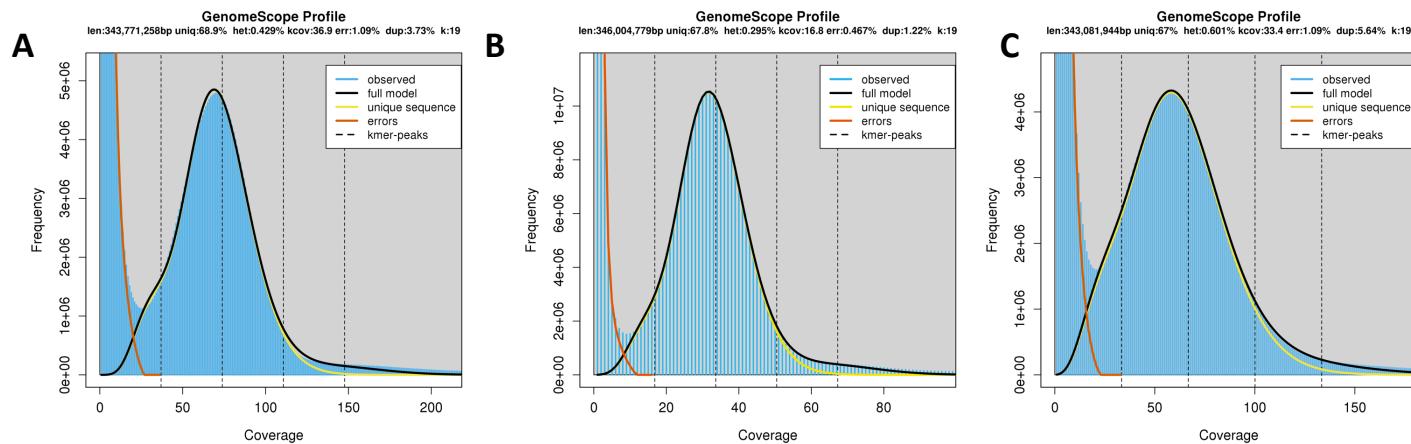




Figure S1. *Wolffia australiana* under growth assay.



D

	wa7733		wa8730		wa7540	
property	min	max	min	max	min	max
Heterozygosity	0.43%	0.43%	0.29%	0.30%	0.60%	0.60%
Genome length (bp)	343,520,172	343,771,258	345,863,147	346,004,779	342,809,947	343,081,944
Genome repeat (bp)	106,901,092	106,979,228	111,346,478	111,392,074	112,983,649	113,073,294
Genome unique (bp)	236,619,080	236,792,030	234,516,670	234,612,705	229,826,298	230,008,650
Repeat (%)	31.1	31.1	32.2	32.2	33.0	33.0
Model fit	92.21%	96.13%	94.73%	98.29%	94.74%	98.34%
Read error (%)	1.09%	1.09%	0.47%	0.47%	1.09%	1.09%
Kmer	19		19		19	

Figure S2. Genome size estimated by Kmer (k=19) frequency.

