Supplementary Materials

Appendix 1. Calculation of Reynolds number of a rectangular duct.

Reynolds number (Re) is a dimensionless quantity in fluid dynamics that indicates how moving fluids behave in different flow situations [1]. It indicates whether the flow around an object or within a duct is laminar or turbulent. In a rectangular duct, the flow is laminar when Re < 2300 and turbulent when Re > 4000. Re is defined as the ratio of inertial to viscous (frictional) forces of a fluid and is commonly expressed as:

$$Re = \frac{\mu L}{\upsilon}$$

where μ is the velocity of the fluid (m/s), L is a characteristic linear dimension (m; see below), and υ is the kinematic viscosity of the fluid (m^2/s). For a duct, L represents the "hydraulic diameter" which for a rectangular cross-sectional area is given by:

$$L = \frac{2ab}{(a + b)}$$

where a and b are the width and height of the duct, respectively.

In our wind tunnel, a = 0.178 m and b = 0.254 m. At low velocity, $\mu_L = 1.5$ m/s and at high velocity, $\mu_H = 5.0$ m/s. We determined $\upsilon = 15.15 \times 10^{-6}$ m^2/s for 21^o C, the temperature of our lab, using an online tool (The Engineering ToolBox, https://www.engineeringtoolbox.com/air-absolute-kinematic-viscosity-d_601.html). Using these values, we calculated Re ~ 20 000 – 70 000, which indicates that the flow was turbulent.

1. Niklas KJ. 1992 *Plant biomechanics: an engineering approach to plant form and function*. Chicago, IL, USA: University of Chicago Press.

Figure 1. Representative examples of flowers with high (left) and low (right) natural frequency stamens. Flowers were stored in 60% ethanol and photographed using a dissection microscope.

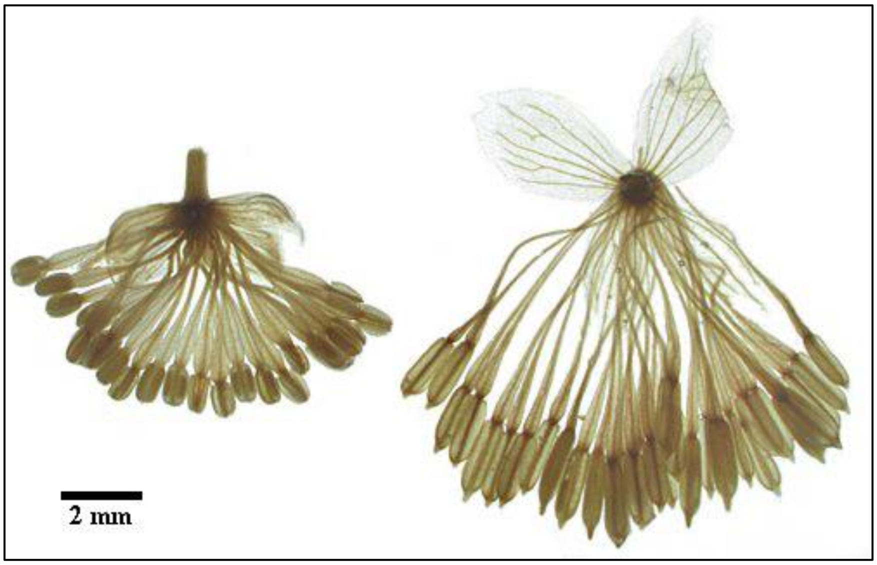

Figure 2. Geographical locations of populations of *Thalictrum pubescens* (filled circles) that were sampled in Ontario for this study.

