

# Supporting Information

Tipple et al. 10.1073/pnas.1213875110

**Table S1. Environmental and plant-water hydrogen isotope values**

Sample date	Day number	Stream water $\delta^2\text{H}$ (‰)	SD	Atmospheric water vapor $\delta^2\text{H}$ (‰)	SD	Stem water $\delta^2\text{H}$ (‰)	SD	Leaf water $\delta^2\text{H}$ (‰)	SD
4/22/10	112	-132	0			-123	0		
5/3/10	123	-131	1	-173	4	-118	0	-93	0
5/12/10	132	-132	0	-233	1	-110	1	-100	1
5/17/10	137	-131	1	-186	0	-132	0	-100	0
5/21/10	141	-130	0	-158	0	-121	0	-85	0
5/26/10	146	-130	0	-160	0	-120	1	-93	1
6/2/10	153	-129	1	-188	0	-127	0	-116	1
6/10/10	161	-128	0	-169	0	-136	0	-96	0
6/16/10	167	-129	0	-169	1	-133	1	-115	1
6/28/10	179	-130	1	-186	1	-134	0	-112	1
7/14/10	195	-130	1	-168	1	-134	0	-76	0
8/4/10	216	-130	0	-139	0	-131	0	-68	1
8/27/10	239	-129	1	-132	0	-133	1	-61	1
9/7/10	250	-130	0	-169	1	-136	1	-69	1
10/1/10	274	-127	0	-176	1	-145	1	-61	0

**Table S2. Compound-specific hydrogen isotope values and compound distributions**

Sample date	Day number	$n\text{-C}_{27}$ $\delta^2\text{H}$ (‰)	SD	$n\text{-C}_{29}$ $\delta^2\text{H}$ (‰)	SD	$n\text{-C}_{27}$ Conc ( $\mu\text{g g}^{-1}$ )	SD	$n\text{-C}_{29}$ Conc ( $\mu\text{g g}^{-1}$ )	SD	Average chain length	SD
4/22/10	112	-266	7	-269	8	349	63	107	9	27.36	0.15
5/3/10	123	-268	3	-270	2	261	22	67	5	27.38	0.02
5/12/10	132	-263	5	-261	6	485	28	159	7	27.37	0.13
5/17/10	137	-258	1	-246	2	311	53	108	34	27.39	0.09
5/21/10	141	-239	6	-227	10	324	118	136	46	27.49	0.02
5/26/10	146	-224	5	-211	5	261	71	136	101	27.55	0.15
6/2/10	153	-216	7	-210	3	439	54	891	362	28.34	0.11
6/10/10	161	-222	10	-223	4	252	26	1282	391	28.69	0.12
6/16/10	167	-216	6	-224	5	74	24	1118	298	28.90	0.02
6/28/10	179	-209	5	-216	4	115	20	669	50	28.78	0.04
7/14/10	195	-211	7	-218	5	96	26	576	197	28.77	0.03
8/4/10	216	-208	5	-217	4	123	24	768	36	28.77	0.04
8/27/10	239	-212	7	-222	6						
9/7/10	250	-209	10	-219	4	51	24	492	142	28.82	0.06
10/1/10	274	-215	7	-217	4	67	6	534	40	28.77	0.05