

5. Southeast Missouri Dairy System Models

#1: 200 Cow Confinement Bedded Pack System

Description: This entry level 200 cow dairy farm is designed to be as capital and labor efficient as possible. Cow housing is provided by a new-generation, self composting, bedded pack barn that is continually filled with sawdust or rice hulls, which may be cleaned out and spread twice per year. Cows are milked in a low-cost, labor-efficient parabone swing parlor with 12 milker units operated by one person. This farm could easily be expanded by adding cow housing barns and doubling the parlor's milking units.

Key Components (see appendix for further description of terms)

Land Base	10 acres	Investment/Cow	\$6,675
Cow Housing	Bedded Pack	Yearly Revenue/Cow (5 yr. Avg.)	\$3,349
Milking Center	Double 12 Parabone Swing	Yearly Gross Revenue (5 yr. Avg.)	\$669,878
Ventilation	Natural	Total Investment	\$1,335,050
Manure Handling System	Composted Deep Bedded Rice Hulls or Sawdust	Return on Assets (Yr. 5)	5.1%

Picture Examples



Feed Alley for Bedded Pack Barn



Manure Storage for Bedded Pack Barn



Bedded Pack Barn with Sawdust



Skid Loader for Cultivating Compost

Operation Description:

200 Cow Confinement

Model # 1

Milking Parlor Description:

Double 12 Parabone Swing

Freestall Description:

Bedded Pack

Manure System Description:

Composted Deep Bedded Rice Hulls

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
Lactating cow housing (with lighting and electrical)	160	# of cow sp.	\$1,500	\$ per cow sp.	\$240,000	\$1,200
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 spaces	\$1,500	\$ per cow sp.	\$60,000	\$300
Manure storage at end of barn and parlor	35,316	ft ³	\$2.00	\$ per ft ³	\$70,632	\$353
Liquid manure storage (parlor)	288,000	gallons	\$0.21	\$ per gallon	\$60,480	\$302
Commodity storage	2	bays	\$12,000	\$ per bay	\$24,000	\$120
Hay barn and equipment storage	3,200	ft ³	\$4	\$ per ft ³	\$12,800	\$64
Silage storage system (plastic bags)					\$84,824	\$424
Site preparation and water supply	10%	% of structure cost			\$68,714	\$344
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
Bobcat	1	quantity	\$22,000	\$ per unit	\$22,000	\$110
			Total Investment		\$1,335,050	\$6,675

Input Summary					
Scenario:	200 Cow Bedded Pack Barn				
Production	Your farm		Cow Flow	Year 1	Year 2
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	28%	percent	Cows leaving the herd		
Annual death loss	7%	percent	Culls	56	56
Milk per cow per day (year 1)	68.0	lbs.	Sold	0	0
365 day RHA (year 1)	21,193	RHA	Dead	14	14
Expenses	Your farm		Ending herd size	200	200
Daily feed cost (milking group)(avg)	\$3.40	cow/day	Income	Market value	Cull value
Daily feed cost(dry cow group)(avg)	\$1.73	cow/day	Milking and dry cows	\$2,000	\$500
Youngstock diets			12-24 months		\$500
0-2 months	\$0.00	cow/day	6-12 months		\$500
2-6 months	\$0.00	cow/day	2-6 months		\$500
6-12 months	\$0.00	cow/day			
12-24 months	\$0.00	cow/day		Your farm	
Labor costs (year 1)			Milk price	\$14.69	\$/cwt
Hourly labor	\$33,280	dollars	Yearly coop dividend	\$0.00	\$/cwt
Salaried labor	\$35,000	dollars	Bull calf selling price	\$100	\$/head
Annual benefits	\$5,223	dollars	Heifer calf selling price	\$400	\$/head
Total labor	\$73,503	dollars	Crop grain sales	\$0	dollars
Seed expenses	\$0	dollars	Government payments	\$0	dollars
Fertilizer and chemicals	\$0	dollars	Other farm income	\$0	dollars
Marketing costs			Balance Sheet	Beginning balance for:	
Federal assessment	\$0.00	\$ per cwt.		January 1	
Advertising	\$0.15	\$ per cwt.	Current assets:		
Coop Fee	\$0.10	\$ per cwt.	Cash	\$10,000	dollars
Hauling	\$0.60	\$ per cwt.	Commodities for sale and feed	\$10,000	dollars
Annual per cow costs			Feeder livestock and cull cows	\$0	dollars
DHI testing	\$16	\$ per cow	Supplies and prepaid expenses	\$10,000	dollars
Artificial insemination	\$45	\$ per cow	Investment in growing crops	\$0	dollars
Veterinarian, hoof trimming & BST	\$133	\$ per cow	Accounts receivable and other	\$0	dollars
Medicine	\$63	\$ per cow	Other current assets	\$0	dollars
Farm supplies and bedding	\$99	\$ per cow	Non-current assets:		
Fuel & oil	\$20	\$ per cow	Farm and equipment:		
Utilities	\$60	\$ per cow	Land	\$28,000	dollars
Annual costs			Non-farm real estate	\$0	dollars
Non-dairy farm supplies	\$1,200	dollars	Buildings	\$687,136	dollars
Non-dairy fuel and oil	\$1,200	dollars	Equipment	\$151,200	dollars
Non-dairy utilities	\$0	dollars	Autos & trucks	\$0	dollars
Building repairs	\$5,000	dollars	Other assets		dollars
Machinery and equipment repairs	\$5,000	dollars	Investment in coops	\$0	dollars
Rent	\$0	dollars	Contract receivables	\$0	dollars
Taxes (real estate and P.P.)	\$1,500	dollars	Other	\$0	dollars
Farm insurance	\$2,000	dollars		Beginning balance for:	
Legal & professional fees	\$1,000	dollars	Current liabilities:	January 1	
Custom hire	\$0	dollars	Accounts payable, feed dealers	\$0	dollars
Car and truck costs	\$2,400	dollars	Accounts payable, trade	\$0	dollars
Contract heifer rearing	\$0	dollars	Accrued interest	\$0	dollars
Other expense	\$0	dollars	Payroll taxes & wages	\$0	dollars
			Operating note	\$0	dollars
			Estimated current portion of debt	\$0	dollars
			Other current liabilities	\$0	dollars
			Long-term Debt:		
			Bank note	\$0	dollars
			Real estate note	\$0	dollars
			Other long-term debt	\$0	dollars

