

## #22: 200 Cow, Sand Bedded Freestall, Flush, Natural Vent. System

**Description:** This 200-cow dairy farm is designed conventionally. The freestall barn has 14' eaves for natural ventilation and sand in the stalls for maximum cow health. Manure is flushed to a gravity sand settling basin, which over time, allows the liquid to seep out into a round storage tank. Solids will accumulate at the basin and are either hauled away or stored until an available application time. Liquids can be applied with an irrigation system. Cows are milked in a low-cost, labor-efficient parabone swing parlor with 12 milker units operated by one person.

### Key Components (see appendix for further description of terms)

<b>Land Base</b>	10 acres	<b>Investment/Cow</b>	\$7,667
<b>Cow Housing</b>	Sand Bedded Freestall	<b>Yearly Revenue/Cow (5 yr. Avg.)</b>	\$3,436
<b>Milking Center</b>	Double 12 Parabone Swing	<b>Yearly Gross Revenue (5 yr. Avg.)</b>	\$687,276
<b>Ventilation</b>	Natural	<b>Total Investment</b>	\$1,533,409
<b>Manure Handling System</b>	Flush to Sand Separation Basin and Round Tank	<b>Return on Assets (Yr. 5)</b>	4.7%

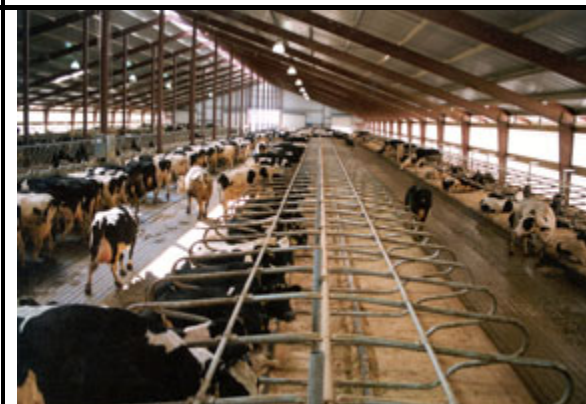
### Picture Examples



Parabone Swing Milking Parlor



Sand Bedded Freestall System



Natural Ventilation Freestall Barn



Round Tank

**Operation Description:**

200 Cow Confinement

**Model # 22**

**Milking Parlor Description:**

Double 12 Parabone Swing

**Freestall Description:**

Sand Bedded Freestall

**Manure System Description:**

Flush to Sand Separation Basin and Round Tank

**Ventilation Description:**

Natural Ventilation

	#	Units	Dollars	Units	Total Investment	Per Cow
Land	10	acres	\$2,800	\$ per acre	\$28,000	\$140
Dairy cows	200	# of head	\$2,000	\$ per head	\$400,000	\$2,000
Freestall barn (lights, loops, mats, and cooling)	145	# of stalls	\$1,800	\$ per freestall	\$261,000	\$1,305
Milking parlor, equipment, tank, holding area and office	24	# of stalls	\$5,600	per stall	\$134,400	\$672
Dry cow and special needs barn	40	cow sp.	\$1,500	\$ per cow sp.	\$60,000	\$300
Round tank (liquid storage)	757,862	gallons	\$0.105	\$ per gallon	\$79,576	\$398
Sand settling basin	90,000	ft <sup>3</sup>	\$2	\$ per ft <sup>3</sup>	\$180,000	\$900
Sand re-conditioning storage	2,250	ft <sup>3</sup>	\$2	\$ per ft <sup>4</sup>	\$4,500	\$23
Commodity storage	2	bays	\$12,000	\$ per bay	\$24,000	\$120
Hay barn and equipment storage	3,200	ft <sup>3</sup>	\$4	\$ per ft <sup>3</sup>	\$12,800	\$64
Silage storage system (plastic bags)					\$84,824	\$424
Site preparation and water supply	10%	% of structure investment			\$84,110	\$421
Tractor	1	quantity	\$79,200	\$ per unit	\$79,200	\$396
Mixer wagon	1	quantity	\$28,000	\$ per unit	\$28,000	\$140
Liquid manure spreader (surface apply)	1	quantity	\$22,000	\$ per unit	\$22,000	\$110
Solid manure spreader	1	quantity	\$29,000	\$ per unit	\$29,000	\$145
Bobcat	1	quantity	\$22,000	\$ per unit	\$22,000	\$110
			<b>Total Investment</b>		\$1,533,409	\$7,667

