	4,400	42.9

On July 1, 1988, dairy heifers were down by 4.3 percent from a year ago while milk cow numbers were down by only 1.4 percent. However, the ratio of heifers per 100 milk cows, while declining, continues to be relatively high and there is no basis for looking for shorter milk supplies on the basis of the heifer population.

Cull Cow Prices: In 1987, cull cow prices (utility grade, Omaha) averaged \$44.80 per cwt., up by 6-8 per cwt from prices received in the 1982-1986 period. Prices moved close to the \$50 level in the first five months of 1988, but then some panic selling/culling occurred in late June-early July. Cull cow prices have recovered from that situation into the plus \$45 level and will remain relatively strong in the next 12 months. Strong cull cow prices in conjunction with high feed costs have been historic factors in reducing milk supplies.

Milk Cow Prices: The prices for milk cows for milking purposes were at a record high \$1,200 in 1981 when milk prices were at their record high. The cow prices dropped systematically to a recent low of \$820 in 1986, but then a

turnaround occurred. But now in July, 1988, milk cow prices have dropped again to \$970. The lower July price is a result of some of the over-selling that occurred in response to the drought situation in early summer.

Table 5. Prices for Milk Cows, U.S., 1981-1988.

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<u>Year</u>	<u>Milk Cow Price</u>
1981	\$1,200 per cow
1982	1,110
1983	1,030
1984	895
1985	860
1986	820
1987	916
1988-April	1,020
1988-July	970

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Grade A and Grade B Production: The U.S. dairy industry is continuing in the trend toward becoming an all Grade A market. In 1987, 89 percent of the milk marketed was of Grade A quality. Wisconsin and Minnesota produce 58 percent of the Grade B milk in the U.S. Wisconsin at 24 percent Grade B and Minnesota at 29 percent Grade B continue to have an active Grade B market that permits the unregulated Minnesota-Wisconsin grade B price series to be used as the primary price base for virtually all producer milk in the United States.

#### Demand

As the data in Table 1 indicate, commercial demand for milk and dairy products surged a remarkable 10.7 percent, from 122.5 billion pounds to 135.6 billion pounds, in the 1983 through 1987 period. Part of the growth was population, but per capita increases in milk consumption have also been notable.

Table 6. Per Capita Milk Consumption, Milk Equivalent Basis, U.S., 1980-1989.

<u>Year</u>	<u>Commercial Sources</u>	<u>All Sources</u>
1980	508 lbs.	544 lbs.
1981	515	542
1982	517	560
1983	515	573
1984	529	582
1985	540	594
1986	548	594
1987	554	597
1988	552	588
1989	550	586

Factors in the strong demand situation have been low retail prices, high disposable income, and effective promotion programs that have gained strong financial support from the mandatory 15 cent per cwt. assessment on producer milk that was initiated May 1, 1984. However, demand has slackened in 1988. Through the first 5 months of 1988, aggregate commercial disappearance was down by 2.4 percent from a year earlier, mostly due to weakness in the butter market. Fluid sales were up slightly and cheese sales were strong - American cheese plus 1.7 percent and other cheese up 4.9 percent. The most remarkable activity in the milk market concerns nonfat dry milk with sales up by 18.5 percent in the first five months. The CCC is virtually out of the powdered milk business as nonfat dry milk prices in the market place in almost unprecedented fashion have moved into the 80 cent a pound range, well above the CCC purchase price of 72 3/4 cents. Production controls in West Europe, lingering effects of Chernobyl, and reduced powder production in the United States because solids-not-fat are processed into other products have tightened supplies worldwide. As a result, the U.S. has enjoyed an unexpected export

demand for powder in 1988 to countries including Australia, France, Ireland, Japan, and Mexico.

Even so, the total dairy market on a milk equivalent basis is registering a slight downturn for the first time in several years. The aggregate demand figure of 136.0 billion pounds for 1988 reflects a 0.5 percent increase over 1987 (adjusted for Leap Year). The modest increase to 136.3 billion pounds for 1989 reflects some response to higher price levels being projected. The demand estimates look very conservative as compared to the 1983-1987 period, but the lower commercial demand for the first half of 1988 stimulated our cautious tendencies.

#### Dairy Stocks

It is unusual when changes in stock of dairy products are such that they impact considerations of the outlook. For the most part, that is true again in 1988. June 30 stocks of butter and natural American cheese in the past 3 years are shown in Table 7.

Table 7. Cheese and Butter Stocks, Commercial and Government

	June 30, 1986	June 30, 1987	June 30, 1988
Butter	342.8 Mil. lbs.	237.9 Mil. lbs.	295.3 Mil. lbs.
Cheese	794.4	564.7	387.8

Most (78 percent) of the butter in stock June 30, 1988 was held by CCC. Only 18 percent of the cheese was held by CCC. As for nonfat dry milk, CCC held 79 million pounds a year ago, and today its cupboard is bare. The stocks



of cheese and powder are short enough that if milk production drops by more than is estimated, product prices could move sharply upward.

