

APPENDIX I

Development of the Animal Unit

BACKGROUND

The application of livestock manure on farm land presents an opportunity to recycle organic material and reduce the dependency on inorganic fertilizers. While livestock manure may be highly desirable as a fertilizer and a soil conditioner, too much of it must be avoided to prevent excessive build-up of elements like nitrogen and phosphorus in the soil. To equate livestock numbers with nitrogen production, the concept of a Livestock Waste Unit was developed in the 1960s in the United States. Reasoning that corn required 150 to 170 pounds (68 to 77 kilograms) of nitrogen per acre to maximize production, a Livestock Waste Unit was determined to be that number of animals required to produce 73 kilograms of nitrogen annually.

Although storage and application losses need to be determined to calculate the amount of nitrogen actually delivered for plant use, the Livestock Waste Unit remains as a measure of nitrogen production for each species of animal. Over time the efficiency of animals has improved due to both genetic and nutritional advances. Recalculation of nitrogen production and hence Livestock Waste Units was therefore warranted. In order to avoid confusion between the revised values and the old Livestock Waste Units previously used in Manitoba, the new values developed in 1994 are referred to as "Animal Units." The definition of the animal unit is the number of animals required to excrete a total of 73 kilograms of nitrogen in a 12 month period.

ANIMAL UNIT (A.U.) SUMMARY TABLE

	A.U. Produced By One Livestock	Livestock Producing One A.U.
Dairy Milking cows, including associated livestock	2.000	0.5
Beef Beef cows, including associated livestock Backgrounder Summer pasture/replacement heifers Feeder cattle	1.250 0.500 0.625 0.769	0.8 2 1.6 1.3
Pigs Sows, farrow to finish (110-115 kg) Sows, farrow to weanling (up to 5 kg) Sows, farrow to nursery (23 kg) Weanlings (5-23 kg) Growers/finishers (23-113 kg) Boars (artificial insemination operations)	1.250 0.250 0.313 0.033 0.143 0.200	0.8 4 3.2 30 7 5
Chickens Broilers Roasters Layers Pullets Broiler breeder pullets Broiler breeder hens	0.0050 0.0100 0.0083 0.0033 0.0033 0.0100	200 100 120 300 300 100
Turkeys Broilers Heavy toms Heavy hens	0.010 0.020 0.010	100 50 100
Horses Mares, including associated livestock	1.333	0.75
Sheep Ewes, including associated livestock Feeder lambs	0.200 0.063	5 16
Other livestock or operation type - Please inquire with your local Manitoba Agriculture, Food and Rural Initiatives GO Team office.		