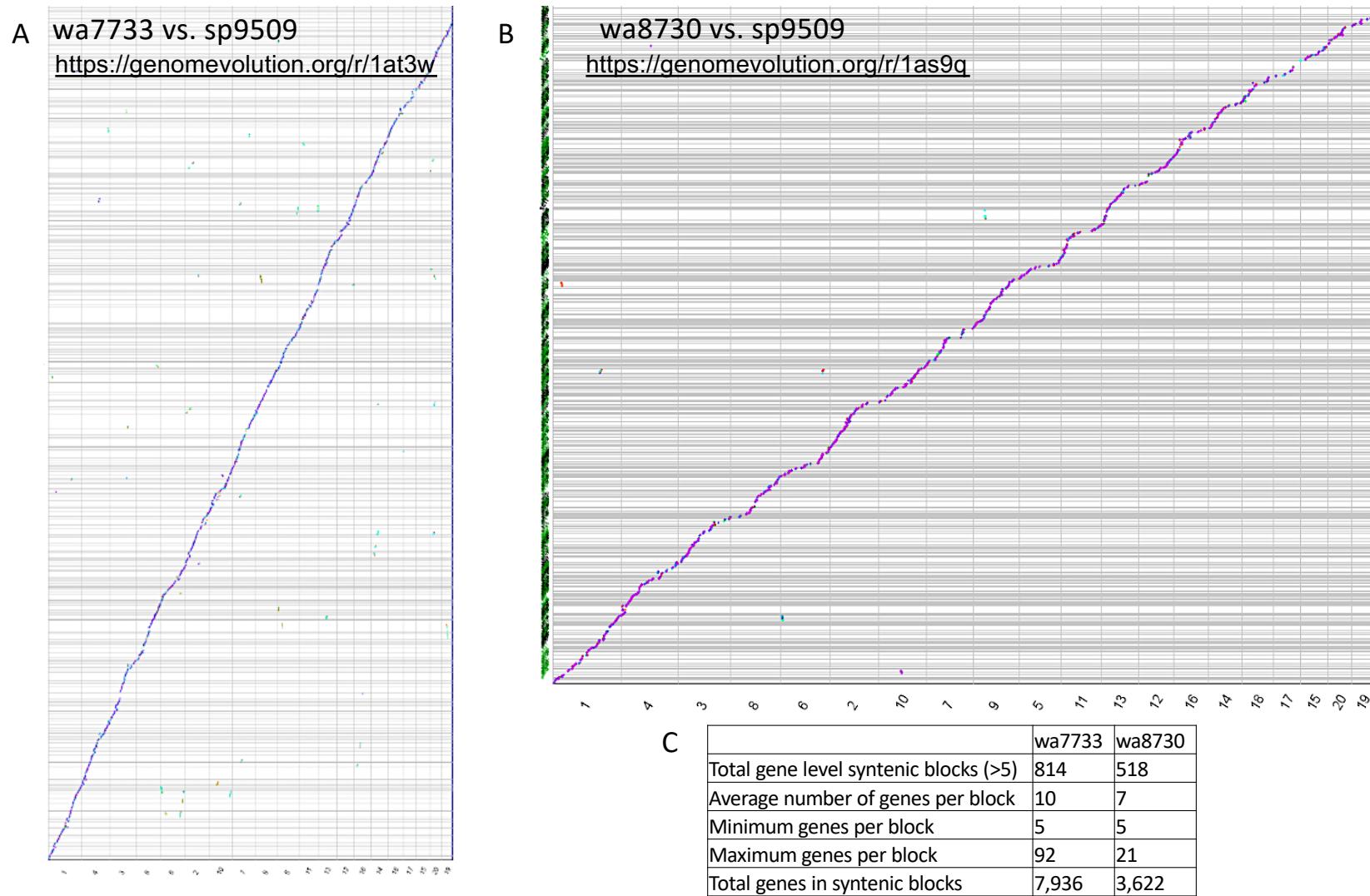


Figure S3. Wolffia is colinear with sp9509.