**SE Missouri Dairy
200 Cow Bedded Pack Barn**

Dairy Enterprise Budget (5-year Avg.)

	Herd	Per Cow	Per CWT	Percent
INCOME FROM OPERATIONS:				
Milk sales	\$626,323	\$3,132	\$14.69	93.5%
Sales of youngstock & calves	\$43,556	\$218	\$1.02	6.5%
Other farm income	\$0	\$0	\$0.00	0.0%
Patronage dividend	\$0	\$0	\$0.00	0.0%
Total Gross Receipts	\$669,878	\$3,349	\$15.71	100.0%
OPERATING EXPENSES:				
Feed:				
Feedstuffs	\$245,253	\$1,226	\$5.75	38.9%
Less feed for heifers	\$0	\$0	\$0.00	0.0%
Total feed	\$245,253	\$1,226	\$5.75	38.9%
Herd replacement costs:				
Depreciation--dairy cows	\$64,167	\$321	\$1.50	10.2%
Loss on sale of cows	\$34,223	\$171	\$0.80	5.4%
Total herd replacement costs	\$98,389	\$492	\$2.31	15.6%
Other operating expenses:				
Labor (includes benefits & SS)	\$77,272	\$386	\$1.81	12.3%
Marketing 1/	\$36,241	\$181	\$0.85	5.7%
DHI testing	\$3,200	\$16	\$0.08	0.5%
Artificial insemination	\$9,000	\$45	\$0.21	1.4%
Veterinary, hoof trimming & BST	\$26,600	\$133	\$0.62	4.2%
Medicine	\$12,600	\$63	\$0.30	2.0%
Supplies and bedding	\$20,815	\$104	\$0.49	3.3%
Fuel & oil	\$4,000	\$20	\$0.09	0.6%
Utilities	\$12,615	\$63	\$0.30	2.0%
Repairs--Buildings	\$5,000	\$25	\$0.12	0.8%
Repairs--Machinery & equipment	\$5,000	\$25	\$0.12	0.8%
Rent	\$0	\$0	\$0.00	0.0%
Farm taxes (R.E. & personal prop)	\$1,577	\$8	\$0.04	0.3%
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	\$0.06	0.4%
Other	\$0	\$0	\$0.00	0.0%
Interest	\$0	\$0	\$0.00	0.0%
Depreciation	\$67,409	\$337	\$1.58	10.7%
Less other expenses for raising heifers	\$0	\$0	\$0.00	0.0%
Total other operating expenses	\$286,882	\$1,434	\$6.73	45.5%
TOTAL OPERATING EXPENSES	\$630,524	\$3,153	\$14.79	100.0%
NET INCOME FROM OPERATIONS	\$39,354	\$197	\$0.92	
1/ Includes milk hauling, state and federal promotion, coop/marketing fees, and the cost of marketing beef.				