**Table S1** Full sampling details and associated data for each measured viable. Samples with the same number were collected from the same plant and different leaves are distinguished using letters.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Samples** | **State** | **City** | **Latitude** | **Longitude** | **Location cluster (k means clustering)** | **Chlorophyll (mg/cm2)** | **Leaf area (cm2)** | **Nitrate (ppm)** | **Potassium (ppm)** | **Soil pH** | **Traffic Volume (AADT)** | **Traffic Volume (Category)** |
| 1a | TN | Memphis | 35.356528 | -90.0065 | 3 | 0.0374 | 79.379 | 1600 | 3500 | 5.82 | 0 | None |
| 1b | TN | Memphis | 35.356528 | -90.0065 | 3 | 0.0322 | 71.014 | 1600 | 3500 | 5.82 | 0 | None |
| 1c | TN | Memphis | 35.356528 | -90.0065 | 3 | 0.027 | 72.996 | 1600 | 3500 | 5.82 | 0 | None |
| 2a | TN | Memphis | 35.358483 | -90.006917 | 3 | 0.0178 | 63.905 | 1400 | 2400 | 5.51 | 0 | None |
| 2b | TN | Memphis | 35.358483 | -90.006917 | 3 | 0.0154 | 73.35 | 1400 | 2400 | 5.51 | 0 | None |
| 2c | TN | Memphis | 35.358483 | -90.006917 | 3 | 0.0165 | 63.677 | 1400 | 2400 | 5.51 | 0 | None |
| 3a | TN | Memphis | 35.359083 | -90.0092 | 3 | 0.044 | 180.95 | 2600 | 2800 | 6.51 | 0 | None |
| 3b | TN | Memphis | 35.359083 | -90.0092 | 3 | 0.0394 | 180.117 | 2600 | 2800 | 6.51 | 0 | None |
| 3c | TN | Memphis | 35.359083 | -90.0092 | 3 | 0.0431 | 175.625 | 2600 | 2800 | 6.51 | 0 | None |
| 4a | TN | Millington | 35.301217 | -90.019833 | 3 | 0.0304 | 185.905 | 2800 | 3000 | 7.06 | 1493 | Low |
| 4b | TN | Millington | 35.301217 | -90.019833 | 3 | 0.0361 | 190.518 | 2800 | 3000 | 7.06 | 1493 | Low |
| 4c | TN | Millington | 35.301217 | -90.019833 | 3 | 0.03 | 149.649 | 2800 | 3000 | 7.06 | 1493 | Low |
| 5a | TN | Memphis | 35.059517 | -89.83225 | 3 | 0.0328 | 149.321 | 3800 | 3100 | 6.6 | 16494 | High |
| 5b | TN | Memphis | 35.059517 | -89.83225 | 3 | 0.0351 | 144.373 | 3800 | 3100 | 6.6 | 16494 | High |
| 5c | TN | Memphis | 35.059517 | -89.83225 | 3 | 0.0373 | 142.62 | 3800 | 3100 | 6.6 | 16494 | High |
| 6a | TN | Memphis | 35.004033 | -89.795567 | 3 | 0.032 | 100.382 | 1200 | 2300 | 6.78 | 25096 | High |
| 6b | TN | Memphis | 35.004033 | -89.795567 | 3 | 0.0351 | 110.048 | 1200 | 2300 | 6.78 | 25096 | High |
| 6c | TN | Memphis | 35.004033 | -89.795567 | 3 | 0.037 | 91.246 | 1200 | 2300 | 6.78 | 25096 | High |
| 7a | MS | Olive Branch | 34.963883 | -89.84685 | 3 | 0.0419 | 73.992 | 1300 | 2300 | 6.96 | 29000 | High |
| 7b | MS | Olive Branch | 34.963883 | -89.84685 | 3 | 0.0426 | 111.115 | 1300 | 2300 | 6.96 | 29000 | High |
