The following tables and graphs provide data from 3 strawberry cultivar-selection experiments that were conducted over a 3-year period (2010-2012). Plants were grow during the winter/spring 2010; fall 2010 to spring 2011 and fall 2011 to spring 2012 in a double polyethylene covered greenhouse. Please see other parts of this website for construction of the greenhouse, benches and the capillary mat system that was used.

Table 1.Strawberry cultivars that were grown in each of the three experiments. Response type is indicated by

the superscript numbers and an asterisk indicates a different source for the crowns. The plus (+) indicates a grade

of crowns that possesses a larger root system (as per supplier).

|  |  |  |
| --- | --- | --- |
| **Spring 2010** | **Fall 2010 - Spring 2011** | **Fall 2011 - Spring 2012** |
| AC Wendy1  Albion2  Cavendish1  Chandler1  Darselect1  Evie-22  Honeoye1  KRS-101  Seascape2  Strawberry Festival/July1  Strawberry Festival/August1  Sweet Charlie1  Tribute2  1 = June-bearing  2 = Day neutral | AC Wendy1  Albion B\*2  Albion M\*2  Cavendish1  Chandler1  Clancy1  Darselect1  Evie-22  Honeoye1  Portola2  Seascape F\*2  Seascape N\*2  Strawberry Festival1  \*Indicates different sources | Albion2  Cavendish1  Chandler1  Evie-22  Evie-2+2  Portola2  Seascape2  Seascape+2  + = Premium Grade |

Table 2. The results of the 2010 screening experiment (Experiment 1) in which 13 different strawberry cultivars were grown during the winter in a double-layer

polyethylene greenhouse in Lincoln, NE. Crowns were planted in January and berries were counted and weighed weekly from March 3 through April 12, 2010.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cultivar | Week 1 | |  | Week 2 | |  | Week 3 | |  | Week 4 | |  | Week 5 | |  | Week 6 | |  | Week 7 | |  | Totals | |
|  | Number/ Mass (g) | |  | Number/ Mass (g) | |  | Number/ Mass (g) | |  | Number/ Mass (g) | |  | Number/ Mass (g) | |  | Number/ Mass (g) | |  | Number/ Mass (g) | |  | Number/ Mass (g) | |
| AC Wendy | 0 | 0 |  | 9 | 186 |  | 11 | 232 |  | 31 | 470.47 |  | 25 | 299.33 |  | 42 | 492.28 |  | 12 | 117.93 |  | 130 | 1,798.01 |
| Albion | 40 | 614 |  | 28 | 428 |  | 43 | 548 |  | 54 | 545.74 |  | 35 | 381.35 |  | 11 | 120.42 |  | 3 | 34.54 |  | 214 | 2,672.05 |
| Cavendish | 0 | 0 |  | 0 | 0 |  | 12 | 322 |  | 27 | 487.42 |  | 29 | 425.58 |  | 36 | 299.85 |  | 10 | 124.38 |  | 114 | 1,659.23 |
| Chandler | 3 | 30 |  | 15 | 122 |  | 31 | 212 |  | 47 | 273.89 |  | 24 | 113.37 |  | 6 | 29.08 |  | 1 | 13.30 |  | 127 | 793.64 |
| Darselect | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 13 | 177.52 |  | 32 | 414.05 |  | 47 | 405.88 |  | 17 | 116.85 |  | 109 | 1,113.50 |
| Evie-2 | 0 | 0 |  | 0 | 0 |  | 3 | 64 |  | 24 | 477.26 |  | 57 | 1,047.36 |  | 52 | 634.16 |  | 17 | 165.95 |  | 153 | 2,388.73 |
| Honeoye | 0 | 0 |  | 0 | 0 |  | 3 | 50 |  | 28 | 373.16 |  | 61 | 556.44 |  | 67 | 422.37 |  | 11 | 48.12 |  | 170 | 1,450.09 |
| KRS-10 | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 0 | 0 |  | 9 | 211.63 |  | 35 | 729.12 |  | 10 | 175.03 |  | 54 | 1,115.78 |
| Seascape | 0 | 0 |  | 1 | 24 |  | 18 | 264 |  | 68 | 741.02 |  | 56 | 453.99 |  | 39 | 255.90 |  | 15 | 88.29 |  | 197 | 1,827.20 |
| Strawberry  Festival (July) | 30 | 338 |  | 39 | 474 |  | 35 | 424 |  | 29 | 268.32 |  | 13 | 99.18 |  | 12 | 97.33 |  | 6 | 65.37 |  | 164 | 1,766.20 |
| Strawberry  Festival (August) | 4 | 60 |  | 24 | 284 |  | 45 | 474 |  | 46 | 388.47 |  | 27 | 169.06 |  | 10 | 68.97 |  | 2 | 19.29 |  | 158 | 1,463.79 |
| Sweet Charlie | 4 | 32 |  | 17 | 132 |  | 18 | 124 |  | 6 | 36.32 |  | 1 | 4.58 |  | 12 | 143.34 |  | 3 | 32.65 |  | 61 | 504.89 |
| Tribute | 1 | 6 |  | 8 | 92 |  | 33 | 320 |  | 37 | 276.35 |  | 24 | 210.19 |  | 21 | 110.10 |  | 12 | 80.38 |  | 136 | 1,095.02 |

