**Table S1.** The quality changes of blue honeysuckle during 28 days of storage.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time (day) | 0 | 3 | 7 | 14 | 21 | 28 |
| Epicuticular wax coverage index (%) | | | | | | |
| CK | 72.30±0.72Aa | 72.00±3.51Aa | 61.65±1.40Cb | 52.77±1.26Cc | 34.82±2.05Cd | 28.11±0.19Ce |
| CA1 | 72.30±0.72Aa | 72.48±1.03Aa | 63.62±0.80Bb | 50.53±0.56Cc | 57.48±0.57Ad | 43.77±0.93Be |
| CA2 | 72.30±0.72Aa | 70.5±0.58Aab | 68.48±1.14Ab | 64.20±1.05Ac | 55.03±1.65Ad | 43.08±2.52Be |
| CA3 | 72.30±0.72Aa | 72.33±0.58Aa | 67.15±0.8Ab | 56.00±2.52Bc | 55.17±0.65Bd | 51.95±0.81Ae |
| Moisture content (%) | | | | | | |
| CK | 84.75%±0.02Aa | 83.63%±0.01Ba | 87.37%±0.01Aa | 86.81%±0.02Aa | 86.43%±0.03Aa | 85.94%±0.02Aa |
| CA1 | 84.75%±0.02Aa | 85.86%±0.02ABa | 88.57%±0.02Aa | 85.68%±0.02Aa | 85.66%±0.01Aa | 84.91%±0.03Aa |
| CA2 | 84.75%±0.02 Aab | 86.81%±0.02Aab | 88.15%±0.02Aa | 87.35%±0.03Aab | 87.87%±0.02Aa | 83.29%±0.02Ab |
| CA3 | 84.75%±0.02Abc | 83.2%±0.00Bc | 91.24%±0.03Aa | 86.26%±0.02Abc | 88.82%±0.04Aab | 86.43%±0.01Abc |
| Weight loss (%) | | | | | | |
| CK | 0.00±0.00Ac | -0.02%±0.001Ab | 0.22%±0.002Ab | 0.36%±0.002Ab | 0.45%±0.002Ab | 13.17%±0.005Aa |
| CA1 | 0.00±0.00Ad | -0.59%±0.005Ac | 0.05%±0.001Abc | 0.79%±0.004Abc | 0.12%±0.006Ab | 6.30%±0.005Ca |
| CA2 | 0.00±0.00Ae | -0.35%±0.002Ad | -0.32%±0.003Bc | -1.07%±0.005Bb | -2.41%±0.004Bb | 3.50%±0.003Da |
| CA3 | 0.00±0.00Ad | -0.10%±0.004Ac | 0.37%±0.004Ab | 0.48%±0.001Ab | 0.62%±0.002Ab | 10.83%±0.002Ba |
| Firmness (N) | | | | | | |
| CK | 1.14±0.04Ac | 1.31±0.18Bb | 1.48±0.02Ba | 1.62±0.1Ba | 1.07±0.02Cc | 1.31±0.06Cb |
| CA1 | 1.14±0.04Ad | 1.45±0.19Bc | 1.07±0.03Dd | 1.99±0.14Aa | 1.01±0.05Cd | 1.69±0.12Ab |
| CA2 | 1.14±0.04Ad | 1.98±0.11Aa | 1.62±0.09Ab | 1.44±0.03Cc | 1.23±0.09Bd | 1.26±0.05Cd |
| CA3 | 1.14±0.04Ac | 1.43±0.03Ba | 1.3±0.06Cb | 1.02±0.02Dd | 1.4±0.12Aab | 1.52±0.05Ba |
| TSS (%) | | | | | | |
| CK | 12.53±0.06Ab | 12.33±0.31Bbc | 12.47±0.35Cb | 13.9±0.35Ba | 13.60±0.26Aa | 11.87±0.32Bc |
