# Supplementary Material

**Table S1**. Spectral Reflectance Indices (SRIs) calculated in teak (*Tectona grandis*) clones.

| SRIs | Name | Formula | Reference |
|---|---|---|---|
| CAI | Cellulose absorption Index | $100 \times (0.5 \times (R_{2030} + R_{2210}) - R_{2100})$ | 40 |
| CAI | Cellulose absorption Index 2 | $0.5 \times (R_{2020} + R_{2220}) - R_{2100}$ | 41 |
| DAI | Difference 1725/970 Difference LAI | $R_{1725} - R_{970}$ | 42 |
| NDWI-Hyp | Normalized Difference 1070/1200 NDWI-Hyperion | $\frac{R_{1070} - R_{1200}}{R_{1070} + R_{1200}}$ | 43 |
| ND1080/1180 | Normalized Difference 1080/1180 | $\frac{R_{1080} - R_{1180}}{R_{1080} + R_{1180}}$ | 44 |
| ND1080/1260 | Normalized Difference 1080/1260 | $\frac{R_{1080} - R_{1260}}{R_{1080} + R_{1260}}$ | 44 |
| ND1080/1450 | Normalized Difference 1080/1450 | $\frac{R_{1080} - R_{1450}}{R_{1080} + R_{1450}}$ | 44 |
| ND1080/1675 | Normalized Difference 1080/1675 | $\frac{R_{1080} - R_{1675}}{R_{1080} + R_{1675}}$ | 44 |
| ND1080/1260 | Normalized Difference 1080/2170 | $\frac{R_{1080} - R_{2170}}{R_{1080} + R_{2170}}$ | 44 |
| LWVI2 | Difference 1094/ 1205 Leaf water VI 2 | $\frac{R_{1094} - R_{1205}}{R_{1094} + R_{1205}}$ | 45 |
| ND1180/1450 | Normalized Difference 1080/1450 | $\frac{R_{1080} - R_{1450}}{R_{1080} + R_{1450}}$ | 44 |
| ND1180/1675 | Normalized Difference 1080/1675 | $\frac{R_{1080} - R_{1675}}{R_{1080} + R_{1675}}$ | 44 |
| ND1180/2170 | Normalized Difference 1080/2170 | $\frac{R_{1080} - R_{2170}}{R_{1080} + R_{2170}}$ | 44 |
| ND1260/1450 | Normalized Difference 1260/1450 | $\frac{R_{1260} - R_{1450}}{R_{1260} + R_{1450}}$ | 44 |
| ND1260/1675 | Normalized Difference 1260/1675 | $\frac{R_{1260} - R_{1675}}{R_{1260} + R_{1675}}$ | 44 |
| ND1260/2170 | Normalized Difference 1260/2170 | $\frac{R_{1260} - R_{1675}}{R_{1260} + R_{2170}}$ | 44 |
| NDBleaf | Normalized Difference leaf canopy biomass | $\frac{R_{2160} - R_{1540}}{R_{2160} + R_{1540}}$ | 46 |
| NDlma | Normalized Difference leaf mass per area | $\frac{R_{2260} - R_{1490}}{R_{2260} + R_{1490}}$ | 42 |
| ND960/1180 | Normalized Difference 960/1180 | $\frac{R_{960} - R_{1180}}{R_{960} + R_{1180}}$ | 44 |
| ND960/1260 | Normalized Difference 960/1260 | $\frac{R_{960} - R_{1260}}{R_{960} + R_{1260}}$ | 44 |