Table 3. Concentrations of glucose, fructose and sucrose as well as total sugars and a calculated sweetness indexz for 13 strawberry cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE during the spring of 2010y (Experiment 1).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cultivar | Glucose  mg g-1 | Fructose  mg g-1 | Sucrose  mg g-1 | Total Sugars  mg g-1 | Sweetness  Index |
| Albion | 9.33 a ±1.20 | 5.62 a ± 0.72 | 1.18 a ± 0.13 | 16.15 a ± 1.98 | 23.88 a ± 2.91 |
| AC Wendy | 6.76 ab ±1.20 | 4.33 ab ± 0.71 | 0.82 b ± 0.13 | 11.90 ab ± 1.96 | 17.81 ab ± 2.90 |
| Strawberry Festival (B) | 6.25 abc ± 1.20 | 3.94 ab ± 0.71 | 0.80 bc ± 0.13 | 11.03 abc ± 1.97 | 16.45 abc ± 2.90 |
| Honeoye | 5.75 bc ± 1.20 | 3.47 bc ± 0.71 | 0.75 bc ± 0.13 | 9.96 bcd ± 1.96 | 14.72 bcd ± 2.89 |
| Seascape | 5.47 bcd ± 1.20 | 2.57 bcde ± 0.71 | 0.73 bc ± 0.13 | 8.82 bcde ± 1.97 | 12.45 bcde ± 2.90 |
| Strawberry Festival (A) | 4.95 bcde ± 1.20 | 2.42 bcde ± 0.71 | 0.57 bcd ± 0.13 | 7.90 bcde ± 1.97 | 11.23 bcdef ± 2.90 |
| Darselect | 4.81 bcde ± 1.20 | 2.65 bcde ± 0.71 | 0.77 bc ± 0.13 | 8.18 bcde ± 1.96 | 11.87 bcde ± 2.89 |
| Cavendish | 4.35 bcdef ± 1.20 | 2.82 bcd ± 0.72 | 0.46 cd ± 0.13 | 7.61 bcdef ± 1.98 | 11.42 bcde ± 2.91 |
| KRS-10 | 4.18 bcdef ± 1.20 | 1.66 cde ± 0.72 | 0.35 d ± 0.13 | 6.17 cdef ± 1.98 | 8.45 cdef ± 2.91 |
| Evie-2 | 3.38 cdef ± 1.20 | 1.73 cde ± 0.72 | 0.52 bcd ± 0.13 | 5.60 cdef ± 1.98 | 8.02 def ± 2.91 |
| Chandler | 2.24 def ± 1.20 | 1.45 de ± 0.71 | 0.52 bcd ± 0.13 | 4.25 ef ± 1.96 | 6.33 ef ± 2.89 |
| Sweet Charlie | 2.00 ef ± 1.20 | 2.74 bcd ± 0.71 | 0.52 bcd ± 0.13 | 5.30 def ± 1.97 | 9.04 cdef ± 2.90 |
| Tribute | 1.23 f ± 1.20 | 0.71 e ± 0.71 | 0.28 d ± 0.13 | 2.18 f ± 1.97 | 3.18 f ± 2.90 |

zCalculated as per Keutgen and Pawelik.2007. Food Chem 105:1487-1494.

yNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 4. Concentrations of phenols, flavonoids and anti-oxidant capacity in strawberries from 13 cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE during the spring of 2010z (Experiment 1).

|  |  |  |  |
| --- | --- | --- | --- |
| Cultivar | Phenols  mg g-1 | Flavonoids  mg g-1 | AOAC  *u*m Trolox g-1 |
| Albion | 1.25 cd ± 0.15 | 0.44 abcde ± 0.07 | 43.10 ed ± 5.85 |
| AC Wendy | 1.06 d ± 0.15 | 0.28 e ± 0.07 | 32.75 d ± 6.31 |
| Strawberry Festival (B) | 1.60 abc ± 0.14 | 0.36 de ± 0.07 | 75.00 a ± 5.85 |
| Honeoye | 1.42 abcd ± 0.15 | 0.35 de ± 0.07 | 49.24 cd ± 6.31 |
| Seascape | 1.54 abc ± 0.14 | 0.58 a ± 0.07 | 67.55 ab ± 5.85 |
| Strawberry Festival (A) | 1.54 abc ± 0.14 | 0.38 bcde ± 0.07 | 74.70 a ± 5.85 |
| Darselect | 1.76 ab ± 0.15 | 0.62 a ± 0.07 | 73.00 a ± 6.31 |
| Cavendish | 1.46 abcd ± 0.15 | 0.54 abcd ± 0.07 | 67.87 ab ± 6.30 |
| KRS-10 | 1.35 bcd ± 0.15 | 0.58 abc ± 0.07 | 51.63 bc ± 6.30 |
| Evie-2 | 1.26 cd ± 0.14 | 0.45 abcde ± 0.07 | 54.49 bc ± 5.85 |
| Chandler | 1.67 abc ± 0.15 | 0.58 ab ± 0.07 | 68.52 ab ± 6.31 |
| Sweet Charlie | 1.83 a ± 0.15 | 0.41 abcde ± 0.07 | 58.34 abc ± 6.31 |
| Tribute | 1.07 d ± 0.15 | 0.37 cde ± 0.07 | 54.95 bc ± 6.31 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 5a. Berry mass per plantz was calculated on a weekly basis for each of 13 strawberry cultivars for Week 1 (10/30/2010) through Week 6 (12/04/2010) (Experiment 2). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated with a capillary mat system. The interaction of Week number x Cultivar was significant starting at week 3 and then through the end of the experiment.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 1** | |  | **Week 2** | |  | **Week 3** | | |  | **Week 4** | | |  | **Week 5** | | |  | **Week 6** | | |
| Clancy |  |  | ⎼ ⎼ ⎼ |  | 9.25 | ±0.29 |  | 8.00 | a | ±0.26 |  | 9.12 | b | ±0.29 |  | 6.23 | a | ±0.29 |  | 7.75 | a | ±0.29 |
| Portola |  |  | ⎼ ⎼ ⎼ |  | 9.30 | ±0.65 |  |  |  | ⎼ ⎼ ⎼ |  | 9.84 | b | ±0.63 |  | 14.06 | b | ±0.45 |  | 29.46 | b | ±0.37 |
| Evie-2 |  | 15.42 | ±0.63 |  | 4.15 | ±0.37 |  | 7.04 | a | ±0.45 |  | 0.44 | a | ±0.45 |  | 7.60 | ab | ±0.62 |  | 19.67 | bc | ±0.37 |
| Strawberry Festival |  |  | ⎼ ⎼ ⎼ |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Albion M |  |  | ⎼ ⎼ ⎼ |  | 10.64 | ±0.37 |  | 9.95 | a | ±0.44 |  | 6.32 | b | ±0.45 |  | 6.12 | ab | ±0.32 |  | 11.71 | acd | ±0.26 |
| Albion B |  |  | ⎼ ⎼ ⎼ |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 5.59 | ab | ±0.64 |  |  |  | ⎼ ⎼ ⎼ |  | 14.90 | abd | f ±0.45 |
| AC Wendy |  | 7.15 | ±0.65 |  | 9.24 | ±0.45 |  | 8.17 | a | ±0.64 |  | 10.08 | b | ±0.63 |  |  |  | ⎼ ⎼ ⎼ |  | 8.87 | ace | ±0.63 |
| Seascape N |  | 3.81 | ±0.45 |  | 3.71 | ±0.45 |  | 4.99 | a | ±0.44 |  | 5.70 | b | ±0.32 |  | 9.43 | ab | ±0.31 |  | 7.95 | acf | ±0.32 |
| Seascape F |  |  | ⎼ ⎼ ⎼ |  | 4.65 | ±0.26 |  | 6.21 | a | ±0.29 |  | 7.02 | b | ±0.26 |  | 10.26 | ab | ±0.26 |  | 23.05 | bde | ±0.26 |
| Honeoye |  | 10.02 | ±0.29 |  | 4.38 | ±0.32 |  | 8.24 | a | ±0.32 |  | 6.52 | b | ±0.44 |  | 1.62 | c | ±0.44 |  |  |  | ⎼ ⎼ ⎼ |
| Chandler |  |  | ⎼ ⎼ ⎼ |  | 3.08 | ±0.64 |  | 5.61 | a | ±0.64 |  | 4.05 | a | ±0.63 |  | 16.36 | b | ±0.45 |  | 34.32 | b | ±0.29 |
| Cavendish |  | 9.71 | ±0.63 |  | 8.49 | ±0.32 |  | 9.37 | a | ±0.29 |  | 5.49 | b | ±0.32 |  | 4.77 | abc | ±0.62 |  | 7.12 | af | ±0.45 |
| Darselect |  | 10.53 | ±0.45 |  | 11.99 | ±0.29 |  | 9.87 | a | ±0.26 |  | 8.30 | b | ±0.26 |  | 11.60 | ab | ±0.26 |  | 19.81 | bde | ±0.29 |

