

Supplementary Materials S1

Table S1. Composition of the excrements of a dog (feces and urine). The results for “feces to soil” are average values based on three samples (each from a different dog), analyzed by Raiffeisen Laborservice (Raiffeisen Rhein-Ahr-Eifel Handelsgesellschaft mbH Laborservice (laboratory service), Im Mühlenfeld 22-28, 53881 Euskirchen). The results for “urine to soil” are average values based on the urine collected from 3 dogs on 5 days by Schaepe 2011 (Schaepe, K. Untersuchungen an Hunden zur Rohrnährstoffverdaulichkeit Sowie Kot- und Harnzusammensetzung bei Variation der Rohaschegehalte im Futter durch Unterschiedlich Knochenreiche Schlachtprodukte. Ph.D. Thesis, Tierärztliche Hochschule Hannover, Hannover Deutschland, Germany, 2011).

Inputs	Unit	Data	Data source
Feces to soil			
Average amount of feces	kg/dog/day	0.3	Rounded average weight of feces (Schaepe 2011)
Nitrogen	kg/300g feces	0.00453	Average of 3 samples (Raiffeisen Laborservice)
Phosphate	kg/300g feces	0.00324	Average of 3 samples (Raiffeisen Laborservice)
Potassium	kg/300g feces	0.00044	Average of 3 samples (Raiffeisen Laborservice)
Magnesium	kg/300g feces	0.0006	Average of 3 samples (Raiffeisen Laborservice)
Calcium	kg/300g feces	0.0045	Average of 3 samples (Raiffeisen Laborservice)
Sodium	kg/300g feces	0.0002	Average of 3 samples (Raiffeisen Laborservice)
Sulphur	kg/300g feces	0.00105	Average of 3 samples (Raiffeisen Laborservice)
Boron	kg/300g feces	0.00000054	Average of 3 samples (Raiffeisen Laborservice)
Cobalt	kg/300g feces	0.00000004	Average of 3 samples (Raiffeisen Laborservice)
Iron	kg/300g feces	0.0000046	Average of 3 samples (Raiffeisen Laborservice)
Copper	kg/300g feces	0.0001008	Average of 3 samples (Raiffeisen Laborservice)
Manganese	kg/300g feces	0.00000859	Average of 3 samples (Raiffeisen Laborservice)
Molybdenum	kg/300g feces	0.0000001	Average of 3 samples (Raiffeisen Laborservice)
Zinc	kg/300g feces	0.000074	Average of 3 samples (Raiffeisen Laborservice)
Organic Substance	kg/day	0.285	0.3 minus the sum of the metals above
Dog urine to soil			
Average amount of urine	l/dog/day	0.4	Rounded average amount of urine (Schaepe 2011)
Calcium	g/0.4l urine	0.0258	Average value from 6 dogs on one day (Schaepe 2011)
Phosphate	g/0.4l urine	0.462	Average value from 6 dogs on one day (Schaepe 2011)
Magnesium	g/0.4l urine	0.0207	Average value from 6 dogs on one day (Schaepe 2011)
Sodium	g/0.4l urine	0.364	Average value from 6 dogs on one day (Schaepe 2011)
Potassium	g/0.4l urine	0.7783	Average value from 6 dogs on one day (Schaepe 2011)
Chlorine	g/0.4l urine	0.3924	Average value from 6 dogs on one day (Schaepe 2011)

Supplementary Materials S2

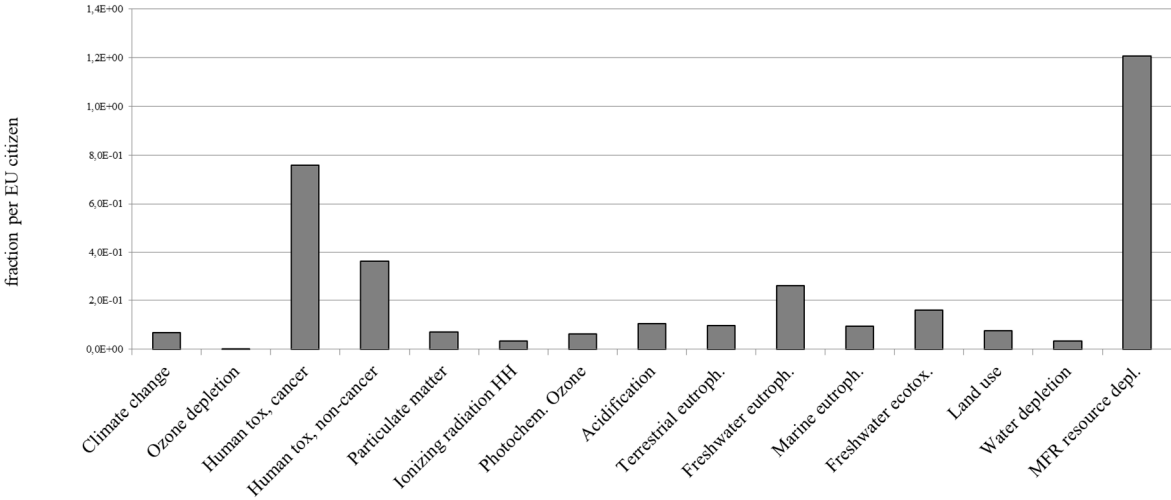


Figure S1. LCIA results for an average dog (15 kg, life expectancy of 13 years) and an average pick-up-rate of 15% normalized to the total impacts occurring in the EU domestic market per person per year.