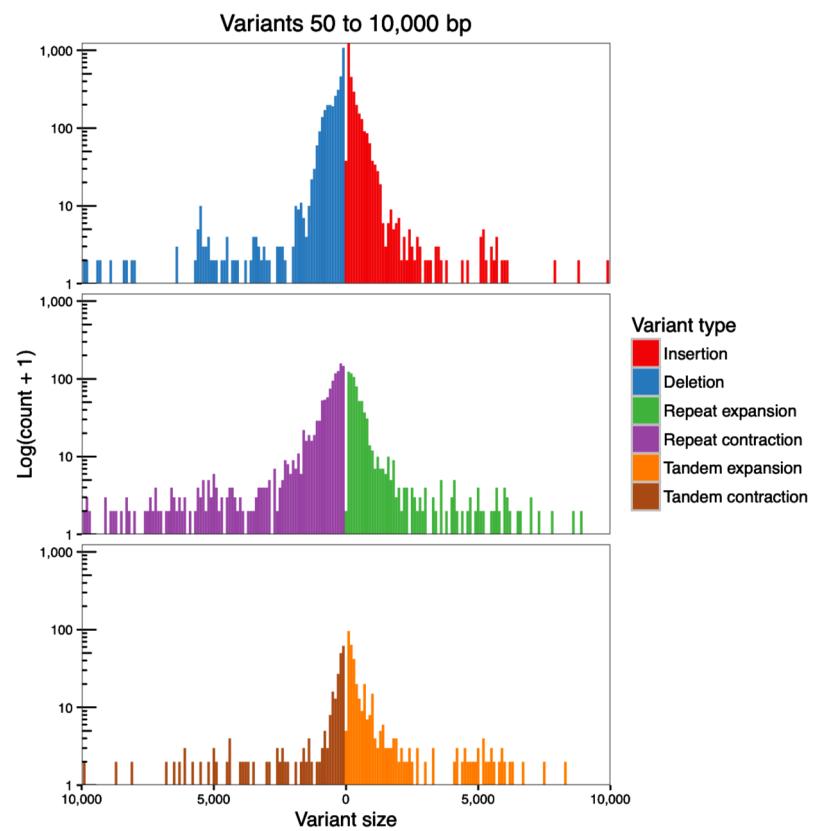


Figure S4. Wolffia genomes differ mostly by small INDELs.

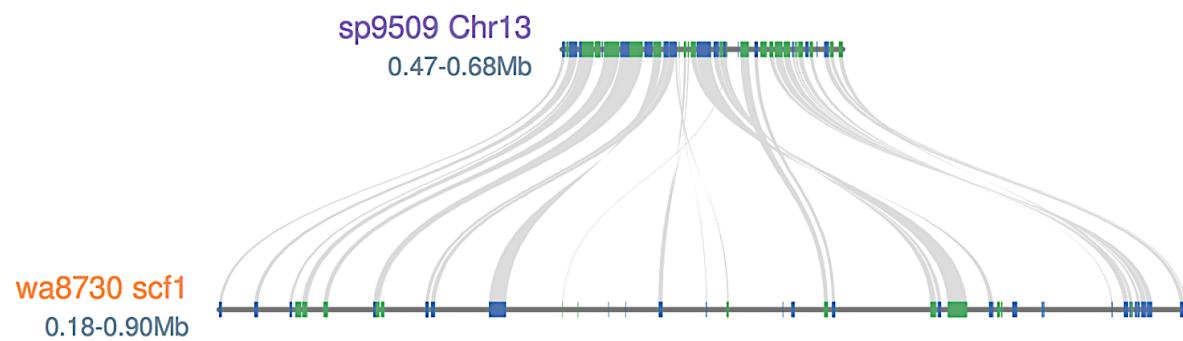


Figure S5. Wolffia genome is colinear with sp9509.

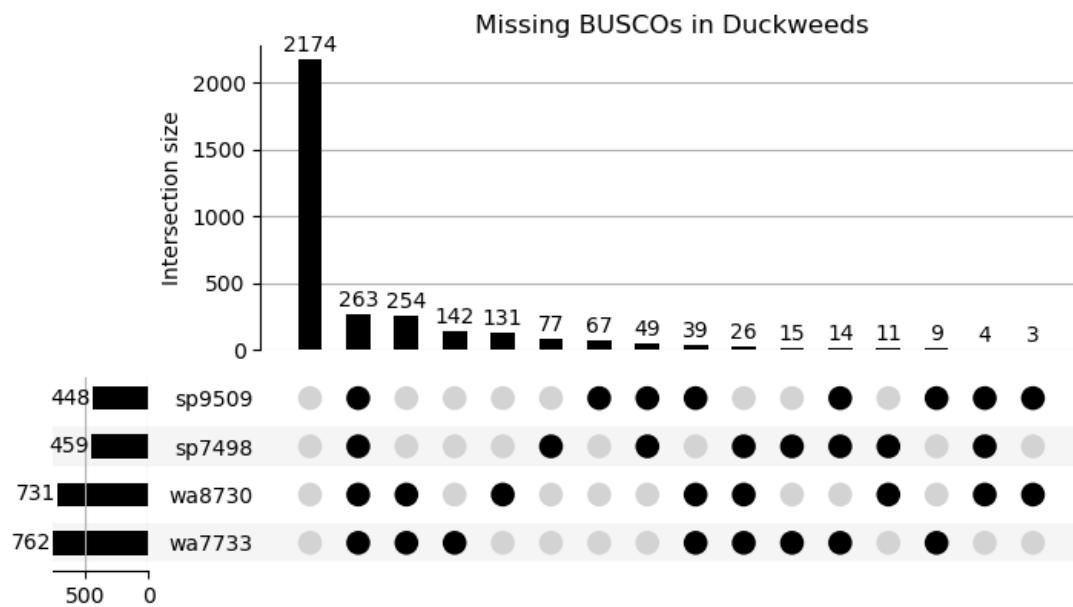


Figure S6. Wolffia and Spirodela missing a similar set of BUSCO genes.

