**Supplementary Tables**

**Table S1.** The heritability of leaf and canopy growth in strawberry. *H2* is broad-sense heritability (total genetic variability) and *h*2 is narrow-sense heritability or heritability (additive genetic variability). Some of the means are presented with standard errors (s.e.). Data are from the studies indicated in the table.

|  |  |  |  |
| --- | --- | --- | --- |
| Reference | Experimental set-up | Method for assessing leaf or canopy growth | Estimates of heritability for leaf or canopy growth |
| Morrow et al. (1958) | Progeny from 40 sets of parents. | Canopy area (scale of 1 to 10) | *h*2 = 0.18 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | Plant vigour (scale of 1 to 10) | *h*2 = 0.18 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | Plant vigour (scale of 1 to 10) | *h*2 = 0.52 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | Plant vigour (scale of 1 to 10) | *h*2 = 0.35 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | No. of leaves per plant | *h*2 = 0.40 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | No. of leaves per plant | *h*2 = 0.14 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | No. of leaves per plant | *h*2 = 0.27 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | Diameter of petiole | *h*2 = 0.26 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | Diameter of petiole | *h*2 = 0.24 |
| Spangelo et al. (1971) | Sixty-four genotypes from crosses with 32 clones. | Diameter of petiole | *h*2 = 0.25 |
| Barritt (1976) | Various seedlings & their parents (crosses). | Plant vigour | *h*2 = 0.30 to 0.55 |
| Shaw & Hanson (1993) | Seedlings from 20 bi-parental crosses. | Increase in diameter of canopy in Fall | *H*2 = 0.15 ± 0.07 |
| Shaw & Hanson (1993) | Seedlings from 20 bi-parental crosses. | Increase in diameter of canopy in Spring | *H*2 = 0.14 ± 0.06 |
| Shaw & Hanson (1993) | Seedlings from 20 bi-parental crosses. | Increase in diameter of canopy in crop season | *H*2 = 0.17 ± 0.08 |
| Shaw & Hanson (1993) | Seedlings from 20 bi-parental crosses. | Diameter of canopy at end of season | *H*2 = 0.18 ± 0.08. |
| Whitaker et al. (2012) | Nineteen full-sib families from a 5 × 4 mating design, plus six bi-parental crosses & 14 control genotypes. | Plant height | *H*2 = 0.41 ± 0.04 & *h*2 = 0.32 ± 0.09 |
| Gawroński (2014) | Hybrids from crosses between two ♂ × four ♀. | Leaf dry weight | *h*2 = 0.31 |
| Gawroński (2014) | Hybrids from crosses between two ♂ × four ♀. | Leaf dry weight | *h*2 = 0.38 |
| Mishra et al. (2015) | Twenty genotypes. | Height of plant | *H*2 = 0.31 |
| Mishra et al. (2015) | Twenty genotypes. | Diameter of canopy | *H*2 = 0.33 |
| Mishra et al. (2015) | Twenty genotypes. | No. of leaves per plant | *H*2 = 0.67 |
| Mishra et al. (2015) | Twenty genotypes. | Area of single leaf | *H*2 = 0.74 |
| Antanaviciute (2016) | One-hundred & twenty F1 seedlings from Redgauntlet × Harpil. | Plant vigour (scale of 1 to 9) | *H*2 = 0.50 |
| Antanaviciute (2016) | One-hundred & twenty F1 seedlings from Redgauntlet × Harpil. | Plant height | *H*2 = 0.50 |
| Mathey et al. (2017) | Thirty-six crosses. | Plant vigour (scale of 1 to 9) | *h*2 = 0.15 |
| Zareei et al. (2023) | Twenty cultivars × 2 years. | No. of leaves per plant | *h*2 = 0.73 ± 0.07 |
| Zareei et al. (2023) | Twenty cultivars × 2 years. | Area of single leaf | *h*2 = 0.31 ± 0.03 |
|  |  |  |  |