## Input Summary

<b>Scenario:</b>	200 Cow Confinement, Sand Bedded Freestall, Gravity Settling, Natural Vent.				
<b>Production</b>	<b>Your farm</b>		<b>Cow Flow</b>	<b>Year 1</b>	<b>Year 2</b>
Herd size	200	head	Beginning herd	200	200
Calving interval	13.5	months	Cows entering the herd:		
Average days dry for the herd	60	days	Purchases	70	70
Percent cows in milk	85%	percent	Farm-raised replacements	0	0
Annual cull rate	27%	percent	Cows leaving the herd		
Annual death loss	8%	percent	Culls	54	54
Milk per cow per day (year 1)	70.0	lbs.	Sold	0	0
365 day RHA (year 1)	21,817	RHA	Dead	16	16
			Ending herd size	200	200
<b>Expenses</b>	<b>Your farm</b>		<b>Income</b>	<b>Market value</b>	<b>Cull value</b>
Daily feed cost (milking group)(avg)	\$3.40	cow/day	Milking and dry cows	\$2,000	\$500
Daily feed cost(dry cow group)(avg)	\$1.73	cow/day	12-24 months		\$500
Youngstock diets			6-12 months		\$500
0-2 months	\$0.00	cow/day	2-6 months		\$500
2-6 months	\$0.00	cow/day		<b>Your farm</b>	
6-12 months	\$0.00	cow/day	Milk price	\$14.69	\$/cwt
12-24 months	\$0.00	cow/day	Yearly coop dividend	\$0.00	\$/cwt
Labor costs (year 1)			Bull calf selling price	\$100	\$/head
Hourly labor	\$33,280	dollars	Heifer calf selling price	\$400	\$/head
Salaried labor	\$35,000	dollars	Crop grain sales	\$0	dollars
Annual benefits	\$5,223	dollars	Government payments	\$0	dollars
Total labor	\$73,503	dollars	Other farm income	\$0	dollars
Seed expenses	\$0	dollars	<b>Balance Sheet</b>	<b>Beginning balance for:</b>	
Fertilizer and chemicals	\$0	dollars		<b>January 1</b>	
Marketing costs			<b>Current assets:</b>		
Federal assessment	\$0.00	\$ per cwt.	Cash	\$10,000	dollars
Advertising	\$0.15	\$ per cwt.	Commodities for sale and feed	\$10,000	dollars
Coop Fee	\$0.10	\$ per cwt.	Feeder livestock and cull cows	\$0	dollars
Hauling	\$0.60	\$ per cwt.	Supplies and prepaid expenses	\$10,000	dollars
Annual per cow costs			Investment in growing crops	\$0	dollars
DHI testing	\$16	\$ per cow	Accounts receivable and other	\$0	dollars
Artificial insemination	\$45	\$ per cow	Other current assets	\$0	dollars
Veterinarian, hoof trimming & BST	\$133	\$ per cow	<b>Non-current assets:</b>		
Medicine	\$63	\$ per cow	Farm and equipment:		
Farm supplies and bedding	\$95	\$ per cow	Land	\$28,000	dollars
Fuel & oil	\$20	\$ per cow	Non-farm real estate	\$0	dollars
Utilities	\$60	\$ per cow	Buildings	\$841,100	dollars
Annual costs			Equipment	\$180,200	dollars
Non-dairy farm supplies	\$1,200	dollars	Autos & trucks	\$0	dollars
Non-dairy fuel and oil	\$1,200	dollars	Other assets		dollars
Non-dairy utilities	\$0	dollars	Investment in coops	\$0	dollars
Building repairs	\$5,000	dollars	Contract receivables	\$0	dollars
Machinery and equipment repairs	\$5,000	dollars	Other	\$0	dollars
Rent	\$0	dollars		<b>Beginning balance for:</b>	
Taxes (real estate and p.p.)	\$1,500	dollars	<b>Current liabilities:</b>	<b>January 1</b>	
Farm insurance	\$2,000	dollars	Accounts payable, feed dealers	\$0	dollars
Legal & professional fees	\$1,000	dollars	Accounts payable, trade	\$0	dollars
Custom hire	\$0	dollars	Accrued interest	\$0	dollars
Car and truck costs	\$2,400	dollars	Payroll taxes & wages	\$0	dollars
Contract heifer rearing	\$0	dollars	Operating note	\$0	dollars
Other expense	\$0	dollars	Estimated current portion of debt	\$0	dollars
			Other current liabilities	\$0	dollars
			<b>Long-term Debt:</b>		
			Bank note	\$0	dollars
			Real estate note	\$0	dollars
			Other long-term debt	\$0	dollars

