

SUPPLEMENTARY MATERIAL

Dołkin-Lewko & Zajączkowska, ABCbot 66/2 (2024)

Growth Strategies and Climbing Behavior of the Invasive Vine
Wild Cucumber (*Echinocystis lobata*)

Table S1. Descriptive statistics of sample variables for support groups.

Table S2. Descriptive statistics for the duration of observation (in full days) along with the frequency of nutation movements in relation to support density.

Table S3. Mean values of biometric features of wild cucumber shoot cross-sections at different heights.

The supplementary material provides detailed descriptive statistics that support the investigation of wild cucumber (*Echinocystis lobata*) growth dynamics in relation to different support densities, and biometric features from different parts of the plant shoot. Table 1 summarizes the sample variables across three support densities (5 cm, 20 cm, and 50 cm), offering insights into how these densities influence growth rates and other plant characteristics. Table 2 presents data on the observation duration and frequency of nutation movements, highlighting how the proximity of supports affects the intensity and timing of these movements. Table 3 includes the mean biometric measurements of wild cucumber shoot cross-sections at different heights (base, 1/4 shoot, half shoot, 3/4 shoot, and top). It provides valuable information about the plant's structure and how it adapts to varying environmental conditions. The data presented in these tables contribute to understanding of the plant's adaptive mechanisms, particularly its ability to climb efficiently and establish itself in different habitats, which is critical in assessing its competitive advantage as an invasive species in vulnerable ecosystems like wetlands and river valleys.

Symbols

N – sample size; ***M*** – mean; ***SD*** – standard deviation; ***Mdn*** – median;

Min – minimum value; ***Max*** – maximum value; ***Skew.*** – skewness; ***Kurt.*** – kurtosis

S1

| Variable | Support | N | M | SD | Mdn | Min | Max | Skew. | Kurt. |
|---|---------|-------|--------|--------|--------|---------|---------|-------|-------|
| Length after alignment, mm | 5 cm | 10931 | 565.28 | 199.50 | 550.63 | 162.16 | 1045.83 | 0.17 | -0.97 |
| | 20 cm | 12021 | 565.40 | 235.84 | 543.68 | 114.52 | 1245.02 | 0.38 | -0.66 |
| | 50 cm | 7592 | 445.46 | 141.94 | 443.56 | 120.68 | 767.73 | 0.08 | -0.66 |
| Deviation of shoot tips from x axis, mm | 5 cm | 10931 | -5.88 | 175.22 | -40.86 | -240.76 | 981.54 | 3.23 | 11.76 |
| | 20 cm | 12021 | 74.90 | 121.78 | 51.28 | -273.66 | 417.37 | 0.36 | 0.19 |
| | 50 cm | 7592 | 5.31 | 156.88 | 5.71 | -445.65 | 415.37 | 0.17 | -0.03 |
| Deviation of shoot tips from y axis, mm | 5 cm | 10931 | 538.35 | 190.09 | 521.72 | 160.30 | 998.07 | 0.21 | -0.90 |
| | 20 cm | 12021 | 488.21 | 198.43 | 459.58 | 153.20 | 1090.63 | 0.63 | -0.24 |
| | 50 cm | 7592 | 340.78 | 113.39 | 350.61 | -66.52 | 572.30 | -0.75 | 0.82 |

S2

| Variable | Support | N | M | SD | Mdn | Min | Max | Skew. | Kurt. |
|-----------------------------------|---------|-----|-------|------|-------|-------|-------|-------|-------|
| Rate of nutation movement per day | 5 cm | 106 | 24.25 | 4.32 | 24.00 | 14.00 | 33.00 | -0.58 | 0.42 |
| | 20 cm | 119 | 24.72 | 3.58 | 24.00 | 17.00 | 31.00 | -0.10 | -1.04 |
| | 50 cm | 73 | 26.01 | 4.49 | 27.00 | 14.00 | 35.00 | -0.38 | -0.86 |
| Duration of observation, days | 5 cm | 13 | 9.15 | 1.77 | 9.00 | 6.00 | 13.00 | 0.37 | -0.35 |

S3

| Height localization | Cross-sectional area [mm ²] | Tissue area [mm ²] | Perimeter [mm] | Circularity |
|---------------------|---|--------------------------------|----------------|-------------|
| Base | 12.72 | 9.07 | 12.96 | 0.94 |
| 1/4 shoot | 3.29 | 2.16 | 6.97 | 0.81 |
| half shoot | 2.14 | 1.66 | 5.83 | 0.80 |
| 3/4 shoot | 2.18 | 1.58 | 5.75 | 0.78 |
| Top | 1.28 | 1.11 | 4.48 | 0.74 |