z Numbers followed by the same letters are not significantly different at P<0.05

Table 5b**.** Berry mass per plantz was calculated on a weekly basis for each of 13 strawberry cultivars for Week 7 (11/11/2010) through Week 12 (01/15/2011) (Experiment 2). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a capillary mat system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 7** | | |  | **Week 8** | | |  | **Week 9** | | |  | **Week 10** | | |  | **Week 11** | | |  | **Week 12** | | |
| Clancy |  | 6.11 | ad | ±0.32 |  | 3.10 | abc | ±0.62 |  | 0.57 | a | ±0.44 |  | 3.53 | a | ±0.49 |  | 1.08 | a | ±0.37 |  |  |  | ⎼ ⎼ ⎼ |
| Portola |  | 17.71 | bc | ±0.37 |  | 8.91 | b | ±0.63 |  | 3.69 | bc | ±0.45 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Evie-2 |  | 28.53 | c | ±0.49 |  |  |  | ⎼ ⎼ ⎼ |  | 1.41 | abc | ±0.63 |  |  |  | ⎼ ⎼ ⎼ |  | 2.00 | ab | ±0.45 |  | 12.90 | abci | ±0.64 |
| Strawberry Festival |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 19.41 | b | ±0.45 |  | 31.78 | c | ±0.29 |  | 25.56 | ag | ±0.37 |
| Albion M |  | 12.24 | ac | ±0.26 |  | 6.47 | ab | ±0.26 |  | 4.22 | bc | ±0.26 |  | 11.62 | ab | ±0.29 |  | 8.23 | d | ±0.26 |  | 9.20 | abh | ±0.23 |
| Albion B |  | 9.04 | afg | ±0.29 |  | 5.33 | abeh | ±0.44 |  | 7.58 | bc | ±0.32 |  | 7.98 | ab | ±0.29 |  | 13.00 | cd | ±0.26 |  | 25.65 | cdg | ±0.29 |
| AC Wendy |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Seascape N |  | 3.16 | e | ±0.29 |  | 6.13 | abd | ±0.62 |  | 4.67 | bc | ±0.62 |  | 2.72 | a | ±0.46 |  | 5.42 | ade | ±0.62 |  | 6.64 | abcdef | ±0.62 |
| Seascape F |  | 5.90 | dg | ±0.26 |  | 1.89 | cde | ±0.29 |  | 5.28 | bc | ±0.36 |  | 4.71 | a | ±0.28 |  | 6.08 | bdf | ±0.45 |  | 3.97 | ehi | ±0.44 |
| Honeoye |  | 0.88 |  | ±0.64 |  | 0.54 | df | ±0.63 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Chandler |  | 13.75 | abcf | ±0.26 |  | 5.49 | abg | ±0.26 |  | 11.86 | c | ±0.29 |  | 7.42 | ab | ±0.26 |  | 13.87 | cd | ±0.26 |  | 17.10 | abcf | ±0.32 |
| Cavendish |  |  |  | ⎼ ⎼ ⎼ |  | 3.13 | abef | ±0.62 |  | 1.86 | abc | ±0.65 |  | 3.19 | ab | ±0.63 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Darselect |  | 4.35 | deg | ±0.29 |  | 1.16 | cdefgh | ±0.62 |  | 1.90 | ab | ±0.45 |  | 4.00 | ab | ±0.63 |  | 3.11 | aef | ±0.36 |  | 1.88 | ef | ±0.62 |

z Numbers followed by the same letters are not significantly different at P<0.05

Table 5c**.** Berry mass per plantz was calculated on a weekly basis for each of 13 strawberry cultivars for Week 13 (01/22/2011) through Week 18 (02/26/2011) (Experiment 2). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a capillary mat system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 13** | | |  | **Week 14** | | |  | **Week 15** | | |  | **Week 16** | | |  | **Week 17** | | |  | **Week 18** | | |
| Clancy |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 6.88 | abc | ±0.64 |  |  |  | ⎼ ⎼ ⎼ |  | 30.61 | abcde | ±0.65 |
| Portola |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 23.03 | a | ±0.63 |  | 25.86 | b | ±0.45 |  | 19.90 | a | ±0.37 |  | 89.08 | bf | ±0.32 |
| Evie-2 |  | 26.10 | ab | ±0.65 |  | 12.98 | a | ±0.65 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 0.52 | b | ±0.63 |  | 40.66 | cf | ±0.36 |
| Strawberry Festival |  | 10.98 | ab | ±0.32 |  | 23.11 | a | ±0.37 |  | 7.04 | ab | ±0.44 |  | 3.78 | acd | ±0.44 |  | 2.57 | c | ±0.28 |  | 15.32 | de | ±0.29 |
| Albion M |  | 18.83 | ab | ±0.28 |  | 10.48 | a | ±0.44 |  | 18.92 | a | ±0.36 |  | 3.85 | ce | ±0.36 |  | 8.88 | a | ±0.36 |  | 13.04 | e | ±0.26 |
| Albion B |  | 23.00 | b | ±0.26 |  | 17.94 | a | ±0.32 |  | 16.09 | a | ±0.32 |  | 9.83 | bd | ±0.26 |  | 11.99 | a | ±0.26 |  | 50.86 | abc | ±0.26 |
| AC Wendy |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Seascape N |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 40.91 | abc | ±0.26 |
| Seascape F |  | 8.66 | ab | ±0.62 |  | 1.95 |  | ±0.45 |  | 2.43 | b | ±0.44 |  | 0.81 | ac | ±0.63 |  | 2.64 | bc | ±0.47 |  | 30.65 | acd | ±0.29 |
| Honeoye |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Chandler |  | 8.28 | a | ±0.26 |  | 12.84 | a | ±0.32 |  | 8.89 | a | ±0.36 |  | 4.06 | ae | ±0.29 |  | 12.56 | a | ±0.26 |  | 36.66 | ac | ±0.26 |
| Cavendish |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 28.45 | a | ±0.36 |  | 56.92 | abc | ±0.26 |
| Darselect |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 13.08 | ac | ±0.68 |  |  |  | ⎼ ⎼ ⎼ |