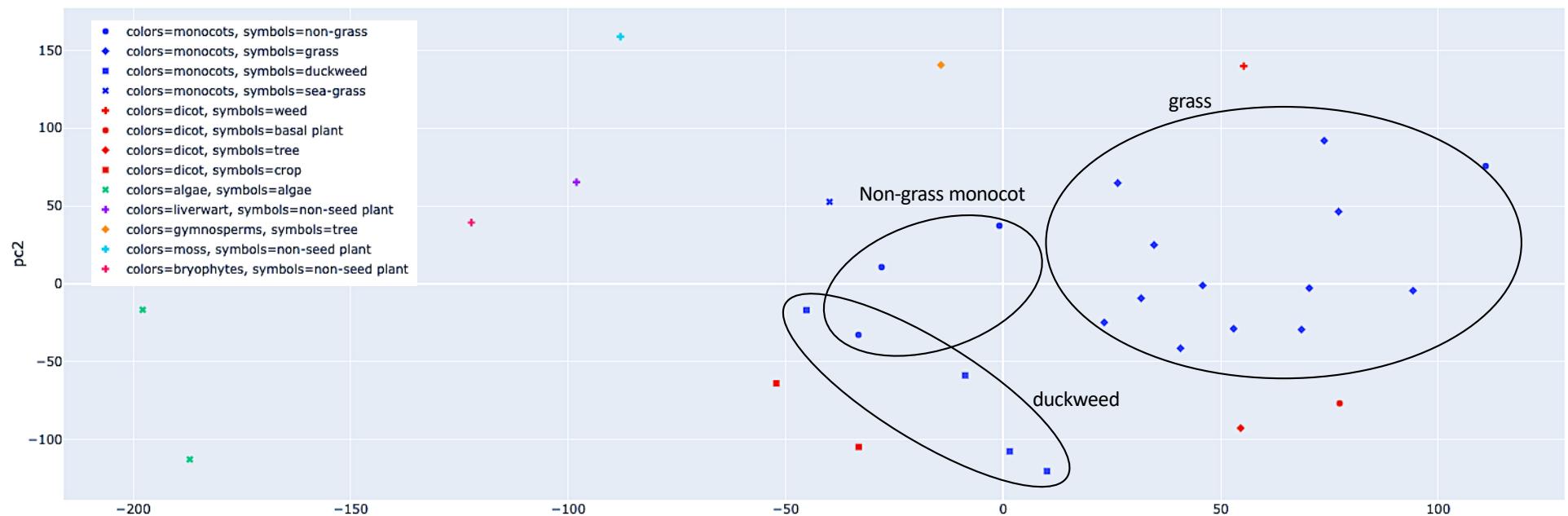
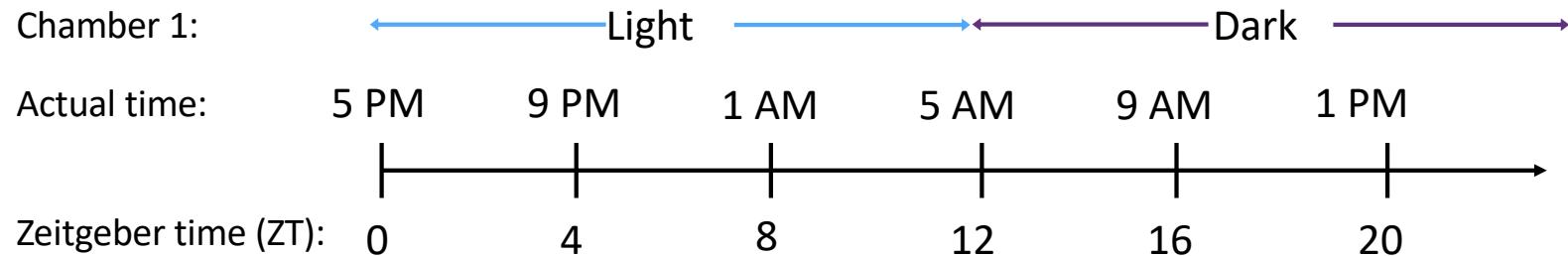


Figure S7. Multi-dimensional scaling (MDS) based on orthogroups (OGs) reveals relationships between the grass monocots, non-grass monocots and duckweeds.