#### Dairy Price Support Program

Until the Drought Relief Act of 1988 was passed recently, Title I (Dairy) of the Food Security Act of 1985 had been implemented without interruption.

The price support schedule of the 1985 Act is set forth as follows:

Year	Support Price (3.67 Pct. BF)
1986	\$11.60 per cwt.
1987 (Jan-Sep)	11.35
1987 (Oct-Dec)	11.10
1988	10.60*
1989	10.10*
1990	9.60*

\* Assume projected over 5 Bil. lbs. m.e. CCC purchases in 1988, 1989, and 1990. Support prices could be increased in 1988, 1989, and 1990 by 50 cents each year if CCC purchases are projected to be less than 2.5 Bil. lbs. m.e.

As we know, we are currently on the \$10.60 support level as the 1985 Act specified. The new amendments will (a) rescind the potential price support cut on January 1, 1989 and hold the support price at the \$10.60 level, and (b) increase the support price to \$11.10 for the months of April, May, and June, 1989. The net effects of these price support changes will be to (1) prevent producer milk prices in 1989 from moving below 1988 levels, and (2) be one factor in moving producer milk prices in 1989 by 25 cents per cwt. above 1988 levels.

Thus far in calendar 1988 (through August 12), CCC purchases have totalled 7.5 billion pounds milk equivalent, about 3 billion pounds more than in the same period in 1987. However, tighter milk supplies seasonally in the second

half of 1988, and the effects of the drought indicate that purchases for all of 1988 will probably be close to the 7.8 billion pounds recorded in Table 1. The recent drought legislation makes the 1989 purchase estimate irrelevant.

The FSA of 1985 continues to have enabling authority to implement another diversion of whole herd buyout program in 1989 and 1990. Supply-demand relationships in 1989 and 1990 and a new Administration will tell us whether such a program will be established.

### **Wholesale Dairy Product Prices**

Substantial price activity is occurring in the major product markets this summer, partly in response to the drought. Generally, a one cent change in butter price can be equated with a 5 cent change per cwt. in the producer milk price; a one cent change in cheese means 10 cents on producer milk; and a one cent change in the powder price means 8 cents on producer milk.

In Table 8, the recent strength reported in the butter price this summer is not unusual because the fat test of producer milk is down in the summer when there is a strong demand for cream. However, the strength in the cheese market goes more to concerns with whether milk supplies will be sufficient later this year to handle cheese market demands. The extraordinary strength in the powder market as noted previously, is explained by a tight world supply.

The price strength in the product markets is already beginning to show up in producer prices. The Minnesota-Wisconsin price jumped by 18 cents per cwt (\$10.34 to \$10.52) from June to July, and the strength in product prices will permit the M-W price to move over the \$11.00 mark later this year.

It is also worth noting that whey solids are being transacted at premium prices. For many years, dry whey was a by-product that gained such low market

prices it was not worth processing. However, the 5.5 pound average yield of dry whey from 100 pounds of milk is currently selling at the 25 cent per pound level, substantially above the 15 cent per pound processing cost. Strong whey prices permit cheese manufacturers to pay higher prices.

Table 8. Wholesale Dairy Product Prices, Selected Dates, 1988\*

	<u>Grade A Butter, Chicago Merc. Exchange</u>	<u>40 Blocks Cheddar, Green Bay</u>	<u>NFDM, Extra Grade Central States</u>
1/8/88	\$1.30/lb.	\$1.19/lb.	73¢/lb.
6/3/88	1.31	1.14	74
6/24/88	1.35	1.16 3/4	74 1/2
7/22/88	1.36	1.16 3/4	77
8/5/88	1.35 1/2	1.20 3/4	79 1/2

\* Note: CCC purchase prices are \$1.32 for butter; \$1.15 1/4 for cheese; and 72 3/4 cents for NFDM.

#### Producer Milk Prices

The average producer milk prices (All Milk Wholesale, 3.67% BF) in the U.S. will average right at \$12.00 per cwt. in 1988, the lowest prices that have been paid dairy farmers since 1979. In 1989, primarily because of the recent price support actions relative to the drought, and because of slightly tighter supplies, milk prices will average 20 to 25 cents higher per cwt. than in 1988.

Table 9 indicates how milk prices have trended downward since reaching their record high in 1981.

Table 9. Average Producer Milk Prices, U.S., 3.67% BF, 1981-1989.

