Appendix to rules 901:10-2-04 and 901:10-2-10:

Daily manure production and characteristics, as-excreted (per head per day)[a]

Values are as-produced estimations and do not reflect any treatment. Use these values only for planning purposes. The actual characteristics of manure for individual situations can vary ±30% or more from table values due to genetics, dietary options and variations in feed nutrient concentration, animal performance, and individual farm management.

Animal	Size[a] (lbs)	Total Manure[b]			Water[c] %	Density[c] (lb/ft^3)	TS[d] (lb/day)	VS[c] (lb/day)	BOD_5 (lb/day)	Nutrient Content		
		lbs	ft^3	gal						(lbs N)[d]	(lbs P_2O_5)[d]	(K_2O)
Dairy												
Calf	150	12	0.18	1.38	88	65	1.4	1.2	0.19	0.06	0.01[c]	0.05
	250	20	0.31	2.30	88	65	2.4	2.0	0.31	0.11	0.02[c]	0.09
Heifer	750	45	0.70	5.21	88	65	6.7	5.7	0.69	0.23	0.08[c]	0.23
	1,000	60	0.93	6.95	88	65	8.9	7.6	0.92	0.30	0.10[c]	0.31
Lactating cow	1,000	111	1.79	13.36	88	62	14.3	12.1	1.67	0.72	0.37[c]	0.40
	1,400	155	2.5	18.70	88	62	20.0	17.0	2.34	1.01	0.52[c]	0.57
Dry cow	1,000	51	0.82	6.14	88	62	6.5	5.5	0.75	0.30	0.11[c]	0.24
	1,400	71	1.15	8.60	88	62	9.1	7.7	1.04	0.42	0.15[c]	0.33
	1,700	87	1.40	10.45	88	62	11.0	9.3	1.27	0.51	0.18[c]	0.40
Veal	250	6.6	0.11	0.79	96	62	0.26	0.11	0.04	0.03	0.02	0.05[d]
Beef												
Calf (confinement)	450	48	0.76	5.66	92	63	3.81	3.20	1.06	0.20	0.09	0.16
	650	69	1.09	8.18	92	63	5.51	4.63	1.54	0.29	0.13	0.23
Finishing	750	37	0.59	4.40	92	63	2.97	2.42[d]	0.60	0.27	0.08	0.17
	1,100	54	0.86	6.46	92	63	4.35	3.55[d]	0.89	0.40	0.12	0.25
Cow (confinement)	1,000	92	1.46	10.91	88	63	11.0	9.38	2.04	0.35	0.18	0.29
Swine												
Nursery	25	1.9	0.03	0.23	89	62	0.21	0.17	0.06	0.02	0.01	0.01
	40	3.0	0.05	0.37	89	62	0.33	0.27	0.10	0.03	0.01	0.02
Finishing	150	7.4	0.12	0.89	89	62	0.82	0.65	0.23	0.09	0.03	0.04
	180	8.9	0.14	1.07	89	62	0.98	0.78	0.28	0.10	0.04	0.05
	220	10.9	0.18	1.31	89	62	1.20	0.96	0.34	0.13	0.05	0.06
	260	12.8	0.21	1.55	89	62	1.41	1.13	0.41	0.15	0.05	0.08
	300	14.8	0.24	1.79	89	62	1.63	1.30	0.47	0.17	0.06	0.09
Gestating	300	6.8	0.11	0.82	91	62	0.61	0.52	0.21	0.05	0.03	0.04
	400	9.1	0.15	1.10	91	62	0.82	0.70	0.28	0.06	0.04	0.05
	500	11.4	0.18	1.37	91	62	1.02	0.87	0.35	0.08	0.05	0.06
Lactating	375	17.5	0.28	2.08	90	63	1.75	1.58	0.58	0.17	0.11	0.13
	500	23.4	0.37	2.78	90	63	2.34	2.11	0.78	0.22	0.15	0.18
	600	28.1	0.45	3.33	90	63	2.81	2.53	0.93	0.27	0.18	0.21
Boar[c]	300	6.2	0.10	0.74	91	62	0.57	0.51	0.20	0.04	0.03	0.03
	400	8.2	0.13	0.99	91	62	0.75	0.67	0.26	0.06	0.05	0.05
	500	10.3	0.17	1.24	91	62	0.94	0.84	0.33	0.07	0.06	0.06
Sheep												
Feeder lamb[c]	100	4.1	0.06	0.5	75	63	1.05	0.91	0.10	0.04	0.02	0.04
Poultry												
Layer	3	0.15	0.002	0.017	75	65	0.037	0.027	0.008	0.0026	0.0008	0.0012
Broiler	2	0.19	0.003	0.023	74	63	0.050	0.038	0.011	0.0021	0.0014	0.0010
Turkey (female)	10	0.47	0.007	0.056	75	63	0.117	0.088	0.034	0.0078	0.0051	0.0034

Turkey (male)	20	0.74	0.012	0.088	75	63	0.186	0.139	0.054	0.0111	0.0074	0.0048
Duck	4	0.44	0.007	0.053	73	62	0.118	0.089	0.016	0.0043	0.0034	0.0026
Horse												
Sedentary	1,000	54.4	0.88	6.56	86[d]	62	7.61	6.5	1.52	0.18	0.06	0.06[d]
Intense Exercise	1,000	55.5	0.90	6.70	86[d]	62	7.78	6.6	1.56	0.30	0.15	0.23[d]

TS = total solids; VS = volatile solids; BOD_5 = the oxygen used in the biological oxidation of organic matter in 5 days at 68F, which is an industry standard that shows wastewater strength.

[a] Use linear interpolation to obtain values for weights not listed in the table.

[b] Calculated using TS divided by the solids content percentage.

[c] Based on MidWest Plan Service historical data.

[d] Values calculated or interpreted using diet based formulas being considered for ASAE Standard D384: Manure Production and Characteristics

Source: MWPS-18 (2) Manure Characteristics (2005). Mid West Plan Service, Iowa State University: Ames, IA