| CA1 | 12.53±0.06Aab | 12.83±0.58Bab | 12.23±0.06Cb | 12.43±0.23Cab | 12.40±0.20Bab | 12.90±0.40Aa |
| CA2 | 12.53±0.06Ac | 14.10±0.50Aa | 13.07±0.12Bb | 12.30±0.30Ccd | 12.57±0.21Bc | 11.83±0.23Bd |
| CA3 | 12.53±0.06Acd | 14.37±0.45Aa | 13.53±0.15Ab | 14.77±0.23Aa | 11.83±0.76Bd | 12.73±0.29Ac |
| Acidity (%) | | | | | | |
| CK | 1.45±0.06Aa | 1.08±0.03Cc | 1.23±0.05Cb | 0.87±0.02Cd | 0.94±0.02Bd | 0.9±0.04Bd |
| CA1 | 1.45±0.06Aa | 1.29±0.08Bb | 1.22±0.01Cb | 1.46±0.08Aa | 1.01±0.03Bc | 1.02±0.08Bc |
| CA2 | 1.45±0.06Aa | 1.07±0.03Cc | 1.44±0.03Aa | 1.05±0.02Bc | 1.09±0.07Ac | 1.23±0.16Ab |
| CA3 | 1.45±0.06Aa | 1.48±0.01Aa | 1.34±0.03Bb | 0.97±0.04Bc | 1.00±0.02Bc | 1.00±0.07Bc |
| pH | | | | | | |
| CK | 3.08±0.01Ad | 3.20±0.01Bc | 3.28±0.01Ab | 3.29±0.01Ab | 3.32±0.01Aa | 3.32±0.01Aa |
| CA1 | 3.08±0.01Ad | 3.09±0.02Cd | 3.24±0.02Ba | 3.18±0.01Bc | 3.21±0.01Cb | 3.25±0.01Ca |
| CA2 | 3.08±0.01Af | 3.24±0.00Ab | 3.13±0.01Ce | 3.17±0.01Bd | 3.22±0.01Cc | 3.32±0.01Aa |
| CA3 | 3.08±0.01Ae | 3.18±0.01Bc | 3.14±0.01Cd | 3.18±0.01Bc | 3.24±0.01Bb | 3.29±0.01Ba |
| ETH (pmol kg-1) | | | | | | |
| CK | 2.81±0.06Ad | 1.83±0.01Be | 5.55±0.53Bb | 3.94±0.03Bc | 7.01±0.47Aa | 2.36±0.04Bd |
| CA1 | 2.81±0.06Ab | 0.54±0.01Cd | 2.95±0.01Da | 0.65±0.01Dc | 0.64±0.02BCc | 0.58±0.05Dd |
| CA2 | 2.81±0.06Ad | 0.68±0.02Cf | 4.54±0.15Cb | 5.92±0.28Aa | 1.04±0.02Be | 4.08±0.03Ac |
| CA3 | 2.81±0.06Ab | 6.62±0.46Aa | 6.44±0.22Aa | 1.03±0.01Cc | 0.42±0.07Cd | 0.95±0.01Cc |
| MDA (nmol g-1) | | | | | | |
| CK | 198.05±1.85Aa | 72.25±0.33Cf | 191.58±3.90Cb | 171.53±2.62Bc | 107.09±1.87Bd | 77.25±0.88De |
| CA1 | 198.05±1.85Ab | 157.23±3.96Bc | 369.38±10.32Aa | 192.32±5.75Ab | 112.17±2.57Ad | 112.97±2.88Bd |
| CA2 | 198.05±1.85Aa | 162.80±4.41Bb | 87.40±1.84De | 133.94±1.62Dc | 99.74±2.75Cd | 134.73±3.00Ac |
| CA3 | 198.05±1.85Ac | 261.55±7.36Aa | 247.05±10.98Bb | 147.23±4.01Cd | 95.15±1.66De | 96.28±1.78Ce |
| ABA (g kg-1) | | | | | | |
| CK | 28.91±0.10Ab | 33.89±0.15Da | 17.68±0.13Dd | 14.41±0.08Ce | 18.18±0.01Bc | 8.64±0.01Cf |