	Wa7733	Wa8730	Sp9509	Sp7498	zostera	arabidopsis	rice	brachy	maize
1	41	45	37	33	26	18	18	19	12
2	20	20	19	18	17	14	12	13	13
3	9	9	9	10	10	9	8	9	9
4	6	5	6	6	7	7	5	6	8
5	3	3	4	4	5	5	4	4	6
6	3	3	4	4	4	4	3	3	5
7	2	2	2	3	3	3	2	2	5
8	2	2	2	2	2	3	2	2	3
9	1	1	2	2	2	2	2	2	3
10	1	1	1	1	2	2	2	2	2
11-15'	3	3	4	4	6	7	6	6	7
16-20	2	2	2	2	2	4	3	4	5
21-50	3	2	3	4	4	8	8	8	9
51-100	1	1	1	1	1	2	3	3	2
101-150	1	1	0	0	1	1	2	1	1
151-200	0	0	1	1	0	0	0	0	1
201-500	0	0	0	0	0	0	0	0	1
501-1000	0	0	0	0	0	0	0	0	0
1001+	0	0	0	0	0	0	0	0	0

Figure S8. Wolffia and Spirodela genes found in small gene families (orthogroups).

Day 1



Day 2

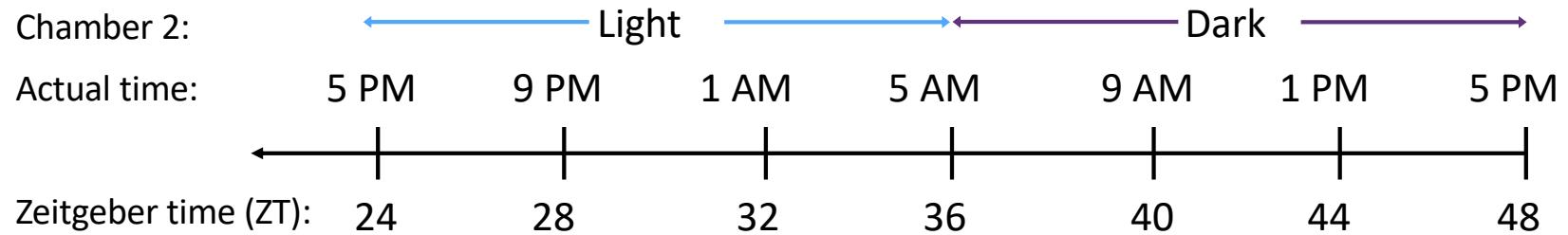


Figure S9. Wolffia time course design.

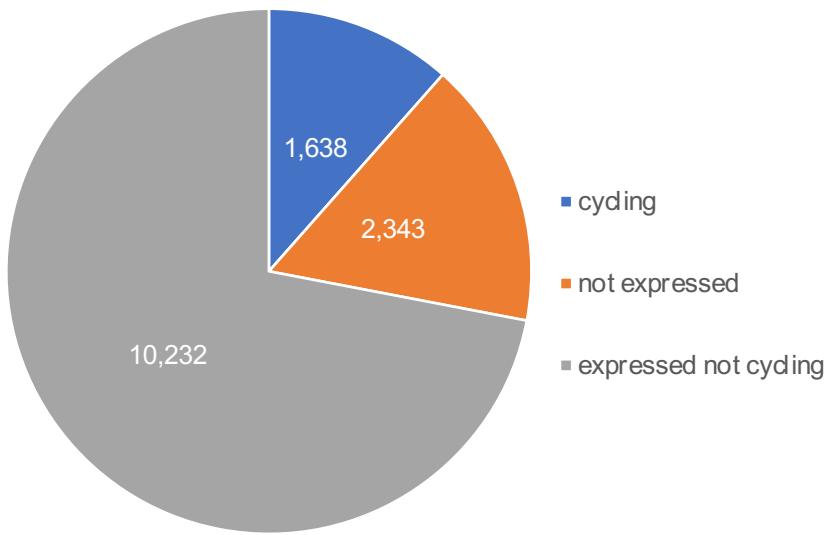


Figure S10. Break down of expressed and cycling genes in *wa8730*.