z Numbers followed by the same letters are not significantly different at P<0.05

Table 5d. Berry mass per plantz was calculated on a weekly basis for each of 13 strawberry cultivars for Week 19(03/11/2011) through Week 24 (04/12/2011) (Experiment 2). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a capillary mat system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 19** | | |  | **Week 20** | | |  | **Week 21** | | |  | **Week 22** | | |  | **Week 23** | | |  | **Week 24** | | |
| Clancy |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Portola |  | 74.97 | a | ±0.26 |  | 49.90 | a | ±0.26 |  | 89.98 | af | ±0.26 |  | 87.57 | a | ±0.26 |  | 61.43 | a | ±0.26 |  | 50.49 | abh | ±0.26 |
| Evie-2 |  | 70.13 | ab | ±0.29 |  | 52.60 | a | ±0.29 |  | 64.31 | abj | ±0.27 |  | 69.00 | abe | ±0.26 |  | 36.78 | ab | ±0.26 |  | 97.64 | b | ±0.26 |
| Strawberry Festival |  | 39.48 | c | ±0.26 |  | 36.92 | ab | ±0.32 |  | 52.30 | bcegh | ±0.26 |  | 51.72 | ac | ±0.26 |  | 38.88 | ac | ±0.26 |  | 23.84 | cde | ±0.26 |
| Albion M |  | 46.32 | bcdf | ±0.26 |  | 16.67 | c | ±0.26 |  | 28.33 | d | ±0.26 |  | 26.21 | d | ±0.26 |  | 12.09 | g | ±0.26 |  | 14.12 | d | ±0.26 |
| Albion B |  | 62.98 | adf | ±0.26 |  | 45.68 | a | ±0.26 |  | 55.85 | ahi | ±0.26 |  | 33.89 | cde | ±0.25 |  | 33.92 | bcde | ±0.26 |  | 66.04 | ab | ±0.26 |
| AC Wendy |  | 32.65 | ac | ±0.65 |  | 36.89 | ac | ±0.63 |  | 65.82 | aek | ±0.26 |  | 46.85 | bc | ±0.26 |  | 37.01 | ad | ±0.26 |  | 45.52 | ac | ±0.26 |
| Seascape N |  | 58.08 | ac | ±0.26 |  | 46.65 | a | ±0.26 |  | 52.53 | ac | ±0.26 |  | 42.83 | bcd | ±0.26 |  | 34.30 | ae | ±0.26 |  | 43.44 | ac | ±0.26 |
| Seascape F |  | 31.91 | c | ±0.26 |  | 19.52 | c | ±0.26 |  | 32.74 | cd | ±0.26 |  | 31.05 | cd | ±0.26 |  | 15.85 | fg | ±0.26 |  | 37.61 | acf | ±0.26 |
| Honeoye |  | 25.01 | bcef | ±0.45 |  | 16.39 | bc | ±0.45 |  | 34.20 | cd | ±0.26 |  | 33.86 | cd | ±0.26 |  | 30.93 | bcde | ±0.26 |  | 31.70 | cgh | ±0.26 |
| Chandler |  | 71.22 | a | ±0.26 |  | 50.57 | a | ±0.26 |  | 95.75 | fijk | ±0.26 |  | 46.24 | bcd | ±0.26 |  | 29.78 | bcde | ±0.26 |  | 41.27 | ac | ±0.26 |
| Cavendish |  | 67.58 | ade | ±0.26 |  | 37.78 | a | ±0.26 |  | 65.52 | agi | ±0.26 |  | 38.47 | cd | ±0.26 |  | 19.92 | bcdef | ±0.26 |  | 18.11 | defg | ±0.26 |
| Darselect |  | 59.44 | ac | ±0.63 |  | 34.21 | ac | ±0.64 |  | 25.56 | d | ±0.45 |  | 30.65 | cd | ±0.26 |  | 24.06 | bcdef | ±0.26 |  | 66.74 | ab | ±0.29 |

z Numbers followed by the same letters are not significantly different at P<0.05

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 6. Initial flowering date, number of plants flowering at that time, first harvest and peak harvest times for 13 strawberry cultivars grown from mid-September 2010 through mid-April 2011(Experiment 2) in a double-layer polyethylene greenhouse in Lincoln, NE. Total berry mass and number and average berry mass and number were not related to response typez. Plants/pots were spaced on 12 inch by 16 inch centers. | | | | | | | | |
|  | | | | | | | | |
| Cultivar | Typez | Flowering | 1st harvest | Peak times | Total (g) | Ave. berry mass | Total | Ave. number |
|  |  |  |  |  |  | per plant (g) | number | per plant |
| AC Wendy | Jb | 10/05/10 3 plants | 10/22/10 | March | 2,853.85 | 158.55 | 211 | 12 |
|  |  |  |  |  |  |  |  |  |
| Albion B | d-n | 10/26/10 1 plant | 11/16/10 | March/ April | 10,353.39 | 431.39 | 1,155 | 48 |
|  |  |  |  |  |  |  |  |  |
| Albion M | d-n | 10/05/10 2 plants | 11/03/10 | **December** | 5,144.41 | 214.35 | 515 | 21 |
|  |  |  |  | March |  |  |  |  |
| Cavendish | Jb | 10/05/10 6 plants | 10/30/10 | March | 8,073.25 | 336.39 | 664 | 28 |
|  |  |  |  |  |  |  |  |  |
| Chandler | Jb | 10/05/10 1 plant | 11/04/10 | **December** | 11,078.50 | 461.60 | 1,271 | 53 |
|  |  |  |  | March |  |  |  |  |
| Clancy | Jb | 10/05/10 1 plant | 11/01/11 | **November** | 584.52 | 30.76 | 96 | 5 |
|  |  |  |  |  |  |  |  |  |
| Darselect | Jb | 10/05/10 7 plants | 10/28/10 | **November** | 2,323.69 | 116.19 | 260 | 13 |
|  |  |  |  | April |  |  |  |  |
| Evie-2 | d-n | 10/05/10 3 plants | 10/30/10 | March/April | 7,358.88 | 334.50 | 668 | 30 |
|  |  |  |  |  |  |  |  |  |
| Honeoye | Jb | 10/05/10 8 plants | 10/23/10 | March/April | 2,781.72 | 132.46 | 347 | 17 |
|  |  |  |  |  |  |  |  |  |
| Portola | d-n | 10/05/10 1 plant | 11/05/10 | **December** | 6,096.42 | 320.86 | 397 | 21 |
|  |  |  |  | March/April |  |  |  |  |
| Seascape F | d-n | 10/05/10 8 plants | 11/02/10 | **December** | 5,657.28 | 235.72 | 708 | 30 |
|  |  |  |  | March/April |  |  |  |  |
| Seascape N | d-n | 10/05/10 3 plants | 10/29/10 | **December** | 7,751.34 | 322.97 | 893 | 37 |
|  |  |  |  | March/April |  |  |  |  |
| Strawberry Festival | Jb | 12/07/10 4 plants | 12/29/10 | March/April | 3,928.89 | 196.44 | 375 | 19 |
|  |  |  |  |  |  |  |  |  |
| z Jb = June-bearing; d-n = day-neutral | | |  |  |  |  |  |  |

