

## Influence of atmospheric teleconnection patterns on airborne pollen levels in the NE Iberian Peninsula

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### Supplement.

**Table S1.** Significant correlations between the pollen season parameters vs. the winter (from December to March) and annual climatic indices at Catalonia for the period 1994-2011. Seasonal Pollen Index (SPI) of Catalonia has been calculated as the mean of the 6 sampling stations. The dates of Start and End of the pollen season for Catalonia has been established as the period beginning the earliest Start date registered in sampling stations until the latest End date. The Length was the number of days between the Start and the End. Only species that have significant correlations ( $p < 0.05$ ) are listed.

CATALONIA	SPI						START						END						LENGTH						N	P	Total
	NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO				
	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a			
Pollen taxa																											
<i>Artemisia</i>			N*					N*												P*							
<i>Betula</i>										N*																	
<i>Castanea</i>										P*																	
Chenopl/Amar.	N*		N**										N*						N*								
<i>Corylus</i>		P*				P*																					
Cupressaceae	N*		N**	N*				N*													P*						
<i>Fagus</i>																						N*					
<i>Fraxinus</i>											P*																
<i>Olea</i>		N*		N**																							
<i>Pinus</i>			N*	N*						N*												P**					
<i>Pistacia</i>										N**																	
<i>Plantago</i>				N*																							
<i>Platanus</i>							N*				N**																
Poaceae	N*						N*																				
Polygonaceae			N*						N*																		
<i>Quercus</i>	N*		N*																								
<i>Q. deciduous t.</i>	N*		N**						N*	N*												P**					
<i>Q. evergreen t.</i>			N*																								
<i>Ulmus</i>				N*									N*							N*			N**				
N	5	1	8	5			2	2	1	4	2	1	1	1					2	1	1			83%			
P		1				1				1	1										1	1	2		17%		
Total	5	2	8	5	0	1	2	2	1	5	3	1	1	1	0	0	2	1	1	1	1	2	2	0	39		

w: winter (DJFM) / a: annual

N: negative correlation / P: positive correlation

\* $p < 0.05$  / \*\* $p < 0.01$

**Table S2.** Significant correlations between the starting date of the pollen season vs. the winter (from December to March) and annual climatic indices at the 6 sampling stations for the period 1994-2011. Only species that have significant correlations ( $p < 0.05$ ) are listed.

START	Barcelona						Bellaterra						Girona						Lleida						Manresa						Tarragona						N	P	Total
	NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO										
Pollen taxa	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	N	P	Total
<i>Alnus</i>																																					1		1
<i>Ambrosia</i>																																					1		1
<i>Artemisia</i>																																					5		5
<i>Betula</i>																																						1	1
<i>Castanea</i>																																						3	3
<i>Corylus</i>																																					2	1	3
Cupressaceae		N*																																			7		7
<i>Fagus</i>																																						2	2
<i>Olea</i>																																					2		2
<i>Pinus</i>				N*																																	5		5
<i>Pistacia</i>				N*																																	6		6
<i>Plantago</i>						N**																															1		1
<i>Platanus</i>	N*			N*	N*																																11		11
Polygonaceae	N*			N*																																	2	1	3
<i>Quercus</i>																																					1		1
<i>Q. deciduous t.</i>				N*																																	1		1
<i>Q. evergreen t.</i>																																					1		1
<i>Ulmus</i>																																					2		2
Urticaceae		N*				N**																															6		6
<b>N</b>	2	2	1	4	1	2	2	1	1	4	1			3			2	4	2	1		4	2	1		1		3			1	3	1	1	3	1	87%		54
<b>P</b>													1			1														1			1				13%	8	
<b>Total</b>	2	2	1	4	1	2	2	1	1	4	1		1	3		1	2	4	2	1		4	2	1	1	1		5	1		2	3	1	2	3	1	54	8	62

w: winter (DJFM) / a: annual

N: negative correlation / P: positive correlation

\* $p < 0.05$  / \*\* $p < 0.01$

**Table S3.** Significant correlations between the ending date of the pollen season vs. the winter (from December to March) and annual climatic indices at the 6 sampling stations for the period 1994-211. Only species that have significant correlations ( $p < 0.05$ ) are listed.