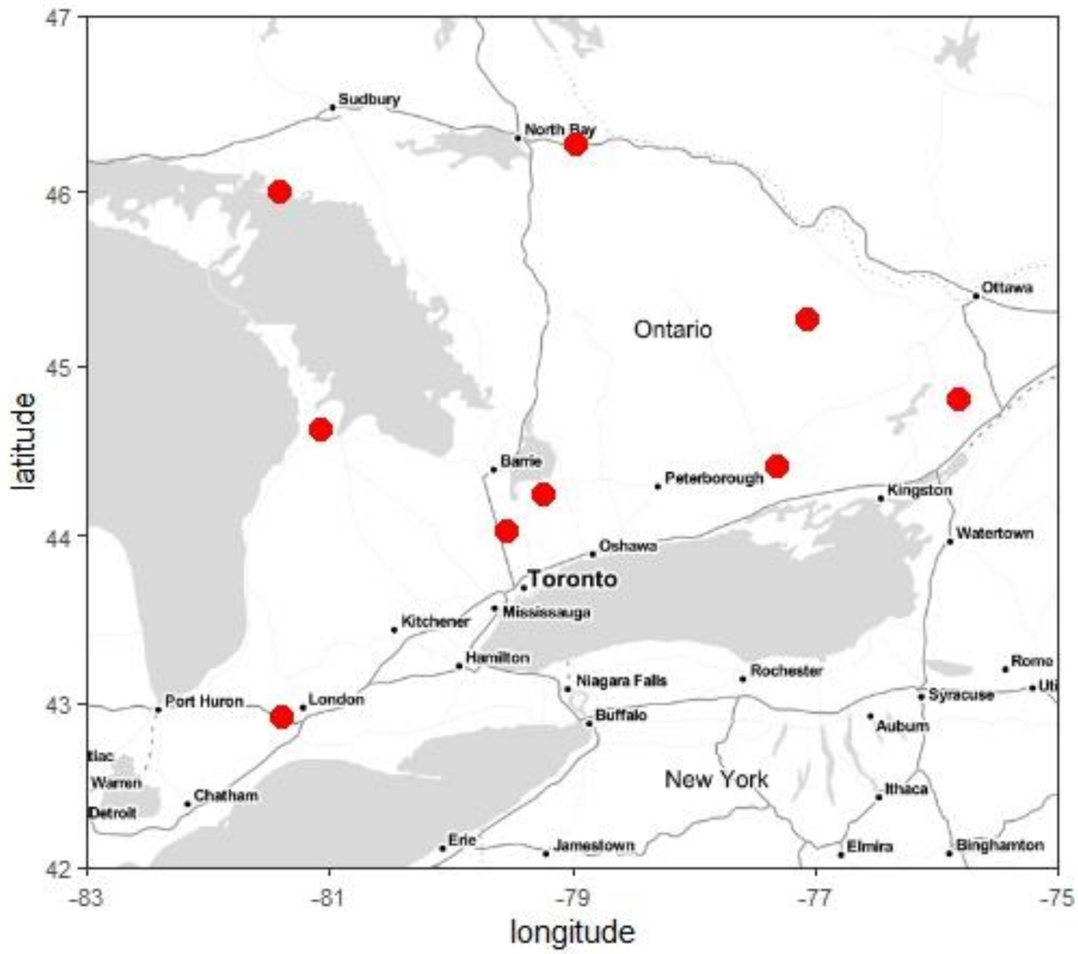

Figure 3. Frequency spectra for stamens of *Thalictrum pubescens* in the wind tunnel assay. Solid lines in each panel represents the ensemble average spectrum for a particular genotype. The genotypes are arranged in order from lowest to highest natural frequency measured using the electrodynamic shaker (see Methods).

