Source: Manure Characteristics MWPS-18 Manure Management Systems Series, December 2000

Table 6. Daily manure production and characteristics, as-excreted

Values are as-produced estimations and do not reflect any treatment. Values do not include bedding. The actual characteristics of manure can vary ± 30% from table values. Increase solids and nutrients by 4% for each 1% feed wasted above 5%

Animal	Size (lbs)	Total manure (lb/day)	(ft3/day)	(gal/day)	Water (%)	Density (lb/ft3)	Nutrient content (lb/day) (N)	(P_2O_5)	(K_2O)
Dairy cattle	150	13	0.20	1.5	88	65	0.05	0.01	0.04
	250	21	0.32	2.4	88	65	0.08	0.02	0.07
Heifer	750	65	1.0	7.8	88	65	0.23	0.07	0.22
Lactating cow	1,000	106	1.7	12.7	88	62	0.58	0.30	0.31
	1,400	148	2.4	17.7	88	62	0.82	0.42	0.48
Dry cow	1,000	82	1.30	9.7	88	62	0.36	0.11	0.28
	1,400	115	1.82	13.6	88	62	0.50	0.20	0.40
Veal	250	9	0.14	1.1	96	62	0.04	0.03	0.06
Beef cattle									
Calf	450	26	0.42	3.1	92	63	0.14	0.10	0.11
High forage	750	62	1.0	7.5	92	62	0.41	0.14	0.25
High forage	1,100	92	1.4	11.0	92	62	0.61	0.21	0.36
High energy	750	54	0.87	6.5	92	62	0.38	0.14	0.22
High energy	1,100	80	1.26	9.5	92	62	0.54	0.21	0.32
Cow	1,000	63	1.00	7.5	88	63	0.31	0.19	0.26
Swine									
Nursery	25	2.7	0.04	0.3	89	62	0.02	0.01	0.01
Grow-Finish	150	9.5	0.15	1.2	89	62	0.08	0.05	0.04
Gestating	275	7.5	0.12	0.9	91	62	0.05	0.04	0.04
Lactating	375	22.5	0.36	2.7	90	63	0.18	0.13	0.14
Boar	350	7.2	0.12	0.9	91	62	0.05	0.04	0.04
Sheep	100	4.0	0.06	0.4	75	63	0.04	0.02	0.04
Poultry									
Layer	4	0.26	0.004	0.031	75	65	0.0035	0.0027	0.0016
Broiler	2	0.18	0.003	0.021	74	63	0.0023	0.0014	0.0011
Turkey	20	0.90	0.014	0.108	75	63	0.0126	0.0108	0.0054
Duck	6	0.33	0.005	0.040	73	62	0.0046	0.0038	0.0028
Horse	1,000	50	0.80	5.98	78	63	0.28	0.11	0.23

**Weights represent the average size of the animal during the stage of production.*

Estimated dairy milking center effluent volume. Use for planning purposes. These values should not be used in place of manure analysis. Based on NRCS *Agricultural Waste Management Field Handbook* , Part 651. Source: MWPS 18, Dec. 2000.

	Units	Milkhouse	Milkhouse & Parlor	Milkhouse & Parlor & Holding area (scraped & flushed)	
				Holding area manure excluded	Holding area manure included
Volume	cu. ft. per day per 1,000 lbs. per animal	0.22	0.60	1.40	1.60
Nitrogen (N)	Lbs. per 1000 gal.	0.72	1.67	1.00	7.50
Phosphorus (P_2O_5)	Lbs. per 1000 gal.	0.58	0.83	0.23	0.83
Potassium (K_2O)	Lbs. per 1000 gal.	1.50	2.50	0.57	3.33

Minimum recommended bedding requirements for Dairy

(lbs. per day per 1000 lbs. of animal weight)
Source: MWPS-18-Dec. 2000

Housing system	Long straw	Chopped straw	Shavings	Sawdust	Sand
Stanchion barn	5.4	5.7	-	-	-
Freestall housing	-	2.7	3.1	3.1	35
Loose housing bedding area	9.3	11.0	-	-	-

Density of bedding materials.

Values are approximate.
Source: MWPS-18-Dec. 2000

A. Loose bedding	Density (lbs. per cu. ft.)
Straw	2.5
Wood Shavings	9
Sawdust	12
Sand	105
Non-legume hay	4
Alfalfa	4
B. Baled bedding	
Straw	5
Wood Shavings	20
Non-legume hay	7
Alfalfa	8
C. Chopped bedding	
Straw	7
Newspapers	14
Non-legume hay	6
Alfalfa	6

Common Conversions

Source: MWPS-18 Dec. 2000

Unit	Times	Equals
%	83.4	lbs. per 1000 gals.
%	10,000	ppm
acre-inch	27,200	gallons
gallons	0.0000368	acre inch
cubic feet	62.4	lbs. water
cubic feet	7.48	gallons
gallons	8.34	lbs. water
K	1.20	K_2O
N	4.43	NO_3
N	1.22	NH_3
N	1.29	NH_4
P	2.29	P_2O_5
lbs. water	0.120	gallons
mg per liter	0.001	%
ppm	0.00834	lbs. per 1000 gals.
ton	2000	lbs.