<u>Year</u>	<u>Price per cwt.</u>
1981	\$13.77
1982	13.61
1983	13.58*
1984	13.46**
1985	12.75***
1986	12.51****
1987	12.54*****
1988	12.00*****
1989	12.20

- \* Subtract 48¢ price support assessment
- \*\* Subtract 50¢ diversion assessment
- \*\*\* Subtract 13¢ diversion assessment
- \*\*\*\* Subtract 38¢ herd buyout assessment
- \*\*\*\*\* Subtract 19¢ herd buyout assessment
- \*\*\*\*\* Subtract 2.5¢ G-R-H assessment

Producer milk prices have dropped as the support price has dropped. The support price for milk was at a peak \$13.10 per cwt. for virtually all of 1981, 1982, and 1983. The current support price of \$10.60 represents a 19 percent drop in the support level in the 1984-1988 period; the support price currently is 48 percent of parity. The only reason milk prices dropped when the support price dropped is because milk supplies kept coming on at a faster pace than demand was growing. Now, in late 1988 and early 1989, production is turning downward, but we are also seeing some slack in demand.

The Minnesota-Wisconsin manufacturing milk price is the basic mover of milk prices throughout the United States. Table 10 shows the relationship between the M-W price and the support price for 1988.

Table 10. Support Price and M-W Price, Monthly, 3.5% BF

Month	Support Price	M-W Price
Jan, 1988	\$10.33/cwt	\$10.91/cwt
Feb, 1988		10.60
Mar, 1988		10.43
Apr, 1988		10.33
May, 1988		10.33
Jun, 1988		10.34
Jul, 1988		10.52
Aug, 1988		(10.70)
Sep, 1988		(10.90)
Oct, 1988		(11.00)
Nov, 1988		(11.20)
Dec, 1988		(11.10)
	$\bar{x} = \$10.33$	$\bar{x} = \$10.70$

Note that in the table, the support price is adjusted to its 3.5% BF equivalent of \$10.33 and is not the \$10.60 support price for milk of average BF test (3.67% BF). Competitive market prices as reflected in the M-W dropped to support in the second quarter of 1988. However, if the M-W price does move to \$11.20 late this year as the estimates indicate, supply-demand forces will be making the price, and the support program will not be a significant factor.

With the support level continuing at \$10.33 in 1989, except for the 2nd quarter when it will move to \$10.82, it is likely that the M-W price in 1989 will average very close to the \$10.70 being estimated for 1988. The second quarter increase in the support price may not show up to any degree in the M-W price, but it may be a windfall to plants selling butter, powder, and cheese at higher CCC purchase prices.

### Imports/Exports

The U.S. milk industry on both the supply side and the demand side continues to be described almost totally in domestic terms. Section 22 import quotas continue to limit the amount of imported product to about 1.9 percent of the market. While under periodic challenge or criticism, dairy import quotas are a fact and are not likely to change in the next several years.

Exports also are limited and rarely reach the equivalent of 2 percent of U.S. milk production. High U.S. prices relative to world prices, GATT constraints, and limited market opportunities dampen export prospects. The recent exports of nonfat dry milk at prices above the CCC purchase price are very unusual and will not likely be of extended duration.

#### Imports and Exports of Dairy Products, U.S., 1980, 1985-88

<u>Year</u>	<u>Imports (m.e.)</u> (Mil. lbs.)	<u>Pat. of U.S.</u> <u>Milk Production</u>	<u>Exports (m.e.)</u> (Mil. lbs.)	<u>Pat. of U.S.</u> <u>Milk Production</u>
1980	2,107	1.5 pct.	426	0.3 pct.
1985	2,777	1.9	4,807	3.3
1986	2,733	1.9	1,971	1.4
1987	2,490	1.7	2,434	1.7
1988	(2,600)	(1.8)	(2,000)	(1.4)

### Dairy Cooperatives

A number of the regional dairy cooperatives are in the process of extending their bargaining efforts in this second half of 1988 to increase member income. Lower market prices and the feed cost situation have catalyzed these efforts. One goal is to get prices up to 1987 levels. Over-order premiums on all three price classes of milk are being increased in situations where cooperatives have sufficient bargaining power. As one example, Milk

Marketing Inc. in the greater Ohio area announced over-order prices effective August 1 at levels intended to return blend premiums at 50 cents per cwt. over minimum Federal order blend prices. A number of cooperatives are joining in similar efforts around the country.

### **Federal Milk Market Orders**

Eighty percent of the Grade A milk in the U.S. is subject to price regulation in the Federal order program. Currently there are 43 separate Federal milk order markets. New areas of activity in the Federal order program in 1988 include (a) the first implementation of protein pricing in a Federal milk order (Salt Lake City), and (2) expanding consideration of marketwide service payments from Federal order pools. The GAO got off some hard shots at the order program in a March, 1988 report, but the program continues to draw strong support from most producers and most processors.