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|---|---|---|---|
| ND960/1450 | Normalized Difference 960/1450 | $\frac{R_{960} - R_{1450}}{R_{960} + R_{1450}}$ | 44 |
| ND960/1675 | Normalized Difference 960/1675 | $\frac{R_{960} - R_{1675}}{R_{960} + R_{1675}}$ | 44 |
| ND960/2170 | Normalized Difference 960/2170 | $\frac{R_{960} - R_{2170}}{R_{960} + R_{2170}}$ | 44 |
| NDLI | Normalized Difference Lignin Index | $\frac{\log(\frac{1}{R_{1754}}) - \log(\frac{1}{R_{1680}})}{\log\left(\frac{1}{R_{1754}}\right) + \log(\frac{1}{R_{1680}})}$ | 47 |
| NDNI | Normalized Difference Nitrogen Index | $\frac{\log(\frac{1}{R_{1510}}) - \log(\frac{1}{R_{1680}})}{\log\left(\frac{1}{R_{1510}}\right) + \log(\frac{1}{R_{1680}})}$ | 47 |
| RVIhyp | Simple Ratio 1058/1148 | $\frac{R_{1058}}{R_{1148}}$ | 48 |
| SR1080/1180 | Simple Ratio 1080/1180 | $\frac{R_{1080}}{R_{1180}}$ | 44 |
| SR1080/1260 | Simple Ratio 1080/1260 | $\frac{R_{1080}}{R_{1260}}$ | 44 |
| SR1080/1450 | Simple Ratio 1080/1450 | $\frac{R_{1080}}{R_{1450}}$ | 44 |
| SR1080/1675 | Simple Ratio 1080/1675 | $\frac{R_{1080}}{R_{1675}}$ | 44 |
| SR1080/2170 | Simple Ratio 1080/2170 | $\frac{R_{1080}}{R_{2170}}$ | 44 |
| SR1180/1080 | Simple Ratio 1180/1080 | $\frac{R_{1180}}{R_{1080}}$ | 44 |
| SR1180/1450 | Simple Ratio 1180/1450 | $\frac{R_{1180}}{R_{1450}}$ | 44 |
| SR1180/1675 | Simple Ratio 1180/1675 | $\frac{R_{1180}}{R_{1675}}$ | 44 |
| SR1180/2170 | Simple Ratio 1180/2170 | $\frac{R_{1180}}{R_{2170}}$ | 44 |
| WC | Simple Ratio 1193/1126 Water content | $\frac{R_{1193}}{R_{1126}}$ | 49 |
| LAIDI | Simple Ratio 1250/1050 Leaf area determining index | $\frac{R_{1250}}{R_{1050}}$ | 42 |
| SR1260/1080 | Simple Ratio 1260/1080 | $\frac{R_{1260}}{R_{1080}}$ | 44 |
| SR1260/1450 | Simple Ratio 1260/1450 | $\frac{R_{1260}}{R_{1450}}$ | 44 |
| SR1260/1675 | Simple Ratio 1260/1675 | $\frac{R_{1260}}{R_{1675}}$ | 44 |
| SR1260/2170 | Simple Ratio 1260/2170 | $\frac{R_{1260}}{R_{2170}}$ | 44 |
| SR1450/1080 | Simple Ratio 1450/1080 | $\frac{R_{1450}}{R_{1080}}$ | 44 |
| SR1450/1180 | Simple Ratio 1450/1180 | $\frac{R_{1450}}{R_{1180}}$ | 44 |
| SR1450/1260 | Simple Ratio 1450/1260 | $\frac{R_{1450}}{R_{1260}}$ | 44 |

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|---|---|---|---|
| SR1450/960 | Simple Ratio 1450/960 | $\frac{R_{1450}}{R_{960}}$ | 44 |
| TM5/TM7 | Simple Ratio 1650/2218 | $\frac{R_{1650}}{R_{2218}}$ | 50 |
| SR1675/1080 | Simple Ratio 1675/1080 | $\frac{R_{1675}}{R_{1080}}$ | 44 |
| SR1675/1180 | Simple Ratio 1675/1180 | $\frac{R_{1675}}{R_{1180}}$ | 44 |
| SR1675/1260 | Simple Ratio 1675/1260 | $\frac{R_{1675}}{R_{1260}}$ | 44 |
| SR1675/960 | Simple Ratio 1675/960 | $\frac{R_{1675}}{R_{960}}$ | 44 |
| SR2170/1080 | Simple Ratio 2170/1080 | $\frac{R_{2170}}{R_{1080}}$ | 44 |
| SR2170/1180 | Simple Ratio 2170/1180 | $\frac{R_{2170}}{R_{1180}}$ | 44 |
| SR2170/1260 | Simple Ratio 2170/1260 | $\frac{R_{2170}}{R_{1260}}$ | 44 |
| SR2170/960 | Simple Ratio 2170/960 | $\frac{R_{2170}}{R_{960}}$ | 44 |
| WBI3 | Simple Ratio 950/900 Water band index | $\frac{R_{950}}{R_{900}}$ | 51 |
| WBI4 | Simple Ratio 895/972 Water band index 4 | $\frac{R_{895}}{R_{972}}$ | 52 |
| SR960/1180 | Simple Ratio 960/1180 | $\frac{R_{960}}{R_{1180}}$ | 44 |
| SR960/1260 | Simple Ratio 960/1260 | $\frac{R_{960}}{R_{1260}}$ | 44 |
| SR960/1450 | Simple Ratio 960/1450 | $\frac{R_{960}}{R_{1450}}$ | 44 |
| SR960/1675 | Simple Ratio 960/1675 | $\frac{R_{960}}{R_{1675}}$ | 44 |
| SR960/2170 | Simple Ratio 960/2170 | $\frac{R_{960}}{R_{2170}}$ | 44 |
| PWI | Plant Water Index, Water Band Index (WBI), Water Index (WI) | $\frac{R_{970}}{R_{900}}$ | 53 |
| WBI | Simple Ratio 970/902 Water band index | $\frac{R_{970}}{R_{902}}$ | 54 |
| Single Band 1020 | SB1020 | $R_{1020}$ | 55 |
| Single Band 1040 | SB1040 | $R_{1040}$ | 55 |
| Single Band 1120 | SB1120 | $R_{1120}$ | 55 |
| Single Band 1200 | SB1200 | $R_{1200}$ | 55 |
| Single Band 1400 | SB1400 | $R_{1400}$ | 55 |
| Single Band 1420 | SB1420 | $R_{1420}$ | 55 |

