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Supplement of

Real-time pollen dynamics and automated detection: novel insights from Wrocław (Poland) 2024–2025

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Supplement to: Real-Time Pollen Dynamics and Automated Detection: Novel insights from Wrocław (Poland) 2024–2025

Alnus										
hour	wind_2	wind_3	temp_2	temp_3	hum_2	hum_3	rain_2	rain_3	sun_2	sun_3
0						-*				
1			+*							
2			+*		-*	-**				
3						-**				
4						-*				
5						-**				
6						-**				
7						-***				
8					-**	-***				+**
9			+*		-*	-**				+*
10			+**	+*	-*					
11			+**	+*						
12			+*							
13			+***	+*						
14			+***							
15			+***	+*						
16			+***	+*		-*				
17			+**	+*		-*				
18			+*			-*				
19						-**				
20						-**				
21						-**				
22						-*				
23						-*				

Table S1. The hourly Spearman correlation matrix between meteorological variables and *Alnus* pollen concentrations for the 2024–2025 season. hum – relative humidity, rain – precipitation sum, sun – sunshine duration, temp – air temperature at 2 m, wind – wind speed.

Betula										
hour	wind_3	wind_4	temp_3	temp_4	hum_3	hum_4	rain_3	rain_4	sun_3	sun_4
0				+***	-***	-**				
1				+**	-***	-**				
2				+***	-***	-*				
3				+**	-***	-*				
4				+*	-***					
5					-***					
6					-***			-*		
7					-***				+*	
8			+**		-***				+***	
9			+***		-***				+***	
10		+*	+***		-***		-*		+**	
11		+**	+***		-**				+*	
12		+**	+***		-***				+*	
13		+**	+***		-**					
14		+**	+***		-*					
15	+*	+*	+***		-***				+*	
16		+*	+***		-***					
17			+***		-***					
18			+*	+*	-***					
19				+**	-***	-*				
20				+*	-***					
21				+*	-***	-*				
22				+**	-***	-**				
23				+***	-***	-**				

Table S2. The hourly Spearman correlation matrix between meteorological variables and *Betula* pollen concentrations for the 2024–2025 season. hum – relative humidity, rain – precipitation sum, sun – sunshine duration, temp – air temperature at 2 m, wind – wind speed.

Fraxinus										
hour	wind_3	wind_4	temp_3	temp_4	hum_3	hum_4	rain_3	rain_4	sun_3	sun_4
0				+***	-**	-*				
1				+**	-***	-*				
2				+***	-**					
3					-**					
4										
5										
6										
7			+**		-**					
8			+***		-**					
9			+***	+*	-*					
10			+**	+**						
11			+***							
12			+***							
13			+**							
14			+***	+*						
15			+***	+*						
16			+**	+*	-*					
17			+***	+*	-**					
18			+**	+**	-**					
19			+*	+***	-*					
20			+**	+**	-**					
21			+*	+**	-**	-**				
22			+**	+***	-**	-***				
23				+***	-**	-**				

Table S3. The hourly Spearman correlation matrix between meteorological variables and *Fraxinus* pollen concentrations for the 2024–2025 season. hum – relative humidity, rain – precipitation sum, sun – sunshine duration, temp – air temperature at 2 m, wind – wind speed.

Pinus										
hour	wind_4	wind_5	temp_4	temp_5	hum_4	hum_5	rain_4	rain_5	sun_4	sun_5
0						-***				
1						-***				
2				-**		-**				
3						-*				
4				-**						
5				-**		-*				
6				-*	-*	-*				
7					-**					
8										
9										
10										
11				-*						
12						-*				
13						-*				
14						-**				
15						-***				+*
16						-***				
17					-**	-***				+*
18						-***				
19				-*		-***				
20				-**		-***				
21				-*		-***				
22				-*		-***				
23				-*		-***				

Table S4. The hourly Spearman correlation matrix between meteorological variables and *Pinus* pollen concentrations for the 2024–2025 season. hum – relative humidity, rain – precipitation sum, sun – sunshine duration, temp – air temperature at 2 m, wind – wind speed.

Quercus										
hour	wind_4	wind_5	temp_4	temp_5	hum_4	hum_5	rain_4	rain_5	sun_4	sun_5
0			+***							
1			+***							
2			+***							
3			+***							
4			+***							
5			+***							
6			+***							
7			+***							
8			+***							
9			+***							
10			+***							
11			+***							
12			+***							
13			+***							
14			+***							
15			+***							
16			+***							
17			+***							
18			+***							
19			+***							
20			+***							
21			+***							
22			+***							
23			+***							

Table S5. The hourly Spearman correlation matrix between meteorological variables and *Quercus* pollen concentrations for the 2024–2025 season. hum – relative humidity, rain – precipitation sum, sun – sunshine duration, temp – air temperature at 2 m, wind – wind speed.