

**TABLE S6.** Fitting of an empirical model to %N and %P measurements made during growth of whole crop biomass. The model is  $\%N = aW^b$ ;  $\%P = cW^d$  and  $N:P = (a/c)W^{(b-d)}$ . For each experiment the values of the coefficients a, b, c and d were first determined and then used to calculate the N:P ratios corresponding to each value of W. The original measurements of N:P were then regressed against these calculated values. The calculations were made separately for the data for each of the 5 crops given in Fig.1 and given in the following tables.

Fitted values of a, b, c, and d and values of  $r^2$

Experiment	a	b	$r^2$	c	d	$r^2$
Onions 92 all varieties	3.065	-0.177	0.872	0.303	0	-
French beans 73	2.936	-0.194	0.852	0.297	-0.0702	0.784
Peas 72	3.944	-0.153	0.882	0.426	-0.0697	0.661
Swede 72	3.367	-0.223	0.825	0.466	-0.0359	0.732
Turnip 72	4.375	-0.157	0.742	0.614	-0.0488	0.644

Gradients of proportional relationships between measured and calculated values of N:P and the corresponding values of  $r^2$

Experiment	Gradient	$r^2$	No of values
Onions 92 all varieties	0.996	0.925	18
French beans 73	0.978	0.711	17
Peas 72	1.008	0.714	14
Swede 72	0.993	0.777	19
Turnip 72	1.007	0.652	19

That the gradients are always near one indicates that the model gives an excellent fit to the data.