Tabel 1 Score, color, and notation

|  |  |  |  |
| --- | --- | --- | --- |
| Hue score | Leaf hue | | Notation |
| 1 | warma.png | Yellow | 2.5 Y L1 |
| 2 | Green yellow | 2.5 GY DL4 |
| 3 | Light green | 5 GY DL4 |
| 4 | Green | 2.5 G DL1 |
| 5 | Dark green | 2.5 G DL 2 |
| 6 | Very dark green | 2.5 G DK1 |

Table 2 Measurement result of some air quality parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameters | Industrial estates (polluted) | Resident district (control) | Standard quality\* | Unit |
| Nitrogen Oxide (NO2) | 0.014 | 0.005 | 400 | µg m-3 |
| Sulphur Dioxide (SO2) | 0.002 | <0.001 | 900 | µg m-3 |
| Ammonia (NH3) | 0.087 | 0.038 | 17 | mg m-3 |
| Hydrogen Sulfide (H2S) | <0.01 | <0.01 | 14 | mg m-3 |
| Ozone (O3) | 12 | 10 | 200 | µg m-3 |
| Carbon Monoxide (CO) | <1000 | <1000 | 30000 | µg m-3 |
| Hydrocarbon (HC) | 2.96 | <0.65 | 160 | µg m-3 |
| Particle | 9 | <0.027 | 230 | µg m-3 |

\*Standard quality set by PP RI No. 41/1999

Table 3 Leaf number, leaf area and leaf hue of each plant types

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Types of Plants | Increase of leaf number | | Increase of leaf area (cm2) | | Leaf hue score | |
| Polluted | Control | Polluted | Control | Control | Polluted |
| *H. tiliaceus* | 2.67 | 1.83 | 36.83 | 21.5 | 3 | 5 |
| *S. saman* | 27.75 | 24.5 | 2.75 | 2.75 | 5.5 | 6 |
| *L. leucocephala* | 5 | 1 | - | - | 6 | 3 |
| *P. indicus* | 0 | 1 | 6 | 6.75 | 2.5 | 6 |
| *P. longifolia* | 2 | 1.75 | 21.75 | 12.5 | 6 | 3.5 |
| *P. fragrans* | 2.83 | 1.33 | 9.83 | 5.33 | 6 | 2.5 |
| *E. crysta-galli* | 6.67 | 5.5 | 17.83 | 16.5 | 5 | 6 |
| *S. mahagoni* | 0.5 | 1 | 6 | 16 | 5.5 | 6 |
| *C. junghuhniana* | 3.33 | 2.3 | - | - | 3 | 6 |
| *A. auriculiformis* | 4 | 7.5 | 5.75 | 2.83 | 6 | 5 |

Table 4 Stomatal density, leaf thickness, and palisade thickness of each plant types

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Types of Plants | Stomatal density | | Leaf thickness | | Palisade thickness | |
| Control | Polluted | Control | Polluted | Control | Polluted |
| *H. tiliaceus* | 575.2 | 504.6 | 139.7 | 188.6 | 46.7 | 60.7 |
| *S. saman* | 836.6 | 664.9 | 188 | 126.8 | 95.6 | 54.4 |
| *L. leucocephala* | 237.2 | 186.9 | 145.2 | 180 | 42.8 | 67.9 |
| *P. indicus* | 182.5 | 311.1 | 166.2 | 133.6 | 65.9 | 37.4 |
| *P. longifolia* | 315.9 | 489.8 | 119.8 | 156.7 | 21.6 | 44.3 |
| *P. fragrans* | 407.7 | 358.2 | 167.3 | 158.7 | 47 | 60.2 |
| *E. crysta-galli* | 454.9 | 424.5 | 267.1 | 290.2 | 70.7 | 92.9 |
| *S. mahagoni* | 542.7 | 743.2 | 157.5 | 152.5 | 33.1 | 43.5 |
| *C. junghuhniana* | 864.5 | 939.5 | 656.2 | 725.9 | 71.6 | 95.9 |
| *A. auriculiformis* | 466.2 | 387 | 152.5 | 189.6 | 40 | 46.7 |

Table 5 Ascorbic acid content, Chlorophyll, pH, and water content of each plant types