Table 7. Concentrations of glucose, fructose and sucrose as well as total sugars and a calculated sweetness indexz for 13 strawberry cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE during the spring of 2011y (Experiment 2).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Cultivar* | Glucose  mg g-1 | Fructose  mg g-1 | Sucrose  mg g-1 | Total Sugars  mg g-1 | Sweetness  Index |
| Albion | 3.15 ab ±0.49 | 1.75 abc ± 0.27 | 1.38 bc ± 0.24 | 6.28 ab ± 0.98 | 9.03 abc ± 1.41 |
| AC Wendy | 3.73 a ± 0.64 | 2.39 ab ± 0.36 | 2.54 a ± 0.32 | 8.66 a ± 1.30 | 12.66 ab ± 1.86 |
| Strawberry Festival (B) | 1.51 c ± 0.64 | 0.87 d ± 0.36 | 0.83 bc ± 0.32 | 3.20 bc ± 1.30 | 4.62 d ± 1.86 |
| Honeoye | 2.42 abc ± 0.64 | 1.48 bcd ± 0.36 | 1.52 b ± 0.32 | 5.42 abc ± 1.30 | 7.88 bcd ± 1.86 |
| Seascape | 1.59 c ± 0.49 | 0.87 d ± 0.27 | 0.94 bc ± 0.24 | 3.39 bc ± 0.98 | 4.84 d ± 1.41 |
| Darselect | 3.74 a ± 0.64 | 2.57 a ± 0.36 | 2.45 a ± 0.32 | 8.75 a ± 1.30 | 12.94 a ± 1.86 |
| Cavendish | 3.36 ab ± 0.64 | 2.20 ab ± 0.36 | 1.05 bc ± 0.32 | 6.61 ab ± 1.30 | 9.83 abc ± 1.86 |
| Evie-2 | 1.62 c ± 0.64 | 1.10 cd ± 0.36 | 1.19 bc ± 0.32 | 3.91 bc ± 1.30 | 5.76 cd ± 1.86 |
| Chandler | 1.81 bc ± 0.64 | 1.21 cd ± 0.36 | 0.75 bc ± 0.32 | 3.77 bc ± 1.30 | 5.61 cd ± 1.86 |
| Clancy | 1.88 bc ± 0.64 | 1.22 cd ± 0.36 | 0.65 c ± 0.32 | 3.75 bc ± 1.30 | 5.56 cd ± 1.86 |
| Portola | 1.51 c ± 0.64 | 0.72 d ± 0.36 | 0.73 bc ± 0.32 | 2.96 c ± 1.30 | 4.16 d ± 1.86 |
| Grocery | 1.62 c ± 0.64 | 1.04 cd ± 0.36 | 1.17 bc ± 0.32 | 3.83 bc ± 1.30 | 5.6 cd ± 1.86 |

zCalculated as per Keutgen and Pawelik. 2007. Food Chem 105:1487-1494.

yNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 8. Concentrations of phenols, flavonoids and ant oxidant capacity (TEAC) in strawberries from 13 cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE during the spring of 2011z (Experiment 2).

|  |  |  |  |
| --- | --- | --- | --- |
| *Cultivar* | Phenols  mg g-1 | Flavonoids  mg g-1 | TEAC  *u*m Trolox g-1 |
| Albion | 1.36 abc ± 0.12 | 0.53 abc ± 0.06 | 72.47 ab ± 5.86 |
| AC Wendy | 0.93 d ± 0.12 | 0.31 f ± 0.06 | 46.43 c ± 8.28 |
| Strawberry Festival (B) | 1.47 ab ± 0.12 | 0.48 bcdef ± 0.06 | 90.32 a ± 8.28 |
| Honeoye | 1.17 bcd ± 0.12 | 0.49 bcde ± 0.06 | 74.07 ab ± 8.28 |
| Seascape | 1.51 a ± 0.08 | 0.64 a ± 0.04 | 81.70 a ± 5.86 |
| Darselect | 1.55 a ± 0.12 | 0.59 ab ± 0.06 | 84.76 a ± 8.28 |
| Cavendish | 1.07 cd ± 0.12 | 0.42 cdef ± 0.06 | 77.40 ab ± 8.28 |
| Evie=2 | 1.37 abc ± 0.12 | 0.54 abc ± 0.06 | 87.54 a ± 8.28 |
| Chandler | 1.34 abc ± 0.12 | 0.45 bcdef ± 0.06 | 89.33 a ± 8.28 |
| Clancy | 1.57 a ± 0.12 | 0.52 abcd ± 0.06 | 68.53 abc ± 8.28 |
| Portola | 1.07 cd ± 0.12 | 0.32 ef ± 0.06 | 46.58 c ± 8.28 |
| Grocery | 1.07 cd ± 0.12 | 0.35 def ± 0.06 | 56.46 bc ± 8.28 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

In both graphs, these are raw numbers that were averaged over replications (no statistical implications).