END	Barcelona						Bellaterra						Girona						Lleida						Manresa						Tarragona						N	P	Total	
	NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO											
Pollen taxa	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	N	P	Total	
<i>Alnus</i>				N*						N*																											3		3	
<i>Ambrosia</i>																P*																						1	1	
<i>Artemisia</i>																																					1		1	
<i>Betula</i>										N*																											1		1	
<i>Castanea</i>																						P*																1	1	
<i>Chenop/Amar.</i>					N*											P*																					3	2	5	
<i>Corylus</i>																						N*															1		1	
<i>Fagus</i>					N*																																2	1	3	
<i>Olea</i>							P**			P*	P**																											4	4	
<i>Pinus</i>																																						1	1	
<i>Pistacia</i>																																					2		2	
<i>Plantago</i>																																					2	1	3	
<i>Platanus</i>										N*																											2		2	
Poaceae										N*																											2	1	3	
Polygonaceae																																						2	2	
<i>Quercus</i>																																						3	3	
<i>Q. deciduous t.</i>																																						1	1	
<i>Q. evergreen t.</i>																																						2	2	
<i>Ulmus</i>										N*																											3		3	
Urticaceae																																					2		2	
N				1		2		3	1	1	1	1		1			2			1		1		1		2				1		1	1		3			55%	24	
P							2		4	3						1		1				1	5					3											45%	20
<b>Total</b>	0	0	0	1	0	2	2	3	5	4	1	1	0	1	0	1	2	1	1	0	1	6	0	1	0	2	0	3	0	1	0	1	1	0	3	0	24	20	44	

w: winter (DJFM) / a: annual

N: negative correlation / P: positive correlation

\* $p < 0.05$  / \*\* $p < 0.01$

**Table S4.** Significant correlations between the length of the pollen season vs. the winter (from December to March) and annual climatic indices at the 6 sampling stations for the period 1994-211. Only species that have significant correlations ( $p < 0.05$ ) are listed.

LENGTH	Barcelona						Bellaterra						Girona						Lleida						Manresa						Tarragona						N	P	Total
	NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO		NAO		WeMO		AO										
Pollen taxa	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a	w	a			
<i>Alnus</i>				N*																																	2		2
<i>Artemisia</i>																									P*													2	2
<i>Betula</i>							N*		N*																												2		2
<i>Corylus</i>																						N*															1		1
Cupressaceae																						P*																1	1
<i>Fagus</i>	N*	N*				N*																						N**						P*			4	1	5
<i>Fraxinus</i>																						N*															1		1
<i>Olea</i>				P*			P**		P*	P**									P*									P**										7	7
<i>Pinus</i>				P*			P*			P**												P**															5		5
<i>Pistacia</i>																						P*															1		1
<i>Plantago</i>									N*																												2		2
<i>Platanus</i>							P*		P**	P**	P*																	P*						N*			1	5	6
Poaceae																												P**										1	1
Polygonaceae										P*												P*															2		2
<i>Quercus</i>										P*												P*															2		2
<i>Q. deciduous t.</i>				P*																		P*															2		2
<i>Q. evergreen t.</i>							P**		P*	P*												P*															4		4
<i>Ulmus</i>																																					1		1
Urticaceae				P*		P**																																2	2
<b>N</b>	1	1		1		1	1	1	1													1	1	2				1						1	1		<b>29%</b>		14
<b>P</b>			2	2		1	4		3	6	1								1	1	6		1		1		4				1	1						<b>71%</b>	35
<b>Total</b>	1	1	2	3	0	2	5	1	4	6	1	0	0	0	0	0	0	0	0	1	2	7	0	3	0	1	0	4	1	0	0	2	2	0	0	0	14	35	49

w: winter (DJFM) / a: annual

N: negative correlation / P: positive correlation

\* $p < 0.05$  / \*\* $p < 0.01$