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附录III　BIOME-BGC模型生理生态参数表

Supplement III　Values of the eco-physiological parameters used in the BIOME-BGC model

参数 Parameter	单位 Unit	取值 Value	来源 Data source
生长季开始 Yearday to start new growth	flag	100	Wei, 2019
生长季结束 Yearday to end litterfall	flag	290	Wei, 2019
展叶期占生长季比例 Transfer growth period as fraction of growing season	prop.	0.263	Wei, 2019
落叶期占生长季比例 Litterfall as fraction of growing season	prop.	0.263	Wei, 2019
叶片和细根年周转率 Annual leaf and fine root turnover fraction	a^{-1}	1.0	Set value
活立木年周转率 Annual live wood turnover fraction	a^{-1}	0.7	Default value
整株植物死亡率 Annual whole-plant mortality fraction	a^{-1}	0.02	Default value
植物火烧死亡率 Annual fire mortality fraction	a^{-1}	0	Set value
细根与叶片碳分配比 New fine root carbon : new leaf carbon	$kg \cdot kg^{-1}$	0.992	Fu, 2011
茎与叶片碳分配比 New stem carbon : new leaf carbon	$kg \cdot kg^{-1}$	0.965	Fu, 2011
活木与木质组织碳分配比 New live wood carbon : new total wood carbon	$kg \cdot kg^{-1}$	1.0	Default value
粗根与茎碳分配比 Coarse root carbon : new stem carbon	$kg \cdot kg^{-1}$	0.934	Fu, 2011
当前生长比例 Current growth proportion	prop.	0.5	Default value
叶片碳氮比 Carbon (C) : nitrogen (N) of leaves	$kg \cdot kg^{-1}$	22.41	Measured value
凋落物碳氮比 C:N of leaf litter, after retranslocation	$kg \cdot kg^{-1}$	34.538	Mu *et al*., 2020
细根碳氮比 C:N of fine roots	$kg \cdot kg^{-1}$	70.14	Measured value
活木质组织碳氮比 C:N of live wood	$kg \cdot kg^{-1}$	37.045	Fu, 2011
死木质组织碳氮比 C:N of dead wood	$kg \cdot kg^{-1}$	69.647	Fu, 2011
凋落物易分解物质比例 Leaf litter labile proportion	%	0.35	Mu *et al*., 2020
凋落物纤维素比例 Leaf litter cellulose proportion	%	0.48	Mu *et al*., 2020
凋落物木质素比例 Leaf litter lignin proportion	%	0.17	Mu *et al*., 2020
细根易分解物质比例 Fine root labile proportion	%	0.30	Default value
细根纤维素比例 Fine root cellulose proportion	%	0.45	Default value

附录 III (续) **Supplement III** (Continued)

参数 Parameter	单位 Unit	取值 Value	来源 Data source
细根木质素比例 Fine root lignin proportion	%	0.25	Default value
死木质组织纤维素比例 Dead wood cellulose proportion	%	0.76	Default value
死木质组织木质素比例 Dead wood lignin proportion	%	0.24	Default value
冠层截留系数 Canopy water interception coefficient	$LAI^{-1}\cdot d^{-1}$	0.039	Optimized value
冠层消光系数 Canopy light extinction coefficient	–	0.48	Optimized value
叶面积与投影叶面积指数比 All-sided to projected leaf area ratio	$LAI\cdot LAI^{-1}$	2.6	Default value
冠层比叶面积 Canopy average specific leaf area	$m^2\cdot kg^{-1}$	18.0	Wang *et al*., 2017
阴生叶与阳生叶比叶面积比例 Ratio of shaded specific leaf area (SLA) : sunlit SLA	$SLA\cdot SLA^{-1}$	2.0	Default value
酮糖二磷酸羧化酶中氮含量占叶氮含量比例 Fraction of leaf N in rubisco	–	0.24	Wei, 2019
最大气孔导度 Maximum stomatal conductance	$m\cdot s^{-1}$	0.003	Default value
表皮层导度 Cuticular conductance	$m\cdot s^{-1}$	0.000 01	Default value
边界层导度 Boundary layer conductance	$m\cdot s^{-1}$	0.1	Optimized value
气孔开始缩小时叶片水势 Leaf water potential: start of conductance reduction	MPa	−1.77	Qin *et al*., 2021
气孔完全闭合时叶片水势 Leaf water potential: complete conductance reduction	MPa	−2.51	Qin *et al*., 2021
气孔开始缩小时饱和水汽压差 Vapor pressure deficit: start of conductance reduction	Pa	1 124.9	Measured value
气孔完全闭合时饱和水汽压差 Vapor pressure deficit: complete conductance reduction	Pa	3 982.7	Measured value

默认值均来自 White 等(2000), 中文参数名称及单位参考康满春等(2019)。

Default values were from White *et al*. (2000), and Chinese parameter names and units were adapted from Kang *et al*. (2019).

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