One ounce = 28.35 grams

Table 9a**.** Berry mass per plantz (LSMeans) was calculated on a weekly basis for each of 13 strawberry cultivars for Week 1 (10/30/11) through Week

(12/04/2011) (Experiment 3). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a capillary mat

system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 1** | | |  | **Week 2** | | |  | **Week 3** | | |  | **Week 4** | | |  | **Week 5** | | |  | **Week 6** | | |
| Albion |  | 14.70 | a | ±0.14 |  | 9.57 | ac | ±0.14 |  | 3.65 | a | ±0.24 |  | 5.11 | a | ±0.34 |  | 6.95 | ab | ±0.29 |  | 2.73 | a | ±0.47 |
| Seascape |  | 6.17 | b | ±0.15 |  | 6.17 | b | ±0.12 |  | 5.09 | ab | ±0.23 |  | 5.87 | a | ±0.23 |  | 5.91 | a | ±0.21 |  | 2.82 | a | ±0.31 |
| Chandler |  | 8.15 | bc | ±0.20 |  | 8.42 | ab | ±0.14 |  | 8.75 | bcf | ±0.22 |  | 7.78 | ab | ±0.17 |  | 4.48 | a | ±0.20 |  | 2.50 | a | ±0.30 |
| Portola |  | 13.22 | ad | ±0.15 |  | 12.22 | cd | ±0.12 |  | 6.77 | abd | ±0.23 |  | 12.60 | bcd | ±0.27 |  | 13.12 | bc | ±0.25 |  | 4.36 | a | ±0.37 |
| Seascape+ |  | 8.91 | be | ±0.14 |  | 8.34 | ab | ±0.13 |  | 6.95 | beh | ±0.22 |  | 8.40 | ac | ±0.18 |  | 7.00 | a | ±0.19 |  | 2.97 | a | ±0.28 |
| Evie-2+ |  | 14.25 | a | ±0.17 |  | 17.82 |  | ±0.13 |  | 13.52 | c | ±0.21 |  | 14.73 | d | ±0.17 |  | 14.91 | c | ±0.16 |  | 13.03 |  | ±0.24 |
| Cavendish |  | 11.84 | acef | ±0.14 |  | 11.05 | ade | ±0.12 |  | 6.60 | aefg | ±0.21 |  | 6.80 | a | ±0.17 |  | 4.28 | a | ±0.21 |  | 2.65 | a | ±0.41 |
| Evie-2 |  | 9.01 | bdf | ±0.16 |  | 12.31 | ce | ±0.12 |  | 10.37 | cdgh | ±0.21 |  | 8.88 | ac | ±0.17 |  | 6.95 | a | ±0.16 |  | 3.80 | a | ±0.27 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 9b.Berry mass per plantz (LSMeans) was calculated on a weekly basis for each of 13 strawberry cultivars for Week 7 (12/17/2011) through

Week 12 (01/21/2012) (Experiment 3). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a

capillary mat system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 7** | | |  | **Week 8** | | |  | **Week 9** | | |  | **Week 10** | | |  | **Week 11** | | |  | **Week 12** | | |
| Albion |  | 0.43 | a | ±0.57 |  | 0.42 | a | ±0.53 |  |  |  | ⎼ ⎼ ⎼ |  | 0.54 | af | ±0.53 |  | 61.31 | a | ±1.58 |  | 41.19 | a | ±0.86 |
| Seascape |  | 2.68 | bc | ±0.38 |  | 5.24 | be | ±0.37 |  | 2.69 | a | ±0.42 |  | 4.55 | abd | ±0.77 |  | 1.86 | bc | ±0.85 |  | 20.74 | ab | ±1.06 |
| Chandler |  | 1.48 | ab | ±0.38 |  | 1.38 | ac | ±0.34 |  | 10.94 | b | ±0.35 |  | 0.92 | ac | ±0.48 |  | 0.85 | bd | ±2.34 |  | 4.94 | b | ±0.52 |
| Portola |  | 2.65 | bd | ±0.49 |  | 0.95 | ad | ±0.73 |  | 4.04 | ab | ±0.55 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Seascape+ |  | 5.45 | cde | ±0.31 |  | 9.50 | b | ±0.35 |  | 9.25 | b | ±0.28 |  | 5.44 | b | ±0.51 |  | 9.39 | ab | ±0.64 |  | 6.38 | b | ±0.66 |
| Evie-2+ |  | 5.69 | cd | ±0.31 |  | 6.29 | bf | ±0.31 |  | 5.93 | b | ±0.22 |  | 4.25 | be | ±0.44 |  | 7.19 | ab | ±0.50 |  | 7.01 | b | ±0.47 |
| Cavendish |  | 0.82 | ab | ±0.69 |  | 2.07 | cdef | ±0.52 |  | 10.05 | b | ±0.70 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |
| Evie-2 |  | 2.27 | be | ±0.35 |  | 1.71 | cd | ±0.33 |  | 6.16 | ab | ±0.50 |  | 0.99 | cdef | ±0.58 |  | 0.53 | cd | ±0.59 |  | 2.49 | b | ±0.74 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 9c.Berry mass per plantz (LSMeans) was calculated on a weekly basis for each of 13 strawberry cultivars for Week 13 (01/28/2012) through

Week 18 (03/10/2012) (Experiment 3). Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a

capillary mat system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 13** | | |  | **Week 14** | | |  | **Week 15** | | |  | **Week 16** | | |  | **Week 17** | | |  | **Week 18** | | |
| Albion |  | 15.81 | a | ±1.31 |  | 83.53 | a | ±1.04 |  | 53.25 | a | ±0.76 |  | 38.06 | ab | ±0.40 |  | 35.37 | a | ±0.24 |  | 32.21 | a | ±0.19 |
| Seascape |  | 5.24 | ab | ±2.33 |  | 14.33 | a | ±1.05 |  | 8.28 | a | ±1.06 |  | 15.50 | ab | ±0.54 |  | 33.45 | a | ±0.21 |  | 38.32 | a | ±0.17 |
| Chandler |  | 1.71 | bc | ±0.91 |  | 3.63 |  | ±1.32 |  | 2.32 |  | ±0.72 |  |  |  | ⎼ ⎼ ⎼ |  |  |  | ⎼ ⎼ ⎼ |  | 31.67 | a | ±0.27 |
| Portola |  | 1.01 | ac | ±2.35 |  | 31.73 | a | ±1.53 |  | 62.60 | a | ±0.81 |  | 70.28 | ab | ±0.75 |  | 58.46 | a | ±0.31 |  | 93.21 |  | ±0.19 |
| Seascape+ |  | 47.73 | ac | ±1.29 |  | 14.16 | a | ±0.84 |  | 5.19 | a | ±0.55 |  | 16.53 | a | ±0.39 |  | 29.82 | a | ±0.21 |  | 47.45 | a | ±0.19 |
| Evie-2+ |  | 9.49 | a | ±0.88 |  | 21.39 | a | ±0.60 |  | 13.77 | a | ±0.50 |  | 20.03 | ab | ±0.31 |  | 45.01 | a | ±0.22 |  | 36.86 | a | ±0.17 |
| Cavendish |  | 20.84 | ac | ±2.24 |  | 70.34 | a | ±1.45 |  | 35.74 | a | ±0.55 |  | 52.95 | b | ±0.39 |  | 32.67 | a | ±0.18 |  | 49.73 | a | ±0.17 |
| Evie-2 |  | 7.93 | ac | ±0.81 |  | 13.37 | a | ±0.65 |  | 18.81 | a | ±0.55 |  | 16.49 | ab | ±0.33 |  | 23.65 | a | ±0.21 |  | 32.32 | a | ±0.17 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 9d**.** Berry mass per plantz (LSMeans) was calculated on a weekly basis for each of 13 strawberry cultivars for Week 19 (03/28/2012) through