| 7c | MS | Olive Branch | 34.963883 | -89.84685 | 3 | 0.0389 | 102.238 | 1300 | 2300 | 6.96 | 29000 | High |
| 8a | MS | Olive Branch | 34.9631 | -89.8928 | 3 | 0.0373 | 190.052 | 1100 | 1800 | 6.33 | 38000 | Extreme |
| 8b | MS | Olive Branch | 34.9631 | -89.8928 | 3 | 0.0377 | 156.601 | 1100 | 1800 | 6.33 | 38000 | Extreme |
| 8c | MS | Olive Branch | 34.9631 | -89.8928 | 3 | 0.0413 | 184.615 | 1100 | 1800 | 6.33 | 38000 | Extreme |
| 9a | MS | Olive Branch | 34.955483 | -89.804017 | 3 | 0.0348 | 171.251 | 670 | 1900 | 5.85 | Residential | Low |
| 9b | MS | Olive Branch | 34.955483 | -89.804017 | 3 | 0.0349 | 177.987 | 670 | 1900 | 5.85 | Residential | Low |
| 9c | MS | Olive Branch | 34.955483 | -89.804017 | 3 | 0.0328 | 177.837 | 670 | 1900 | 5.85 | Residential | Low |
| 10a | MS | Olive Branch | 34.949233 | -89.812233 | 3 | 0.0371 | 264.518 | 780 | 2500 | 6.77 | 5900 | Low |
| 10b | MS | Olive Branch | 34.949233 | -89.812233 | 3 | 0.0443 | 252.226 | 780 | 2500 | 6.77 | 5900 | Low |
| 10c | MS | Olive Branch | 34.949233 | -89.812233 | 3 | 0.0415 | 245.567 | 780 | 2500 | 6.77 | 5900 | Low |
| 11a | MS | Holly Springs | 34.827683 | -89.56315 | 1 | 0.0318 | 135.232 | 610 | 1800 | 6.4 | 2400 | Low |
| 11b | MS | Holly Springs | 34.827683 | -89.56315 | 1 | 0.0314 | 130.755 | 610 | 1800 | 6.4 | 2400 | Low |
| 11c | MS | Holly Springs | 34.827683 | -89.56315 | 1 | 0.0385 | 136.223 | 610 | 1800 | 6.4 | 2400 | Low |
| 12a | MS | Hickory Flat | 34.641167 | -89.261533 | 1 | 0.0344 | 111.094 | 440 | 1100 | 5.9 | Residential | Low |
| 12b | MS | Hickory Flat | 34.641167 | -89.261533 | 1 | 0.0353 | 105.702 | 440 | 1100 | 5.9 | Residential | Low |
| 12c | MS | Hickory Flat | 34.641167 | -89.261533 | 1 | 0.0295 | 98.309 | 440 | 1100 | 5.9 | Residential | Low |
| 13a | MS | Hickory Flat | 34.626133 | -89.227533 | 1 | 0.0289 | 63.496 | 420 | 1500 | 6.64 | 100 | Low |
| 13b | MS | Hickory Flat | 34.626133 | -89.227533 | 1 | 0.0316 | 70.3 | 420 | 1500 | 6.64 | 100 | Low |
| 13c | MS | Hickory Flat | 34.626133 | -89.227533 | 1 | 0.0321 | 68.717 | 420 | 1500 | 6.64 | 100 | Low |
| 14a | MS | Blue Springs | 34.3914 | -88.89155 | 1 | 0.0337 | 136.722 | 620 | 1600 | 6.54 | 1300 | Low |
| 14b | MS | Blue Springs | 34.3914 | -88.89155 | 1 | 0.0382 | 133.573 | 620 | 1600 | 6.54 | 1300 | Low |
| 14c | MS | Blue Springs | 34.3914 | -88.89155 | 1 | 0.0389 | 125.77 | 620 | 1600 | 6.54 | 1300 | Low |
| 15a | MS | Blue Springs | 34.39265 | -88.893633 | 1 | 0.0337 | 106.567 | 1200 | 2400 | 4.88 | 1300 | Low |