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Types of Plant | Ascorbic acid  (mg g-1) | | Chlorophyll  (mg g-1) | | pH | | Water content (%) | |
| Polluted | Control | Polluted | Control | Polluted | Control | Polluted | Control |
| *H. tiliaceus* | 12.62 | 6.40 | 2.80 | 10.70 | 7.2 | 6.9 | 65.48 | 65.66 |
| *S. saman* | 8.08 | 10.51 | 6.15 | 11.10 | 6.8 | 6.7 | 67.36 | 58.64 |
| *L. leucocephala* | 15.54 | 15.50 | 4.60 | 6.40 | 6.9 | 6.5 | 66.54 | 68.96 |
| *P. indicus* | 8.30 | 3.37 | 8.90 | 14.05 | 6.8 | 6.2 | 66.21 | 77.82 |
| *P. longifolia* | 7.54 | 2.31 | 7.65 | 6.35 | 5.8 | 6.2 | 57.28 | 59.84 |
| *P. fragrans* | 4.33 | 6.65 | 3.50 | 7.00 | 5.8 | 6.1 | 53.89 | 59.84 |
| *E. crysta-galli* | 5.21 | 10.94 | 6.30 | 15.05 | 6.8 | 7.3 | 66.64 | 68.75 |
| *S. mahagoni* | 10.25 | 12.70 | 9.15 | 14.35 | 6.5 | 6 | 61.53 | 60.5 |
| *C. junghuhniana* | 6.54 | 6.32 | 4.35 | 2.35 | 6.3 | 6.2 | 61.63 | 59.67 |
| *A. auriculiformis* | 13.61 | 16.01 | 3.70 | 3.70 | 5.4 | 6.4 | 61.04 | 66.53 |

Table 6 Comparison of plants tolerance level based on RGR and APTI

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Type of Plants | RGR | | Score  \*\* | Tolerance level  (RGR) | APTI score | Tolerance level  (APTI) |
| Polluted | Control |
| *H. tiliaceus* | 1.228 b\* | 0.717 c | 3 | Tolerant | 19.16 | Quite tolerant |
| *S. saman* | 0.094 a | 0.092 a | 2 | Medium | 17.20 | Quite tolerant |
| *L. leucocephala* | \*\*\* | \*\*\* | \*\*\* | \*\*\* | 24.53 | Tolerant |
| *P. indicus* | 0.200 a | 0.225 ab | 1 | Intolerant | 19.65 | Quite tolerant |
| *P. longifolia* | 0.725 a | 0.417 ab | 3 | Tolerant | 15.86 | Moderate |
| *P. fragrans* | 0.328 a | 0.178 ab | 3 | Tolerant | 9.42 | Sensitive |
| *E. crysta-galli* | 0.594 a | 0.550 bc | 3 | Tolerant | 13.48 | Moderate |
| *S. mahagoni* | 0.200 a | 0.533 abc | 1 | Intolerant | 22.19 | Tolerant |
| *C. junghuhniana* | \*\*\* | \*\*\* | \*\*\* | \*\*\* | 13.12 | Moderate |
| *A. auriculiformis* | 0.192 a | 0.094 a | 2 | Medium | 18.48 | Quite tolerant |

\* Values in each column with the same letter arenot significantly different according to Duncan Multiple Range Test at α=5%

\*\* Based on Dahlan modification (1995)

\*\*\* RGR measurement was not done due to technical problems in measuring the increasing of leaf area

Table 7 Plants tolerance based on RGR 1 and modified APTI

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Type of Plants | RGR 1 | | Score \*\* | Modified APTI | | Score \*\* | Tolerance level |
| Polluted | Control | Polluted | Control |
| *H. tiliaceus* | 0.99 b\* | 0.69 b | 2 | 6.24 ab\* | 8.58 ab | 2 | Moderate |
| *S. saman* | 0.12 a | 0.11 a | 2 | 7.30 ab | 6.80 ab | 2 | Moderate |
| *L. leucocephala* | \*\*\* | \*\*\* | \*\*\* | 4.18 ab | 10.06 bc | 1 | Intolerant |
| *P. indicus* | 0.12 a | 0.28 ab | 1 | 5.16 ab | 8.82 b | 1 | Intolerant |
| *P. longifolia* | 1.03 b | 0.67 ab | 3 | 9.48 b | 9.10 bc | 3 | Tolerant |
| *P. fragrans* | 0.24 a | 0.07 ab | 3 | 5.68 ab | 4.92 a | 3 | Tolerant |
| *E. crysta-galli* | 1.02 b | 0.13 ab | 3 | 6.53 b | 10.59 bc | 3 | Tolerant |
| *S. mahagoni* | 0.27 a | 0.87 ab | 1 | 5.94 ab | 6.70 b | 1 | Intolerant |
| *C. junghuhniana* | \*\*\* | \*\*\* | \*\*\* | 8.82 ab | 6.40 b | 3 | Tolerant |
| *A. auriculiformis* | 0.15 a | 0 a | 2 | 2.84 a | 3.80 a | 2 | Moderate |

\* Values in each column with the same letter are not significantly different according to Duncan Multiple Range Test at α=5%

\*\* Based on Dahlan modification (1995)

\*\*\* RGR measurement was not done due to technical problems in measuring the increasing of leaf area