| CA1 | 28.91±0.10Ab | 40.71±0.54Ba | 29.31±0.18Cb | 26.56±0.28Bc | 15.41±0.01Ce | 20.73±0.24Ad |
| CA2 | 28.91±0.10Ac | 36.10±1.22Ca | 31.53±0.39Bb | 9.75±0.14Df | 22.85±1.09Ad | 20.55±0.27Ae |
| CA3 | 28.91±0.10Ad | 43.65±0.43Aa | 38.85±0.28Ac | 42.28±0.92Ab | 21.60±0.53Ae | 14.32±0.39Bf |
| ASA (mg kg-1) | | | | | | |
| CK | 70.9±0Af | 112±0.6Aa | 94.1±0.2Bb | 79.1±0.2Bd | 91.1±1.7Bc | 72.8±1.2Be |
| CA1 | 70.9±0Acd | 89.1±0.4Bb | 103.7±0.6Aab | 67.5±0.7Cd | 114.5±0.9Aa | 86.5±27.4Abc |
| CA2 | 70.9±0Ac | 83.9±1Ca | 49.4±2Dd | 78.8±0.4Bb | 82.7±0.6Ca | 73.2±3.8Bc |
| CA3 | 70.9±0Ae | 73.9±0.1Dd | 83.9±0.9Cb | 116.3±0.1Aa | 116.9±3.2Aa | 76.4±0.3Bc |
| Respiratory rate (mg CO2 kg-1 h-1) | | | | | | |
| CK | 39.56±0.35Ac | 55.19±3.56Ab | 43.41±2.97Bc | 72.72±2.04Aa | 42.88±2.10Bc | 41.37±1.21Bc |
| CA1 | 39.56±0.35Ac | 46.41±4.82Bb | 31.73±0.38Cd | 52.35±2.45Ba | 30.51±1.31Cde | 26.72±1.84De |
| CA2 | 39.56±0.35Acd | 46.2±1.43Ba | 40.63±2.98Bbc | 43.53±2.76Cab | 20.99±1.63De | 36.18±0.83Cd |
| CA3 | 39.56±0.35Ae | 56.63±1.73Ac | 78.01±1.05Aa | 52.52±3.58Bd | 55.83±1.66Ac | 61.49±0.89Ab |
| TPC (GAE g kg-1) | | | | | | |
| CK | 27.63±0.45Aa | 23.74±0.45Bc | 26.6±0.7Bb | 21.04±0.46Bd | 20.51±0.06Cd | 17.64±0.1Ce |
| CA1 | 27.63±0.45Aa | 25.17±0.6Ac | 26.58±0.49Bb | 25.46±0.36Ac | 27.76±0.5Aa | 20.78±0.45Bd |
| CA2 | 27.63±0.45Aa | 24.11±0.26Bc | 24.63±0.47Cc | 26.37±0.4Ab | 22.04±0.82BCd | 19.57±0.47Be |
| CA3 | 27.63±0.45Ab | 25.62±0.77Abc | 30.38±0.49Aa | 26.71±1.7Ab | 23.03±1.55Bd | 23.97±1.82Acd |
| TFC (CE g kg-1) | | | | | | |
| CK | 186.43±4.59Aa | 192.68±0.77Ba | 156.09±2.01Bc | 157.19±3.98Dc | 168.4±7.6Ab | 109.87±4Bd |
| CA1 | 186.43±4.59Ab | 181.74±12.75Bb | 217.98±31.59Aa | 224.41±4.34Aa | 174.82±3.89Ab | 113.37±2.64ABc |
| CA2 | 186.43±4.59Abc | 275.34±19.95Aa | 192.03±12.82Ab | 168.61±5.09Ccd | 149.52±9.15Bd | 122.2±8.66Ae |
| CA3 | 186.43±4.59Ac | 270.83±10.12Aa | 205.36±12.06Ab | 196.95±3.81Bbc | 132.7±4.16Cd | 104.79±4.98Be |
| TAC (C3GE mg kg-1) | | | | | | |
| CK | 142.62±4.28Aa | 95.35±1.26Cc | 150.59±7.61Ba | 122.24±8.50Bb | 94.54±5.18Bc | 33.07±0.95Cd |
