

Tableau 8. Paramètres utilisés pour les espèces boliviennes (W = saison humide ; D = saison sèche).

Symbol	Parameters	Units	References	Er	Ar	St	Pa	Ba	Lu
$\gamma_{(i)}$	Nitrogen-fixing cost	—	Cannell & Thornley 2000 [Ryle <i>et al.</i> 1979, Phillips 1980, Sheehy 1987]	1	1	1	1	1	0.20
r_g	Growth respiration rate	$g_C g_C^{-1} d^{-1}$	Ruimy 1995	0.25	0.25	0.25	0.25	0.25	0.25
m^N	Maintenance respiration rate	$g_C g_N^{-1} d^{-1}$	Martineau 2001	0.10	0.08	0.08	0.05	0.05	0.10
$LMA_{(i)}$	Leaf mass per area	$g_{DM} m^{-2}$	Sarps 2001	42.9	84.2	945.1	131.4	154.8	36.1
$\omega_{(i)}$	Mean leaf angle	degree	Sarps 2001	61	37	77	61	58	60
$k_{(i)}$	Light extinction coefficient	—	Sinoquet <i>et al.</i> (2000), Bonhomme & Varlet-Grancher (1977)	0.69	0.87	0.55	0.69	0.72	0.70
$H_{max(i)}$	Maximal height	m	Sarps 2001	0.10	0.30	0.50	0.70	0.70	0.25

Photosynthesis

$P_{max(i)}$	Photosynthetic gross rate at saturating light	$\mu mol m^{-2} s^{-1}$	Saugier & Pontailier 2003	W	25.6	13.6	17.7	22.2	20.0	21.0
$\alpha_{(i)}$	Photochemical efficiency	—		W	0.086	0.040	0.057	0.061	0.063	0.045
$\theta_{(i)}$	Non-rectangular hyperbola curve	—		W	0.345	0.150	0.350	0.353	0.187	0.531
Modification factor for photosynthesis in dry season		—		D	0.0	0.3	1.0	0.4	0.4	0.0

Nitrogen concentrations $n_{(i,j)}$

$n_{(i,leaf)}$	Leaf	/ 100 $g_N g_{DM}^{-1}$	Coûteaux (p.c.) and Martineau (estimation) Roots and stems have been taken as leaves in the absence of data.	2.18	0.72	0.63	1.18	1.12	2.73
$n_{(i,stem)}$	Stem			1.90	0.72	0.63	0.51	0.57	2.73
$n_{(i,seed)}$	Seed			1.90	0.72	0.63	0.51	1.12	2.73
$n_{(i,root)}$	Root			1.90	1.06	0.63	0.51	0.36	2.73
$n_{(i,shoot)}^D$	Dead mass			1.90	0.72	0.63	0.51	0.56	2.73

Mortality rate $s^C_{(i,j)}$

$s^C_{(i,leaf)}$	Leaf W	/ 100 $g_C g_C^{-1} d^{-1}$	Martineau (calibration) The high values result from high values of photosynthesis.	8.50	2.60	0.20	0.85	0.40	3.00
$s^C_{(i,stem)}$	Stem W			8.56	2.60	0.20	0.80	0.52	3.00
$s^C_{(i,seed)}$	Seed W			0.50	2.20	0.20	0.50	0.50	0.50
$s^C_{(i,root)}$	Root W			8.56	2.60	0.20	0.80	0.57	3.00
$s^C_{(i,leaf)}$	Leaf D	/ 100 $g_C g_C^{-1} d^{-1}$	Martineau (calibration)	8.00	1.20	0.20	0.80	0.40	1.20
$s^C_{(i,stem)}$	Stem D			4.35	1.01	0.50	0.50	0.30	1.00
$s^C_{(i,seed)}$	Seed D			0.05	0.05	0.05	0.05	0.05	0.05
$s^C_{(i,root)}$	Root D			4.33	0.80	1.40	0.50	0.29	2.00

Assimilate allocation $f^C_{(i,j)}$

Leaf	$g_C g_C^{-1}$	Sarps 2001	0.27	0.35	0.35	0.15	0.11	0.13
Stem			0.15	0.01	0.01	0.40	0.51	0.18
Seed			0.19	0.14	0.04	0.02	0.06	0.34
Root			0.38	0.50	0.60	0.43	0.32	0.35
%Dead mass			0.09	0.50	0.89	0.20	0.15	0.28

Soil properties (daily nitrogen supply is assumed to be constant)

$$N_{soil} = 0.03 g_N m^{-2} d^{-1}$$

Legend: **Ar:** *Aristida asplundii*; **Ba:** *Baccharis incarum*; **d:** day; **Er:** *Erodium cicutarium*; **g_C:** gram of carbon; **g_{DM}:** gram of dry matter; **g_N:** gram of nitrogen; **Lu:** *Lupinus buchtienii*; **m:** meter; **Pa:** *Parastrephia lepidophylla*; **p.c.:** personal communication; **St:** *Stipa ichu*; **s:** second.