## SE Missouri Dairy

## Dairy Enterprise Budget (5-year Avg.)

## 200 Cow Confinement, Sand Bedded Freestall, Gravity Settling, Natural Vent.

	Herd	Per Cow	Per CWT	Percent
<b>INCOME FROM OPERATIONS:</b>				
Milk sales	\$643,721	\$3,219	\$14.69	93.7%
Sales of youngstock & calves	\$43,556	\$218	\$0.99	6.3%
Other farm income	\$0	\$0	\$0.00	0.0%
Patronage dividend	\$0	\$0	\$0.00	0.0%
Total Gross Receipts	\$687,276	\$3,436	\$15.68	100.0%
<b>OPERATING EXPENSES:</b>				
Feed:				
Feedstuffs	\$245,253	\$1,226	\$5.60	38.0%
Less feed for heifers	\$0	\$0	\$0.00	0.0%
Total feed	\$245,253	\$1,226	\$5.60	38.0%
<b>Herd replacement costs:</b>				
Depreciation--dairy cows	\$64,167	\$321	\$1.46	9.9%
Loss on sale of cows	\$35,223	\$176	\$0.80	5.5%
Total herd replacement costs	\$99,389	\$497	\$2.27	15.4%
<b>Other operating expenses:</b>				
Labor (includes benefits & SS)	\$77,272	\$386	\$1.76	12.0%
Marketing 1/	\$37,247	\$186	\$0.85	5.8%
DHI testing	\$3,200	\$16	\$0.07	0.5%
Artificial insemination	\$9,000	\$45	\$0.21	1.4%
Veterinary, hoof trimming & BST	\$26,600	\$133	\$0.61	4.1%
Medicine	\$12,600	\$63	\$0.29	2.0%
Supplies and bedding	\$19,869	\$99	\$0.45	3.1%
Fuel & oil	\$4,000	\$20	\$0.09	0.6%
Utilities	\$12,615	\$63	\$0.29	2.0%
Repairs--Buildings	\$5,000	\$25	\$0.11	0.8%
Repairs--Machinery & equipment	\$5,000	\$25	\$0.11	0.8%
Rent	\$0	\$0	\$0.00	0.0%
Farm taxes (R.E. & personal prop)	\$1,577	\$8	\$0.04	0.2%
Farm insurance	\$2,103	\$11	\$0.05	0.3%
Legal & professional fees	\$1,051	\$5	\$0.02	0.2%
Custom hire	\$0	\$0	\$0.00	0.0%
Car and truck costs	\$2,400	\$12	\$0.05	0.4%
Other	\$0	\$0	\$0.00	0.0%
Interest	\$0	\$0	\$0.00	0.0%
Depreciation	\$81,816	\$409	\$1.87	12.7%
Less other expenses for raising heifers	\$0	\$0	\$0.00	0.0%
Total other operating expenses	\$301,350	\$1,507	\$6.88	46.6%
<b>TOTAL OPERATING EXPENSES</b>	<b>\$645,992</b>	<b>\$3,230</b>	<b>\$14.74</b>	<b>100.0%</b>
<b>NET INCOME FROM OPERATIONS</b>	<b>\$41,284</b>	<b>\$206</b>	<b>\$0.94</b>	
1/ Includes milk hauling, state and federal promotion, coop/marketing fees, and the cost of marketing beef.				