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|---|---|---|---|
| Single Band 1450 | SB1450 | $R_{1450}$ | 55 |
| Single Band 1490 | SB1490 | $R_{1490}$ | 55 |
| Single Band 1510 | SB1510 | $R_{1510}$ | 55 |
| Single Band 1530 | SB1530 | $R_{1530}$ | 55 |
| Single Band 1540 | SB1540 | $R_{1540}$ | 55 |
| Single Band 1580 | SB1580 | $R_{1580}$ | 55 |
| Single Band 1690 | SB1690 | $R_{1690}$ | 55 |
| Single Band 1780 | SB1780 | $R_{1780}$ | 55 |
| Single Band 1788 | SB1788 | $R_{1788}$ | 55 |
| Single Band 1820 | SB1820 | $R_{1820}$ | 55 |
| Single Band 1900 | SB1900 | $R_{1900}$ | 55 |
| Single Band 1940 | SB1940 | $R_{1940}$ | 55 |
| Single Band 1960 | SB1960 | $R_{1960}$ | 55 |
| Single Band 1980 | SB1980 | $R_{1980}$ | 55 |
| Single Band 2000 | SB2000 | $R_{2000}$ | 55 |
| Single Band 2060 | SB2060 | $R_{2060}$ | 55 |
| Single Band 2080 | SB2080 | $R_{2080}$ | 55 |
| Single Band 2100 | SB2100 | $R_{2100}$ | 55 |
| Single Band 2130 | SB2130 | $R_{2130}$ | 55 |
| Single Band 2180 | SB2180 | $R_{2180}$ | 55 |
| Single Band 2218 | SB2218 | $R_{2218}$ | 55 |
| Single Band 2240 | SB2240 | $R_{2240}$ | 55 |

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|---|---|---|---|
| Single Band 2250 | SB2250 | $R_{2250}$ | 55 |
| Single Band 2270 | SB2270 | $R_{2270}$ | 55 |
| Single Band 2280 | SB2280 | $R_{2280}$ | 55 |
| Single Band 2300 | SB2300 | $R_{2300}$ | 55 |
| Single Band 2310 | SB2310 | $R_{2310}$ | 55 |
| Single Band 2320 | SB2320 | $R_{2320}$ | 55 |
| Single Band 2340 | SB2340 | $R_{2340}$ | 55 |
| Single Band 2350 | SB2350 | $R_{2350}$ | 55 |
| Single Band 910 | SB910 | $R_{910}$ | 55 |
| Single Band 930 | SB930 | $R_{930}$ | 55 |
| Single Band 970 | SB970 | $R_{970}$ | 55 |
| Single Band 990 | SB990 | $R_{990}$ | 55 |
| sLAIDI | sLAIDI | $S\frac{R_{1050} - R_{1250}}{R_{1050} + R_{1250}}$ | 56 |
| SWIRFI | Clay index, SWIR Fine particles Index | ${R_{2209}}^3 \times \frac{{R_{2133}}^2}{R_{2225}}$ | 57 |
| SWIRVI | Shortwave-infrared | $37.72 \times (R_{2210} - R_{2090}) + 26.27\,(R_{2280} - R_{2090}) + 0.57$ | 58 |
| SWIRLI | Shortwave-infrared | $3.87 \times (R_{2210} - R_{2090}) - 27.51\,(R_{2280} - R_{2090}) - 0.2$ | 58 |
| SWIRSI | Shortwave-infrared | $-41.59 \times (R_{2210} - R_{2090}) + 1.24\,(R_{2280} - R_{2090}) + 0.64$ | 58 |