**Table S2.** Relationship between leaf growth and temperature in strawberry. Data are from the studies indicated in the table.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reference | | Species | Range in temperature | | Data collected | Range in leaf growth | | Regression between leaf growth & temperature | *P* value from regression | *R*2 value from regression | Optimum temperature for leaf growth or other response |
| Darrow (1930) | | *F*. ×*ananassa* |  | | Leaf area |  | | Quadratic |  |  | 17.7o to 26.7oC |
| Darrow (1936) | | *F*. ×*ananassa* |  | | No. of leaves |  | | Quadratic |  |  | 20o to 26oC |
| Smeets & Kronenberg (1955) | | *F*. ×*ananassa* | 17o or 23oC | | No. of leaves |  | |  |  |  | Growth higher at 23oC |
| Arney (1953) | | *F*. ×*ananassa* | 4.4o to 23.9oC | | Interval between leaves | 8 to 26 days | | Linear |  | *r* = -0.77 | Growth increased with temperature |
| Arney (1955) | | *F*. ×*ananassa* | 4.3o to 17.6oC | | Interval between leaves | 7 to 25 days | | Linear | < 0.001 | 0.48 | Growth increased with temperature |
| Arney (1956) | | *F*. ×*ananassa* |  | | Area of single leaf | 80 to 140 cm2/leaf | | Quadratic |  |  | 7.2o to 21.1oC |
| Smeets (1956) | | *F*. ×*ananassa* | 17o to 26oC | | No. of leaves |  | | Linear |  |  | Growth increased with temperature |
| Went (1957) | | *F*. ×*ananassa* | 10o to 20oC | | Length of petiole | 6.1 to 23.6 cm | | Linear | 0.005 | 0.52 | Growth increased with temperature |
| Leshem & Koller (1965) | | *F*. ×*ananassa* | 14o or 26oC | | No. of leaves |  | |  |  |  | Similar growth at 17o or 26oC |
| Heide (1977) | | *F*. ×*ananassa* | 12o to 24oC | | Length of petiole | 8.8 to 16.8 cm | | Linear | 0.427 | 0.23 | Growth increased with temperature |
| Renquist et al. (1982) | | *F*. ×*ananassa* | 10o to 28oC | | Leaf elongation rate | 8 to 54 mm/h | | Exponential | 0.059 | 0.98 | Growth increased with temperature |
| Renquist et al. (1982) | | *F*. ×*ananassa* | 10o to 28oC | | Leaf elongation rate | 6 to 23 mm/h | | Logistic |  |  | Growth increased with temperature |
| Abdelrahman (1984) | | *F*. ×*ananassa* | 15o to 35oC | | Length of petiole | 4.4 to 9.4 cm | | Quadratic | 0.041 | 0.54 | Higher optimum of 28.0oC |
| Abdelrahman (1984) | | *F*. ×*ananassa* | 15o to 35oC | | Area of single leaf | 31 to 91 cm2/leaf | | Linear | < 0.001 | 0.82 | Growth decreased with temperature |
| Abdelrahman (1984) | | *F*. ×*ananassa* | 15o to 35oC | | Dry weight of single leaf | 0.22 to 0.75 g/leaf | | Linear | 0.002 | 0.74 | Growth decreased with temperature |
| Abdelrahman (1984) | | *F*. ×*ananassa* | 15o to 35oC | | No. of leaves | 4 to 18 leaves/plant | | Quadratic | 0.183 | 0.24 | 19.6o to 29.3oC |
| Rariden & Shaw (1993) | | *F*. ×*ananassa* | 11o to 17oC | | No. of leaves | 2.6 to 3.2 leaves/plant | | Linear |  |  | Similar growth from 11o to 17oC |
| Rariden & Shaw (1993) | | *F*. ×*ananassa* | 11o to 17oC | | Leaf dry weight | 2.7 to 3.8 g/plant | | Linear | 0.281 | 0.63 | Growth increased with temperature |
| Shaw & Hansen (1993) | | *F*. ×*ananassa* | 12.5o to 14.0oC | | No. of leaves | 4.5 to 5.7 leaves/plant | | Linear | 0.016 | 0.98 | Growth increased with temperature |
| Shaw & Hansen (1993) | | *F*. ×*ananassa* | 12.5o to 14.0oC | | Leaf area | 444 to 547 cm2/plant | | Linear | 0.023 | 0.98 | Growth increased with temperature |
| Le Mière et al. (1998) | | *F*. ×*ananassa* | 13o to 28oC | | Leaf area | 485 to1909 cm2/plant | | Linear | < 0.001 | 0.58 | Growth decreased with temperature |
| Wang & Camp (2000) | | *F*. ×*ananassa* | 15o to 26oC | | Leaf dry weight | 6.7 to 10.2 g/plant | | Quadratic | 0.002 | 0.88 | 17.1o to 23.5oC |