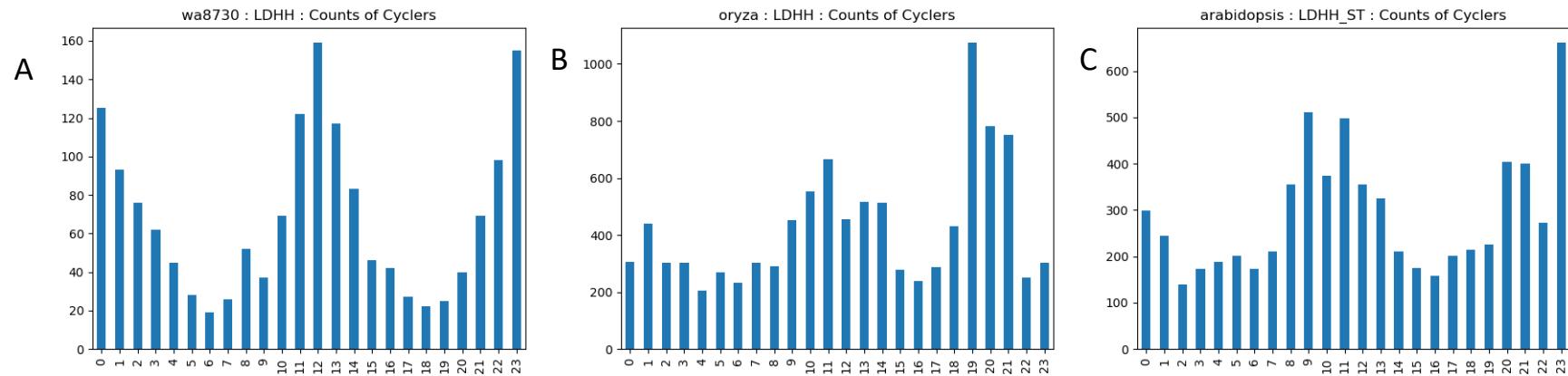


Figure S11. Distribution of cycling genes over the day.