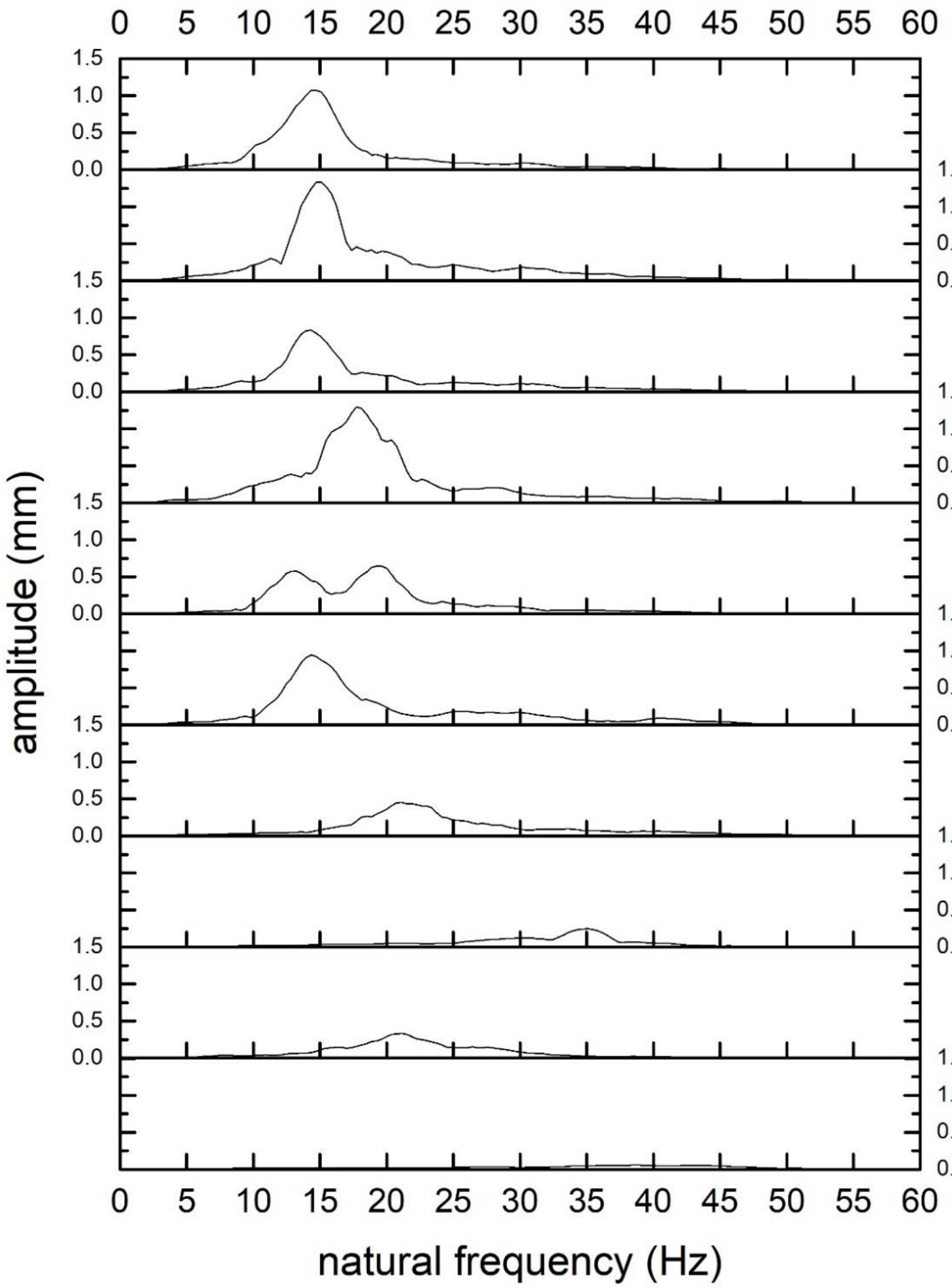

Table 1. Summary statistics of linear mixed model describing variation in stamen natural frequency of *Thalictrum pubescens* plants over three consecutive years (2015 to 2017) with data grouped by genotype.

	natural frequency			
	coefficient	standard error	*t*	*P* (>*t*)
fixed effects				
Intercept	-370.83	1338.40	-0.27	0.784
Year	0.19	0.66	0.29	0.774
random effects				
variance within genotypes		12.43		
variance among genotypes		12.48		
intraclass correlation		0.503		

Table 2. Analysis of deviance to determine the effect of male flower number (male flowers), stamen natural frequency (frequency) and pollinator availability (pollination) on percent seed set in *Thalictrum pubescens*.

	d.f.	deviance	resid d.f.	resid deviance	***F***	***P*** (>***F***)
Null			27	1020.83		
Male flowers	1	411.41	26	609.43	19.34	< 0.0001 ***
Frequency	1	27.01	25	582.42	1.27	0.27
Pollination	1	7.67	24	574.74	0.36	0.55
Frequency x Pollination	1	129.42	24	445.32	6.08	0.02 *

*, ***: Significant by the *F*-test to 5% and 1% respectively; d.f. degrees of freedom; resid d.f. residual degrees of freedom; resid deviance residual deviance.