| 15b | MS | Blue Springs | 34.39265 | -88.893633 | 1 | 0.0359 | 106.389 | 1200 | 2400 | 4.88 | 1300 | Low |
| 15c | MS | Blue Springs | 34.39265 | -88.893633 | 1 | 0.0329 | 100.891 | 1200 | 2400 | 4.88 | 1300 | Low |
| 16a | MS | Columbus | 33.56445 | -88.4347 | 4 | 0.0366 | 188.237 | 550 | 2300 | N/A | 7900 | Moderate |
| 16b | MS | Columbus | 33.56445 | -88.4347 | 4 | 0.0333 | 171.677 | 550 | 2300 | N/A | 7900 | Moderate |
| 16c | MS | Columbus | 33.56445 | -88.4347 | 4 | 0.0314 | 179.719 | 550 | 2300 | N/A | 7900 | Moderate |
| 17a | AL | Ethelsville | 33.464833 | -88.242567 | 4 | 0.0301 | 106.481 | 870 | 1700 | 5.84 | Residential | Low |
| 17b | AL | Ethelsville | 33.464833 | -88.242567 | 4 | 0.0318 | 101.365 | 870 | 1700 | 5.84 | Residential | Low |
| 17c | AL | Ethelsville | 33.464833 | -88.242567 | 4 | 0.0305 | 99.063 | 870 | 1700 | 5.84 | Residential | Low |
| 18a | AL | Tuscaloosa | 33.236333 | -87.559267 | 4 | 0.0446 | 43.289 | 1000 | 2400 | 6.65 | 36350 | Extreme |
| 18b | AL | Tuscaloosa | 33.236333 | -87.559267 | 4 | 0.0377 | 45.381 | 1000 | 2400 | 6.65 | 36350 | Extreme |
| 18c | AL | Tuscaloosa | 33.236333 | -87.559267 | 4 | 0.0398 | 36.16 | 1000 | 2400 | 6.65 | 36350 | Extreme |
| 19a | AL | Tuscaloosa | 33.2164 | -87.530617 | 4 | 0.0325 | 130.844 | 540 | 1800 | 6.54 | 53390 | Extreme |
| 19b | AL | Tuscaloosa | 33.2164 | -87.530617 | 4 | 0.0368 | 125.491 | 540 | 1800 | 6.54 | 53390 | Extreme |
| 19c | AL | Tuscaloosa | 33.2164 | -87.530617 | 4 | 0.0318 | 135.139 | 540 | 1800 | 6.54 | 53390 | Extreme |
| 20a | AL | Bessemer | 33.359017 | -87.008967 | 4 | 0.0425 | 126.966 | 390 | 1500 | 6.27 | 44700 | Extreme |
| 20b | AL | Bessemer | 33.359017 | -87.008967 | 4 | 0.0432 | 117.661 | 390 | 1500 | 6.27 | 44700 | Extreme |
| 20c | AL | Bessemer | 33.359017 | -87.008967 | 4 | 0.0446 | 115.632 | 390 | 1500 | 6.27 | 44700 | Extreme |
| 21a | AL | Oxford | 33.6125 | -85.793667 | 4 | 0.0276 | 124.561 | 670 | 2500 | 6.13 | 16600 | High |
| 21b | AL | Oxford | 33.6125 | -85.793667 | 4 | 0.0221 | 102.17 | 670 | 2500 | 6.13 | 16600 | High |
| 21c | AL | Oxford | 33.6125 | -85.793667 | 4 | 0.0224 | 107.451 | 670 | 2500 | 6.13 | 16600 | High |
| 22a | AL | Hollis Crossroads | 33.53935 | -85.619783 | 4 | 0.0227 | 122.972 | 720 | 2200 | 6.6 | 2320 | Low |
| 22b | AL | Hollis Crossroads | 33.53935 | -85.619783 | 4 | 0.0201 | 117.195 | 720 | 2200 | 6.6 | 2320 | Low |
| 22c | AL | Hollis Crossroads | 33.53935 | -85.619783 | 4 | 0.0242 | 115.799 | 720 | 2200 | 6.6 | 2320 | Low |