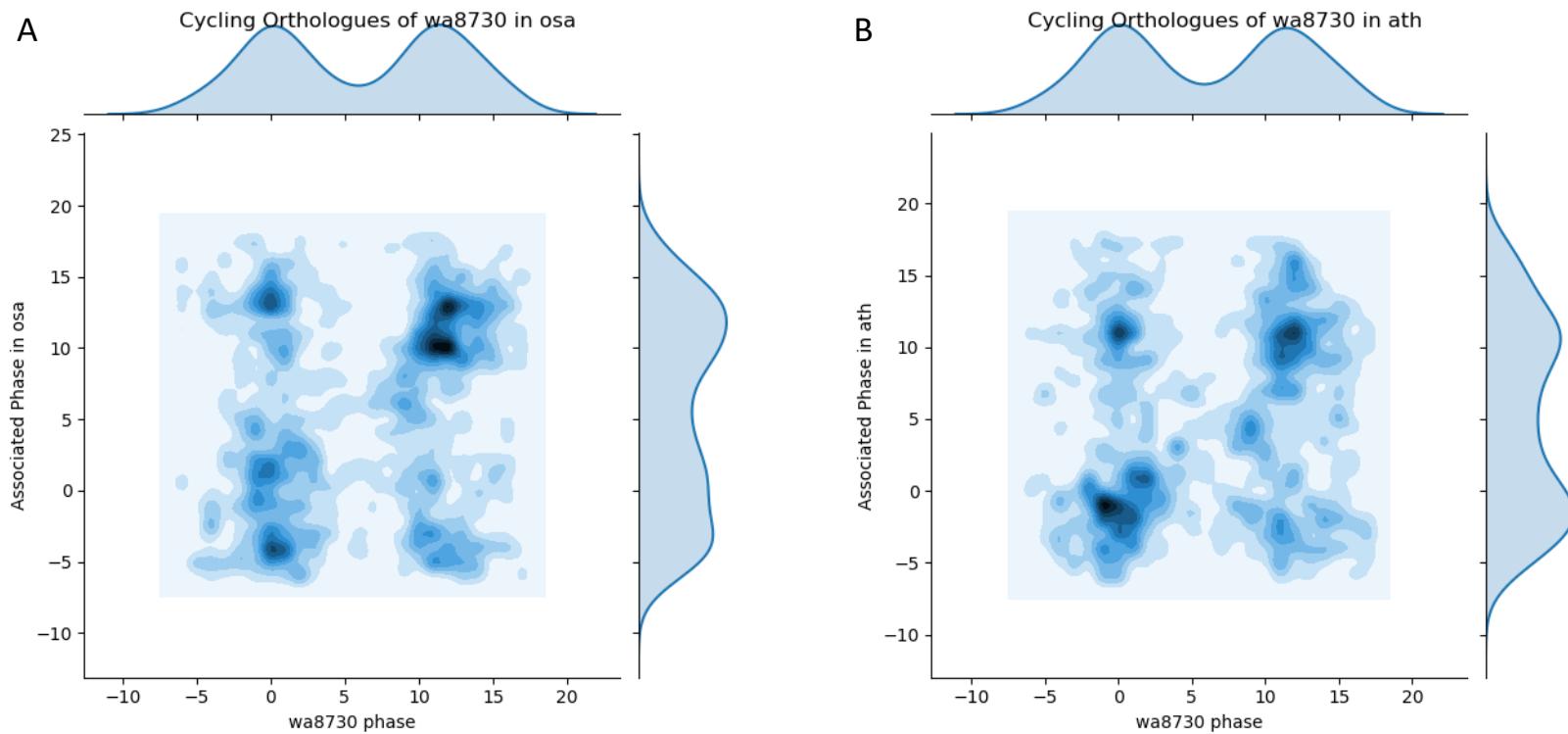


Figure S12. Comparison of cycling genes between Wolffia (*wa8730*), Arabidopsis (*ath*) and rice (*osa*).

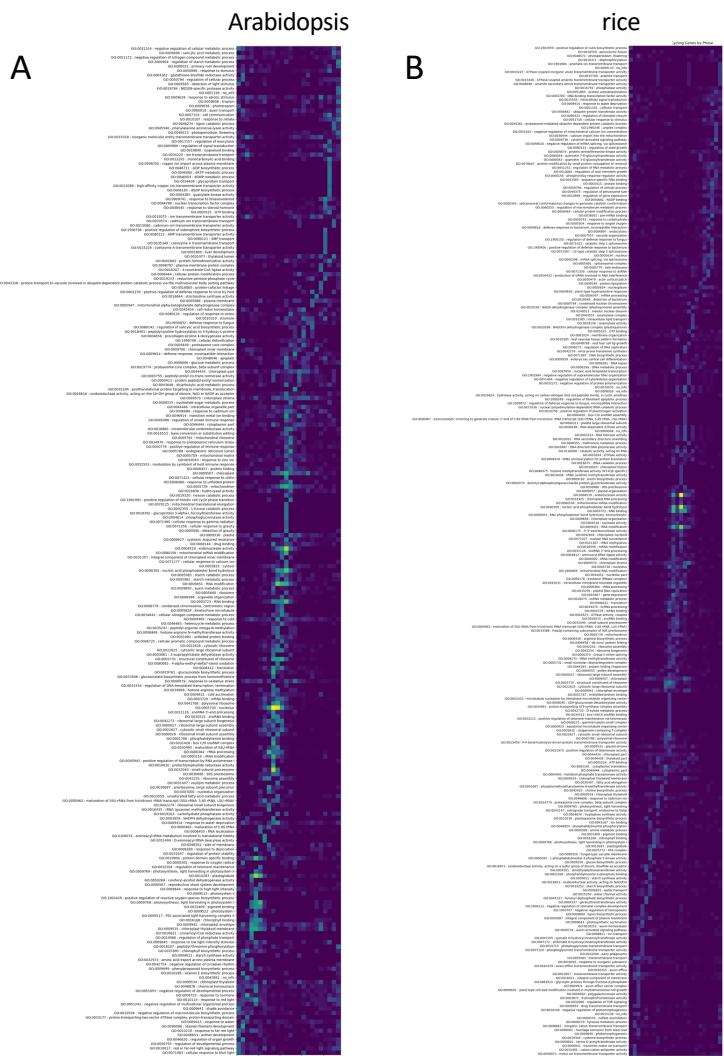


Figure S13. Time of day (TOD) overrepresentation of GO terms in rice and Arabidopsis.