Week 24 (04/12/2012) (Experiment 3).Plants were grown in a double-layer polyethylene greenhouse located in Lincoln, NE and fertigated using a

capillary mat system. The interaction of Week number x Cultivar was significant for all weeks.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Berry mass(g) per plant** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Cultivar** |  | **Week 19** | | |  | **Week 20** | | |  | **Week 21** | | |  | **Week 22** | | |  | **Week 23** | | |  | **Week 24** | | |
| Albion |  | 47.18 | abd | ±0.14 |  | 36.61 | abc | ±0.16 |  | 38.47 | a | ±0.17 |  | 45.28 | ac | ±0.15 |  | 41.45 | a | ±0.17 |  | 34.16 | ac | ±0.23 |
| Seascape |  | 38.68 | ae | ±0.14 |  | 28.45 | b | ±0.17 |  | 54.00 | ab | ±0.17 |  | 36.48 | ab | ±0.15 |  | 30.82 | a | ±0.17 |  | 21.43 | ab | ±0.23 |
| Chandler |  | 43.82 | afg | ±0.17 |  | 44.81 | c | ±0.17 |  | 71.35 | bc | ±0.14 |  | 54.01 | ad | ±0.16 |  | 34.20 | a | ±0.17 |  | 27.43 | adf | ±0.15 |
| Portola |  | 70.10 | bcf | ±0.15 |  | 71.54 |  | ±0.17 |  | 116.35 | d | ±0.18 |  | 121.47 | e | ±0.15 |  | 92.03 | b | ±0.18 |  | 66.24 | e | ±0.24 |
| Seascape+ |  | 33.80 | deg | ±0.15 |  | 30.73 | abc | ±0.16 |  | 51.01 | ace | ±0.17 |  | 47.34 | af | ±0.15 |  | 39.60 | a | ±0.17 |  | 18.24 | bf | ±0.23 |
| Evie-2+ |  | 51.71 | ac | ±0.14 |  | 39.55 | abc | ±0.16 |  | 81.84 | bdef | ±0.17 |  | 102.33 | eg | ±0.15 |  | 92.58 | b | ±0.17 |  | 56.65 | ce | ±0.23 |
| Cavendish |  | 41.42 | acd | ±0.14 |  | 28.05 | ab | ±0.16 |  | 15.15 |  | ±0.17 |  | 24.01 | b | ±0.15 |  | 18.29 |  | ±0.19 |  | 8.67 |  | ±0.25 |
| Evie-2 |  | 36.85 | ad | ±0.14 |  | 37.38 | abc | ±0.16 |  | 56.71 | acf | ±0.17 |  | 72.71 | cdfg | ±0.15 |  | 80.50 | b | ±0.17 |  | 48.10 | cde | ±0.23 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 10. Initial flowering date, number of plants flowering at that time, date of first harvest and total number of strawberry plants that were grown from mid-September through April 2012 (Experiment 3) in a double-layer polyethylene greenhouse in Lincoln, NE and fertigated using a capillary mat system. Total and average berry mass per plant were not related to response typez. | | | | | | | | |
|  | | | | | | | | |
|  | | |  |  |  |  |  |  |
| Cultivar | Typez | Flowering time | 1st harvest | Total (g) | Average berry mass | Total | Average number |  |
|  |  |  |  |  | per plant (g) | number | per plant |  |
| Albion | d-n | 09/30/11 31 plants | 10/27/11 | 12,019.92 | 293.17 | 844 | 21 |  |
|  |  | 01/31/12 41Total |  |  |  |  |  |  |
| Cavendish | Jb | 09/30/11 30 plants | 10/27/11 | 8,851.37 | 221.28 | 864 | 22 |  |
|  |  | 01/31/12 40 Total |  |  |  |  |  |  |
| Chandler | Jb | 09/30/11 5 plants | 11/05/11 | 13,657.37 | 333.11 | 1,639 | 40 |  |
|  |  | 01/24/12 41 Total |  |  |  |  |  |  |
| Evie-2 | d-n | 09/30/11 26 plants | 11/01/11 | 18,453.09 | 439.36 | 1,776 | 42 |  |
|  |  | 02/14/12 42 Total |  |  |  |  |  |  |
| Evie-2 + | d-n | 09/30/11 33 plants | 10/31/11 | 25,681.53 | 570.70 | 2,595 | 58 |  |
|  |  | 01/31/12 45 Total |  |  |  |  |  |  |
| Portola | d-n | 09/30/11 27 plants | 10/31/11 | 17,011.89 | 739.65 | 984 | 43 |  |
|  |  | 01/31/12 23 Total |  |  |  |  |  |  |
| Seascape | d-n | 09/30/11 22 plants | 10/31/11 | 10,593.08 | 294.25 | 1,246 | 35 |  |
|  |  | 01/31/12 36 Total |  |  |  |  |  |  |
| Seascape + | d-n | 09/30/11 28 plants | 10/31/11 | 11,378.54 | 379.29 | 1,277 | 43 |  |
|  |  | 10/24/11 30 Total |  |  |  |  |  |  |
| z Jb = June-bearing; d-n = day-neutral | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