| CA1 | 142.62±4.28Ab | 103.14±3.32Cc | 272.38±10.22Aa | 134.56±6.21ABb | 141.55±3.41Ab | 83.57±0.39Ad |
| CA2 | 142.62±4.28Aa | 141.36±2.72Ba | 133.37±3.32Cb | 143.01±6.90Aa | 86.92±2.77Cc | 84.25±3.32Ac |
| CA3 | 142.62±4.28Ab | 151.25±7.16Aa | 156.60±4.06Ba | 93.52±4.29Cc | 61.49±3.47Dd | 60.09±1.00Bd |
| DPPH (TE g kg-1) | | | | | | |
| CK | 2.56±0.412Acd | 6.42±0.03Aa | 2.20±0.20Bde | 2.13±0.13Be | 2.58±0.15Cc | 3.40±0.06Bb |
| CA1 | 2.56±0.412Ac | 3.50±0.17Bb | 1.16±0.17Cd | 2.39±0.30Bc | 4.40±0.06Aa | 3.38±0.03Cb |
| CA2 | 2.56±0.412Ad | 2.97±0.08Cc | 5.08±0.08Aa | 3.59±0.15Ab | 3.90±0.10Bb | 3.03±0.06Dc |
| CA3 | 2.56±0.412Ab | 1.88±0.41Dc | 2.24±0.16Bbc | 3.29±0.06Aa | 3.74±0.04Ba | 3.57±0.07Aa |
| ABTS (TE g kg-1) | | | | | | |
| CK | 14.01±0.05Ad | 27.76±0.20Aa | 26.47±0.09Ab | 11.18±0.05Df | 12.45±0.13Ce | 14.81±0.12Ac |
| CA1 | 14.01±0.05Ad | 16.30±0.29Bb | 8.07±0.04Df | 13.00±0.10Ce | 19.01±0.29Aa | 15.65±0.08Ac |
| CA2 | 14.01±0.05Ad | 14.55±0.09Ccd | 22.33±0.09Ba | 17.29±0.14Ab | 16.02±1.78Bbc | 13.02±1.27Bd |
| CA3 | 14.01±0.05Abc | 11.18±0.31Dd | 12.74±1.88Ccd | 15.60±0.65Bab | 16.32±0.77Ba | 15.51±0.09Aab |
| FRAP (FeSO4·7H2O g kg-1) | | | | | | |
| CK | 7.59±0.49Aa | 7.54±0.15Aa | 7.68±0.21Ba | 6.40±0.87Bb | 5.19±0.18Bc | 3.81±0.17Cd |
| CA1 | 7.59±0.49Ab | 7.15±0.22Ab | 10.64±0.58Aa | 7.28±0.62ABb | 6.80±0.12Ab | 4.91±0.19Ac |
| CA2 | 7.59±0.49Aab | 7.91±0.53Aa | 6.31±0.12Cc | 7.19±0.20ABb | 5.14±0.16Bd | 4.58±0.21Bd |
| CA3 | 7.59±0.49Aa | 7.81±0.66Aa | 8.16±0.63Ba | 7.74±0.45Aa | 5.38±0.10Bb | 4.11±0.04Cc |

Mean ± SD. Duncan's multiple range test at (P ≤ 0.05) was used to test the mean separation for significant analysis of variance within the columns (a, b, c...) and rows (A, B, C...). Day 0, day 3, day 7, day 14, day 21, and day 28 represent the sampling times. CK represent air. CA1 represent 20% O2 and 20% CO2, CA2 represent 5% O2 and 20% CO2, CA3 represent 5% O2 and 10% CO2. Each treatment was repeated in three replicates and 500 g fruit of blue honeysuckle was used per replicate.