| 23a | GA | Douglasville | 33.748317 | -84.702667 | 5 | 0.0309 | 112.748 | 490 | 2300 | 5.58 | 27400 | High |
| 23b | GA | Douglasville | 33.748317 | -84.702667 | 5 | 0.0301 | 109.723 | 490 | 2300 | 5.58 | 27400 | High |
| 23c | GA | Douglasville | 33.748317 | -84.702667 | 5 | 0.0333 | 101.907 | 490 | 2300 | 5.58 | 27400 | High |
| 24a | GA | Auburn | 33.9675 | -83.8219 | 5 | 0.0382 | 207.149 | 730 | 2400 | 5.95 | 33800 | Extreme |
| 24b | GA | Auburn | 33.9675 | -83.8219 | 5 | 0.0377 | 232.74 | 730 | 2400 | 5.95 | 33800 | Extreme |
| 24c | GA | Auburn | 33.9675 | -83.8219 | 5 | 0.0392 | 209.692 | 730 | 2400 | 5.95 | 33800 | Extreme |
| 25a | GA | Athens | 33.92935 | -83.367933 | 5 | 0.0352 | 92.681 | 970 | 2800 | 5.72 | 7470 | Moderate |
| 25b | GA | Athens | 33.92935 | -83.367933 | 5 | 0.037 | 103.631 | 970 | 2800 | 5.72 | 7470 | Moderate |
| 25c | GA | Athens | 33.92935 | -83.367933 | 5 | 0.0356 | 103.07 | 970 | 2800 | 5.72 | 7470 | Moderate |
| 26a | GA | Athens | 33.963333 | -83.395833 | 5 | 0.0261 | 105.496 | 680 | 2000 | 5.03 | 25100 | High |
| 26b | GA | Athens | 33.963333 | -83.395833 | 5 | 0.0324 | 111.103 | 680 | 2000 | 5.03 | 25100 | High |
| 26c | GA | Athens | 33.963333 | -83.395833 | 5 | 0.0314 | 104.118 | 680 | 2000 | 5.03 | 25100 | High |
| 27a | GA | Athens | 33.976217 | -83.376967 | 5 | 0.0413 | 102.401 | 1200 | 3100 | 5.26 | Residential | Low |
| 27b | GA | Athens | 33.976217 | -83.376967 | 5 | 0.0356 | 116.381 | 1200 | 3100 | 5.26 | Residential | Low |
| 27c | GA | Athens | 33.976217 | -83.376967 | 5 | 0.0363 | 103.514 | 1200 | 3100 | 5.26 | Residential | Low |
| 28a | GA | Gainesville | 34.359233 | -83.8626 | 5 | 0.0416 | 76.911 | 370 | 2500 | 5.06 | 26200 | High |
| 28b | GA | Gainesville | 34.359233 | -83.8626 | 5 | 0.0437 | 79.087 | 370 | 2500 | 5.06 | 26200 | High |
| 28c | GA | Gainesville | 34.359233 | -83.8626 | 5 | 0.0434 | 71.137 | 370 | 2500 | 5.06 | 26200 | High |
| 29a | GA | Cisco | 34.951583 | -84.737083 | 2 | 0.0299 | 104.182 | 340 | 2200 | 6.69 | 2590 | Low |
| 29b | GA | Cisco | 34.951583 | -84.737083 | 2 | 0.0304 | 101.655 | 340 | 2200 | 6.69 | 2590 | Low |
| 29c | GA | Cisco | 34.951583 | -84.737083 | 2 | 0.0334 | 97.073 | 340 | 2200 | 6.69 | 2590 | Low |
| 30a | TN | Cleveland | 35.151733 | -84.896083 | 2 | 0.0356 | 97.287 | 560 | 2700 | N/A | 10163 | Moderate |
| 30b | TN | Cleveland | 35.151733 | -84.896083 | 2 | 0.0333 | 83.302 | 560 | 2700 | N/A | 10163 | Moderate |
| 30c | TN | Cleveland | 35.151733 | -84.896083 | 2 | 0.0316 | 80.302 | 560 | 2700 | N/A | 10163 | Moderate |