| Wagstaffe & Battey (2004) | | *F*. ×*ananassa* | 15o to 27oC | | Leaf area | 1730 to 5189 cm2/plant | | Linear | 0.066 | 0.81 | Growth decreased with temperature |
| Kadir et al. (2006) | | *F*. ×*ananassa* | 17.5o to 37.5oC | | No. of leaves | 28 to 37 leaves/plant | | Quadratic |  |  | 18.6o to 30.6oC |
| Kadir et al. (2006) | | *F*. ×*ananassa* | 17.5o to 37.5oC | | Leaf area | 209 to 765 cm2/plant | | Quadratic |  |  | 20.6o to 30.1oC |
| Kadir et al. (2006) | | *F*. ×*ananassa* | 17.5o to 37.5oC | | Leaf dry weight | 6.6 to 10.0 g/plant | | Quadratic |  |  | 18.8o to 33.5oC |
| Harbut et al. (2010) | | Several *Fragaria* | 12.5o to 27.5oC | | Leaf dry weight | 2.8 to 8.9 g/plant | | Linear | 0.017 | 0.52 | Growth decreased with temperature |
| Josuttis et al. (2011) | | *F*. ×*ananassa* | 13o or 19oC | | Area of single leaf | 44 to 47 cm2/leaf | |  |  |  | Similar growth at 13o to 19oC |
| Josuttis et al. (2011) | | *F*. ×*ananassa* | 13o or 19oC | | Leaf area | 1,378 to 2,481 cm2/plant | |  |  |  | Growth higher at 13oC |
| Sonsteby et al. (2016) | | *F*. ×*ananassa* | 12o to 24oC | | Leaf area | 181 to 555 cm2/plant | | Linear | 0.094 | 0.005 | Growth increased with temperature |
| Sonsteby et al. (2016) | | *F*. ×*ananassa* | 12o to 24oC | | Leaf area | 229 to 682 cm2/plant | | Linear | 0.960 | 0.99 | Growth increased with temperature |
| Bedry (2017) | | *F. vesca* | 8o to 20oC | | No. of leaves | 8 to 38 leaves/plant | | Linear | 0.019 | 0.83 | Growth increased with temperature |
| Bedry (2017) | | *F. vesca* | 8o to 20oC | | No. of leaves | 8 to 25 leaves/plant | | Linear | 0.038 | 0.75 | Growth increased with temperature |
| Bedry (2017) | | *F. vesca* | 8o to 20oC | | No. of leaves | 9 to 36 leaves/plant | | Linear | < 0.001 | 0.99 | Growth increased with temperature |
| Butare (2020) | | *F*. ×*ananassa* | 20o to 30oC | | No. of leaves | 5.6 to 8.9 leaves/plant | | Linear | 0.188 | 0.83 | Growth increased with temperature |
| Sim et al. (2020) | | *F*. ×*ananassa* | 11.8o to 24.7oC | | No. of leaves | 3 to 10 leaves/plant | | Linear |  | *r* = -0.47 | Growth decreased with temperature |
| Sim et al. (2020) | | *F*. ×*ananassa* | 11.8o to 24.7oC | | Length of leaf | 8.3 to 10.9 cm | | Linear |  | *r* = -0.89 | Growth decreased with temperature |
| Sim et al. (2020) | | *F*. ×*ananassa* | 11.8o to 24.7oC | | Width of leaf | 6.2 to 8.5 cm | | Linear |  | *r* = -0.91 | Growth decreased with temperature |
| Xu et al. (2020) | | *F*. ×*ananassa* | 5o to 35oC | | No. of leaves |  | | Quadratic |  |  | 20o to 25oC |
| Xu et al. (2021) | | F. ×*ananassa* | 27o to 36oC | | Leaf area index | 0.67 to 1.05 | | Linear | 0.041 | 0.88 | Growth decreased with temperature |
| Hopf et al. (2022) | | Several *Fragaria* |  | | No. of leaves |  | | Quadratic |  |  | 20o to 24oC |
| Rivero et al. (2022a) | | *F*. ×*ananassa* | 9o to 27oC | | No. of leaves | 31 to 58 leaves/plant | | Linear | 0.089 | 0.19 | Growth increased with temperature |
| Rivero et al. (2022a) | | *F*. ×*ananassa* | 9o to 27oC | | No. of leaves | 24 to 52 leaves/plant | | Linear | 0.222 | 0.06 | Growth increased with temperature |
| Rivero et al. (2022b) | | *F*. ×*ananassa* | 12o to 26oC | | Leaf area | 132 to 529 cm2/plant | | Linear | 0.215 | 0.78 | Growth increased with temperature |
| Rivero et al. (2022b) | | *F*. ×*ananassa* | 12o to 26oC | | Leaf area | 245 to 611 cm2/plant | | Linear | 0.153 | 0.89 | Growth increased with temperature |
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