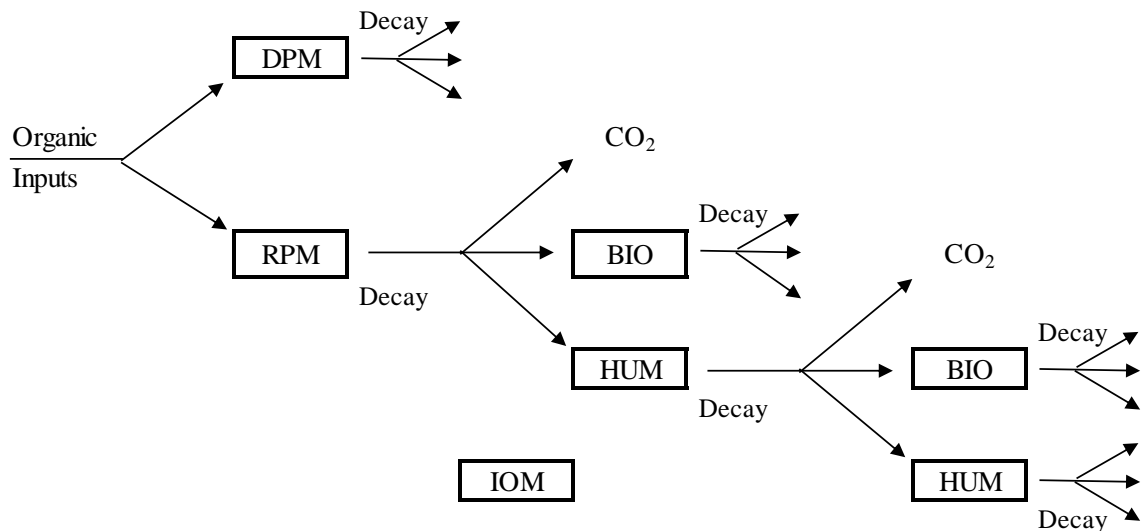


Figure S1 Schematic showing the flow of carbon through the Rothamsted turnover model (RothC-26.3) with rate constants and turnover times for the different carbon pools. Redrawn from Jenkinson et al (1994).



	Rate constants	Turnover time is 1/rate constant
DPM : Decomposable plant material	DPM : 10.0	DPM : 0.1 years
RPM : Resistant plant material	RPM : 0.3	RPM : 3.3 years
BIO : Microbial biomass	BIO : 0.66	BIO : 1.5 years
HUM : Humified organic matter	HUM : 0.02	HUM : 50.0 years
IOM : Inert organic matter		

Plant material entering the soil is partitioned into two input compartments; decomposable plant material (DPM) and resistant plant material (RPM). Both DPM and RPM are decomposed in the soil by first-order processes to CO₂, which is lost from the system, and to microbial biomass (BIO) and humified organic matter (HUM) which are both retained in the soil. Both BIO and HUM are decomposed further to give more CO₂, biomass and humified matter. The soil is also assumed to contain a small (*c.* 10 %) amount of inert organic material (IOM) which is inert to microbial decomposition, (at least in the short term).