

APPENDIX E

Annual Livestock Manure Production

TABLE E.1

Annual Manure Production for Dairy Operations
Litres/Day (Ft³/Day)

I. Free Stall

Dairy Type	Storage Volume/Cow in Litres/Day (and Cubic Feet/Day in Parenthesis)		
	Solid Manure Handling *		
	Semi-Solid	= Solid	+ Liquid
Cow	62 (2.2)	48 (1.7)	14 (0.5)
Heifer 0-3 mo	5 (0.2)		
Heifer 4-13 mo	20 (0.7)	17 (0.6)	3 (0.1)
Heifer 13+ mo	31 (1.1)	23 (0.8)	8 (0.3)
Milk Centre/Milking Cow	14 (0.5)		14 (0.5)

* When manure is handled as a solid there is a liquid portion (urine + flush water) that may need to be stored.

Source: Farm Practices Guidelines for Dairy Producers in Manitoba.

II. Tie Stall

Dairy Type	Storage Volume/Cow in Litres/Day (and Cubic Feet/Day in Parenthesis)		
	Solid Manure Handling *		
	Semi-Solid	= Solid	+ Liquid
Cow	65 (2.3)	51 (1.8)	14 (0.5)
Heifer 0-3 mo	5 (0.2)		
Heifer 4-13 mo	20 (0.7)	17 (0.6)	3 (0.1)
Heifer 13+ mo	31 (1.1)	23 (0.8)	8 (0.3)
Milk Centre/Milking Cow	14 (0.5)		14 (0.5)

* When manure is handled as a solid there is a liquid portion (urine + flush water) that may need to be stored.

Source: Farm Practices Guidelines for Dairy Producers in Manitoba.

II. Loose Housing

Dairy Type	Storage Volume/Cow in Litres/Day (and Cubic Feet/Day in Parenthesis)		
	Solid Manure Handling *		
	Semi-Solid	= Solid	+ Liquid
Cow		57 (2.0)	
Heifer 0-3 mo			
Heifer 4-13 mo		17 (0.6)	
Heifer 13+ mo		23 (0.8)	
Milk Centre/Milking Cow			14 (0.5)

* When manure is handled as a solid there is a liquid portion (urine + flush water) that may need to be stored.

Source: Farm Practices Guidelines for Dairy Producers in Manitoba.

TABLE E.2

**Annual Manure Production for Beef Operations
Litres/Day (Ft³/Day)**

Beef Type	Animal Weight kg (lb)	Storage Volume Per Animal in Litres/Day(and Cubic Feet/Day in Parenthesis)	
		No Bedding	Bedding
Feeder	250 (550)	15 (0.5)	18 (0.6)
	350 (770)	20 (0.7)	24 (0.8)
	450 (990)	26 (0.9)	30 (1.1)
	550 (1,210)	32 (1.1)	37 (1.3)
Cow		28 (0.9)	34 (1.2)

Source: Midwest Plan Service MWPS-18 Livestock Waste Facilities Handbook and Environmental Guidelines for Beef Producers in British Columbia (from Farm Practices Guidelines for Dairy Producers in Manitoba).

TABLE E.3

**Annual Manure Production for Hog Operations
Litres/Day (Ft³/Day)**

Hog Type	Storage Volume/Animal in Litres/Day(cubic feet/day)
1 Sow, Farrow to Finish	63.0 (2.2)
1 Sow, Farrow to Weanling	23.0 (0.8)
1 Feeder Hog, Wet-Dry Feeders	5.7 (0.2)
1 Feeder Hog, Dry Feeders	7.1 (0.3)

Source: Farm Practices Guidelines for Hog Producers in Manitoba.