### **Regionalism**

Regionalism has emerged as an issue in the milk industry in the 1980's. The dairy price support program establishes a single national manufacturing milk support price, basically because there is a national market for manufactured dairy products. With the recent voluntary supply management programs, producers in regions short of milk get the same assessments as producers in milk surplus regions. And milk surplus regions have pulled down the support price for producers in all regions.

Two current facts are worth noting:

1. In the 1986-87 marketing year, 72 percent of all CCC purchases came from four states - California, Minnesota, Washington, and Wisconsin.

2. In 1988, California is maintaining its remarkable rate of increased production by another 5 percent. Meanwhile, Texas will increase milk production by about 14 percent in 1988 and move past Ohio and possibly Michigan as a major milk producing state.

Much debate will be directed to regional issues, but very little is likely to come of it.

### **National Commission on Dairy Policy**

The much awaited report of the National Commission on Dairy Policy was released March 31, 1988. Presumably, debate on dairy policy, especially price support, will be geared to its recommendations in the next three to four years. No new ground was broken. Key dimensions of the report included: (1) policies directed at permitting survival of the family dairy farm (undefined) should be pursued; (2) a market oriented support price, established by formula should be adopted; (3) standby supply management authority, either in terms of another dairy termination program or a two-tier pricing program, should be authorized; (4) regionalism should be dismissed; and (5) and on-going programs including Federal orders, promotion, and Section 22 import quotas are effectively serving their purposes and only need some fine-tuning.

The new dairy program following expiration of Title I of the Food Security Act of 1985 will be alert to the Commission's Report, but will not be held in any way by its recommendations.



# JUNE, 1988

## MILK COWS AND MILK PRODUCTION BY MONTHS, 21 SELECTED STATES

MONTH	MILK COWS 1/		MILK PER COW 2/		MILK PRODUCTION 2/		
	1987	1988	1987	1988	1987	1988	1988 AS % OF 1987
	THOUSANDS		POUNDS		MILLION POUNDS		PERCENT
JAN	8,805	8,667	1,123	1,177	9,889	10,205	103
FEB	8,766	8,649	1,052	1,126	9,226	9,740	106
MAR	8,727	8,630	1,190	1,234	10,384	10,647	103
APR	8,713	8,618	1,191	1,229	10,381	10,593	102
MAY	8,697	8,627	1,259	1,280	10,949	11,041	101
JUN	8,673	8,588	1,208	1,220	10,475	10,480	100
JUL	8,663		1,200		10,393		
AUG	8,645		1,173		10,138		
SEP	8,645		1,124		9,718		
OCT	8,653		1,148		9,931		
NOV	8,647		1,107		9,572		
DEC	8,667		1,158		10,038		
ANNUAL	8,692		13,932		121,094		

1/ INCLUDES DRY COWS. EXCLUDES HEIFERS NOT YET FRESH. 2/ EXCLUDES MILK SUCKED BY CALVES.

## JUNE 1988 MILK COWS AND MILK PRODUCTION, BY STATES

STATE	MILK COWS 1/		MILK PER COW 2/		MILK PRODUCTION 2/		
	1987	1988	1987	1988	1987	1988	1988 AS % OF 1987
	THOUSANDS		POUNDS		MILLION POUNDS		PERCENT
CALIF	997	1,016	1,550	1,600	1,545	1,626	105
FLA	177	180	1,020	1,040	181	187	103
IDAHO	158	162	1,310	1,360	207	220	106
ILL	213	207	1,110	1,160	236	240	102
IND	195	188	1,040	1,090	203	205	101
IOWA	300	310	1,015	1,020	305	316	104
KY	218	214	900	915	196	196	100
MD	115	108	1,095	1,220	126	132	105
MICH	360	353	1,255	1,275	452	450	100
MINN	820	795	1,125	1,110	923	882	96
MO	224	221	1,110	1,110	249	245	98
N Y	848	813	1,185	1,195	1,005	972	97
N C	111	105	1,140	1,190	127	125	98
OHIO	372	368	1,120	1,100	417	405	97
PA	716	715	1,210	1,180	866	844	97
TENN	201	202	940	930	189	188	99
TEX	327	349	1,060	1,130	347	394	114
VT	175	165	1,170	1,185	205	196	96
VA	144	143	1,140	1,170	164	167	102
WASH	212	214	1,555	1,560	330	334	101
WIS	1,790	1,760	1,230	1,225	2,202	2,156	98
21 STATE TOTAL	8,673	8,588	1,208	1,220	10,475	10,480	100

1/ INCLUDES DRY COWS, EXCLUDES HEIFERS NOT YET FRESH. 2/ EXCLUDES MILK SUCKED BY CALVES.