Table 11. Concentrations of glucose, fructose, sucrose, total sugars and a calculated sweetness index for grocery store berries and 8 strawberry cultivars which were grown in a double-layer polyethylene greenhouse in Lincoln, NE and fertigated using a capillary mat system during the spring of 2012z (Experiment 3).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cultivar | Glucose  mg g-1 | Fructose  mg g-1 | Sucrose  mg g-1 | Total Sugars  mg g-1 | Sweetness  Index |
| Albion | 2.59 ab ± 0.48 | 2.61 ab ± 0.40 | 2.68 ab ± 0.51 | 5.65 ab ± 1.71 | 12.19 abc ± 1.97 |
| Seascape | 2.52 ab ± 0.34 | 2.32 ab ± 0.29 | 2.96 a ± 0.36 | 4.93 b ± 1.71 | 11.85 abc ± 1.40 |
| Seascape + | - | - | - | 9.98 a ± 1.71 | - |
| Cavendish | 2.08 b ± 0.48 | 2.34 ab ± 0.40 | 0.89 c ± 0.51 | 7.26 ab ± 1.71 | 8.42 bc ± 1.97 |
| Evie -2 | 2.36 ab ± 0.34 | 2.18 b ± 0.29 | 2.85 a ± 0.36 | 7.03 ± 1.21 | 11.22 abc ± 1.40 |
| Evie -2+ | - | - | - | - | - |
| Chandler | 2.86 ab ± 0.48 | 2.65 ab ± 0.40 | 2.80 a ± 0.51 | 4.18 b ± 1.71 | 12.72 ab ± 1.97 |
| Portola | 1.68 b ± 0.48 | 1.53 b ± 0.40 | 1.29 bc ± 0.51 | 5.79 ab ± 1.71 | 6.94 c ± 1.97 |
| Grocery | 3.49 a ± 0.48 | 3.31 a ± 0.40 | 3.66 a ± 0.51 | 5.93 ab ± 1.71 | 16.02 a ± 1.97 |

Z Numbers in columns followed by the same letters are not significantly different at P <0.05.

Table 12. Concentrations of phenols, flavonoids and ant oxidant capacity (TEAC) for grocery store strawberries (purchased; cultivar unknown) and 8 strawberry cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE and fertigated using a capillary mat system during the spring of 2012z (Experiment 3).

|  |  |  |  |
| --- | --- | --- | --- |
| Cultivar | Phenols  mg g-1 | Flavonoids  mg g-1 | TEAC  *u*m Trolox g-1 |
| Albion | 1.23 ab ± 0.11 | 0.41 b ± 0.05 | 43.00 bc ± 5.22 |
| Seascape | 1.44 a ± 0.08 | 0.55 a ± 0.04 | 60.48 a ± 3.94 |
| Seascape + | - | - | - |
| Cavendish | 1.31 ab ± 0.11 | 0.49 ab ± 0.05 | 63.65 a ± 5.22 |
| Evie -2 | 1.24 ab ± 0.11 | 0.39 b ± 0.04 | 57.84 a ± 5.22 |
| Evie -2+ | 1.02 bc ± 0.11 | - | 41.04 c ± 5.22 |
| Chandler | 1.44 a ± 0.11 | 0.47 ab ± 0.05 | 56.60 ab ± 5.22 |
| Portola | 0.82 c ± 0.11 | 0.23 c ± 0.05 | 34.40 c ± 5.22 |
| Grocery | 1.27 ab ± 0.11 | 0.42 b ± 0.05 | 42.16 bc ± 5.22 |

zNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 13. Measurements of oBrix for 8 strawberry cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE

and fertigated using a capillary mat system during the spring of 2012z (Experiment 3). The higher the number the lower the amount of sugar a winemaker would need to add to the strawberry juice to produce a sweet wine.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Cultivar | Week 1 | | Week 2 | | Week 3 | |
|  | Fresh | Frozen | Fresh | Frozen | Fresh | Frozen |
|  |  |  | °Brix |  |  |  |
| Albion | 8.55 a ± 0.62 | 8.00 a ± 0.68 | 7.83 a ± 0.37 | 7.58 a ± 0.34 | 7.10 a ± 0.33 | 7.03 a ± 0.38 |
| Seascape | 8.31 a ± 0.57 | 9.23 a ± 0.93 | 7.42 a ± 0.43 | 7.31 ab ± 0.38 | 6.57 ab ± 0.33 | 6.52 ab ± 0.47 |
| Seascape + | 8.06 ab ± 0.80 | - | 7.37 ab ± 0.52 | 7.73 a ± 0.34 | 6.07 abc ± 0.47 | 6.10 abc ± 0.41 |
| Chandler | 7.85 ab ± 0.57 | 7.45 ab ± 0.51 | 7.05 abc ± 0.33 | 6.53 bc ± 0.34 | 6.04 bc ± 0.30 | 6.14 abc ± 0.41 |
| Evie-2+ | 7.32 abc ± 0.53 | 6.10 b ± 0.53 | 6.27 bc ± 0.30 | 6.23 c ± 0.34 | 5.58 c ± 0.27 | 5.18 bc ± 0.38 |
| Evie-2 | 6.32 bc ± 0.68 | 7.05 ab ± 0.51 | 6.15 bc ± 0.33 | 6.30 c ± 0.34 | 5.28 c ± 0.30 | 5.12 c ± 0.38 |
| Cavendish | 6.19 c ± 0.68 | 6.04 b ± 0.78 | 5.95 c ± 0.43 | 5.93 c ± 0.34 | 5.49 c ± 0.38 | 5.16 bc ± 0.63 |

ℤNumbers in columns followed by the same letters are not significantly different at P <0.05.

Table 14. Measurements of oBrixz for 8 strawberry cultivars that were grown in a double-layer polyethylene greenhouse in Lincoln, NE

and fertigated using a capillary mat system during the spring of 2012z (Experiment 3). The higher the number the lower the amount of sugar a winemaker would need to add to the strawberry juice to produce a sweet wine.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cultivar | Week 4 | | Week 5 | |
|  | Fresh | Frozen | Fresh | Frozen |
|  | °Brix |  |  |
| Albion | 7.95 a ± 0.41 | 7.10 a ± 0.34 | 8.47 a ± 0.36 | 7.17 b ± 0.32 |
| Seascape | 6.58 ab ± 0.63 | 7.14 a ± 0.37 | 8.27 a ± 0.61 | 8.52 a ± 0.43 |
| Seascape+ | 7.48 a ± 0.63 | 7.12 a ± 0.37 | - | 9.12 a ± 0.43 |
| Chandler | 6.58 ab ± 0.63 | 6.36 ab ± 0.41 | - | 6.72 bc ± 0.32 |
| Evie-2+ | 5.70 b ± 0.33 | 5.72 b ± 0.37 | 6.54 b ± 0.29 | 6.35 c ± 0.27 |
| Evie-2 | 5.66 b ± 0.35 | 5.68 b ± 0.34 | 6.54 b ± 0.29 | 6.02 c ± 0.20 |
| Cavendish | - | - | - | - |

ℤ Numbers in columns followed by the same letters are not significantly different at P <0.05.