| 31a | TN | Chattanooga | 35.017767 | -85.28 | 2 | 0.0325 | 89.107 | 530 | 2600 | 6.48 | 124272 | Extreme |
| 31b | TN | Chattanooga | 35.017767 | -85.28 | 2 | 0.0346 | 81.313 | 530 | 2600 | 6.48 | 124272 | Extreme |
| 31c | TN | Chattanooga | 35.017767 | -85.28 | 2 | 0.037 | 92.83 | 530 | 2600 | 6.48 | 124272 | Extreme |
| 32a | AL | Huntsville | 34.76135 | -86.57425 | 2 | 0.0389 | 110.913 | 380 | 2600 | 7.17 | 8650 | Moderate |
| 32b | AL | Huntsville | 34.76135 | -86.57425 | 2 | 0.0352 | 103.407 | 380 | 2600 | 7.17 | 8650 | Moderate |
| 32c | AL | Huntsville | 34.76135 | -86.57425 | 2 | 0.0405 | 117.246 | 380 | 2600 | 7.17 | 8650 | Moderate |
| 33a | AL | Rogersville | 34.800167 | -87.175467 | 1 | 0.0408 | 76.276 | 510 | 1700 | 6.83 | 13150 | Moderate |
| 33b | AL | Rogersville | 34.800167 | -87.175467 | 1 | 0.0367 | 83.057 | 510 | 1700 | 6.83 | 13150 | Moderate |
| 33c | AL | Rogersville | 34.800167 | -87.175467 | 1 | 0.0357 | 65.589 | 510 | 1700 | 6.83 | 13150 | Moderate |
| 34a | AL | Sheffield | 34.779167 | -87.668667 | 1 | 0.0426 | 178.94 | 450 | 2600 | N/A | 31510 | Extreme |
| 34b | AL | Sheffield | 34.779167 | -87.668667 | 1 | 0.0447 | 148.858 | 450 | 2600 | N/A | 31510 | Extreme |
| 34c | AL | Sheffield | 34.779167 | -87.668667 | 1 | 0.0434 | 171.456 | 450 | 2600 | N/A | 31510 | Extreme |
| 35a | MS | Corinth | 34.89435 | -88.468633 | 1 | 0.0309 | 80.401 | 480 | 2700 | 6.74 | 15000 | Moderate |
| 35b | MS | Corinth | 34.89435 | -88.468633 | 1 | 0.0305 | 79.507 | 480 | 2700 | 6.74 | 15000 | Moderate |
| 35c | MS | Corinth | 34.89435 | -88.468633 | 1 | 0.0307 | 75.271 | 480 | 2700 | 6.74 | 15000 | Moderate |
| 36a | MS | Walnut | 34.945833 | -88.79805 | 1 | 0.0342 | 64.41 | 360 | 2300 | 6.67 | 9200 | Moderate |
| 36b | MS | Walnut | 34.945833 | -88.79805 | 1 | 0.0324 | 67.992 | 360 | 2300 | 6.67 | 9200 | Moderate |
| 36c | MS | Walnut | 34.945833 | -88.79805 | 1 | 0.0276 | 58.524 | 360 | 2300 | 6.67 | 9200 | Moderate |
| 37a | MS | Walnut | 34.94525 | -88.897283 | 1 | 0.0156 | 170.218 | 770 | 2900 | N/A | Residential | Low |
| 37b | MS | Walnut | 34.94525 | -88.897283 | 1 | 0.0222 | 162.662 | 770 | 2900 | N/A | Residential | Low |
| 37c | MS | Walnut | 34.94525 | -88.897283 | 1 | 0.0182 | 179.949 | 770 | 2900 | N/A | Residential | Low |
| 38a | MS | Canaan | 34.94955 | -89.09645 | 1 | 0.0337 | 102.844 | 510 | 2600 | 6.45 | 7200 | Moderate |
| 38b | MS | Canaan | 34.94955 | -89.09645 | 1 | 0.0379 | 121.96 | 510 | 2600 | 6.45 | 7200 | Moderate |
| 38c | MS | Canaan | 34.94955 | -89.09645 | 1 | 0.0356 | 105.844 | 510 | 2600 | 6.45 | 7200 | Moderate |