



Table S1. Codon usage in chloroplast genome of *Cyperus niveus*

Codon	Amino Acid	% of Amino Acis	Frequency
ATT	I	50.00%	970
AAA	K	80.50%	941
TTT	F	69.70%	866
TTA	L	37.70%	865
GAA	E	76.10%	852
AAT	N	79.40%	697
CAA	Q	83.40%	662
TAT	Y	80.20%	653
ATA	I	33.60%	651
GAT	D	84.20%	641
GGA	G	42.20%	618
GCT	A	49.40%	605
GGT	G	39.80%	582
CTT	L	22.10%	506
TCT	S	33.00%	502
ACT	T	46.50%	488
ATG	M	99.80%	482
GTT	V	39.60%	449
GTA	V	37.40%	424
TTG	L	18.30%	419
CCT	P	47.80%	405
GCA	A	32.30%	395
AGA	R	34.10%	394
TTC	F	30.30%	377
TGG	W	100%	356
ACA	T	33.40%	351
CAT	H	78.70%	337
AGT	S	21.40%	326
TCA	S	21.30%	324
CGT	R	27.70%	320
ATC	I	16.40%	318
CTA	L	12.90%	295
GAG	E	23.90%	268
CCA	P	29.80%	253
CGA	R	21.30%	246
AAG	K	19.50%	228
TGT	C	79.70%	189
AAC	N	20.60%	181
TCC	S	11.80%	180
GGG	G	11.60%	170
TAC	Y	19.80%	161
GCC	A	11.80%	144
ACC	T	13.60%	143
GTC	V	12.30%	139
CAG	Q	16.60%	132

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Codon	Amino Acid	%	Frequency
GTG	V	10.80%	122
GAC	D	15.80%	120
CCC	P	13.70%	116
CTC	L	5.00%	114
AGC	S	6.80%	103
CTG	L	4.10%	95
GGC	G	6.40%	93
CAC	H	21.30%	91
AGG	R	7.60%	88
TCG	S	5.80%	88
GCG	A	6.50%	80
CCG	P	8.70%	74
ACG	T	6.50%	68
CGC	R	4.70%	54
CGG	R	4.70%	54
TGC	C	20.30%	48
TAA	*	50.60%	42
TAG	*	26.50%	22
TGA	*	22.90%	19
TTG	M	0.20%	1

Table S2. Amino acids frequency in chloroplast genome of *Cyperus niveus*

Amino Acid	Number	%
A	1,224	5.80%
C	237	1.10%
D	761	3.60%
E	1,120	5.30%
F	1,243	5.90%
G	1,463	7.00%
H	428	2.00%
I	1,939	9.20%
K	1,169	5.60%
L	2,294	10.90%
M	483	2.30%
N	878	4.20%
P	848	4.00%
Q	794	3.80%
R	1,156	5.50%
S	1,523	7.30%
T	1,050	5.00%
V	1,134	5.40%
W	356	1.70%
Y	814	3.90%
*	83	0.40%
All	20,997	100%