**Manuscript Figures and Tables**

**Table 1. A)** Analysis of variance test statistics from the region-based model, used to analyze genetic differences based on quantitative traits of *Q. rubra* populations from two regions (coastal and noncoastal) **B)** Analysis of variance test statistics from the environmental-based model, used to analyze genetic differences based on quantitative traits of *Q. rubra* populations using temperature and precipitation factors as predictors.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A. Regional Model** | | **Region** | |  | **Population (Reg.)** | |  | **Seed Mass** | |  | **Radicle Presence** | |  | **Block** | |
|  | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** |
| Seed Mass | 1, 1423 | 1.87 | 0.17 | 6, 1423 | 15.87 | **<0.0001** | - | - | - | 1, 1424 | 20.56 | **<0.0001** | - | - | - |
| Radicle Presence | 1, 1423 | 46.19 | **<0.0001** | 6, 1423 | 168.34 | **<0.0001** | 1, 1423 | 23.33 | **<0.0001** | - | - | - | - | - | - |
| Germination | 1, 1423 | 1.46 | 0.23 | 6, 1423 | 81.19 | **<0.0001** | 1, 1423 | 12.12 | **<0.0001** | 1, 1424 | 292.66 | **<0.0001** | 3 | 43.87 | **<0.0001** |
| Germination date | 1, 1107 | 0.08 | 0.76 | 6, 1107 | 2.67 | **0.01** | 1, 1107 | 6.47 | **0.01** | 1, 1107 | 113.8 | **<0.0001** | 3 | 19.52 | **<0.0001** |
| Early growth rate | 1, 712 | 7.87 | **0.005** | 6, 712 | 5.36 | **<0.0001** | 1, 712 | 4.02 | **0.04** | 1, 712 | 3.8 | **0.05** | 3 | 8.23 | **<0.0001** |
| Late growth rate | 1, 997 | 0.01 | 0.92 | 6, 997 | 0.67 | 0.67 | 1, 997 | 3.92 | **0.04** | 1, 997 | 0.26 | 0.61 | 3 | 24.97 | **<0.0001** |
| Stem Height | 1, 1089 | 17.15 | **<0.0001** | 6, 1089 | 5.49 | **<0.0001** | 1, 1089 | 48.22 | **<0.0001** | 1, 1089 | 2.91 | 0.09 | 3 | 12.47 | **<0.0001** |
| Stem Diameter | 1, 1091 | 3.10 | 0.08 | 6, 1091 | 5.08 | **<0.0001** | 1, 1091 | 215.31 | **<0.0001** | 1, 1091 | 21.74 | **<0.0001** | 3 | 127.35 | **<0.0001** |
| Leaf Number | 1, 1078 | 1.52 | 0.22 | 6, 1078 | 3.62 | **0.001** | 1, 1078 | 14.91 | **0.001** | 1, 1078 | 0.23 | 0.63 | 3 | 4.88 | **0.002** |
| SLA (log) | 1, 1011 | 0..70 | 0.4 | 6, 1011 | 6.51 | **<0.0001** | 1, 1011 | 26.25 | **<0.0001** | 1, 1011 | 10.86 | **0.001** | 3 | 10.6 | **<0.0001** |
| Survival | 1, 1423 | 4.75 | **0.03** | 6, 1423 | 73.22 | **<0.0001** | 1, 1423 | 1.41 | 0.23 | 1, 1423 | 221.17 | **<0.0001** | 3 | 40.41 | **<0.0001** |

**Table 1. A)** Analysis of variance test statistics from the region-based model, used to analyze genetic differences based on quantitative traits of *Q. rubra* populations from two regions (coastal and noncoastal) **B)** Analysis of variance test statistics from the environmental-based model, used to analyze genetic differences based on quantitative traits of *Q. rubra* populations using temperature and precipitation factors as predictors.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **B. Climate Model** |  | **Mean Temp** | |  | **Min Temp** | |  | **Precip of Driest Month** | | **Seed Mass** | |  |  | **Radicle Presence** |  |  | **Block** |  |
|  | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** | ***df*** | ***F / χ2*** | ***P*** |
| Seed Mass | 1, 1427 | 20.11 | **<0.0001** | 1, 1427 | 7.78 | **0.0053** | 1, 1427 | 2.75 | 0.097 | - | - | - | 1, 1427 | 20.18 | **<0.0001** | - | - | - |
| Radicle Presence | 1, 1427 | 192.6 | **<0.0001** | 1, 1427 | 0.0326 | 0.86 | 1, 1427 | 40.648 | **<0.0001** | 1, 1427 | 22.76 | **<0.0001** | - | - | - | - | - | - |
| Germination | 1, 1427 | 14.64 | **0.0001** | 1, 1427 | 14.64 | **0.0001** | 1, 1427 | 4.95 | **0.026** | 1, 1427 | 5.99 | **0.014** | 1, 1427 | 269.15 | **<0.0001** | 3 | 49.48 | **<0.0001** |
| Germination date | 1, 1111 | 5.35 | **0.021** | 1, 1111 | 2.19 | 0.13 | 1, 1111 | 0.33 | 0.56 | 1, 1427 | 7.04 | **0.008** | 1, 1111 | 115.85 | **<0.0001** | 3 | 19.37 | **<0.0001** |
| SLA | 1, 1015 | 13.02 | **0.0003** | 1, 1015 | 11.15 | **0.0009** | 1, 1015 | 9.48 | **0.0021** | 1, 1015 | 23.61 | **<0.0001** | 1, 1015 | 6.18 | **0.013** | 3 | 10.06 | **<0.0001** |
| Early growth rate | 1, 716 | 48.92 | **<0.0001** | 1, 716 | 1.36 | 0.24 | 1, 716 | 4.04 | 0.044 | 1, 716 | 2.81 | 0.094 | 1, 716 | 5.26 | **0.022** | 3 | 7.72 | **<0.0001** |
| Late growth rate | 1, 1001 | 0.089 | 0.75 | 1, 1001 | 0.0014 | 0.97 | 1, 1001 | 0.76 | 0.38 | 1, 1001 | 4.19 | **0.041** | 1, 1001 | 0.19 | 0.65 | 3 | 24.87 | **<0.0001** |
| Stem Height | 1, 1081 | 47.26 | **<0.0001** | 1, 1081 | 25.65 | **<0.0001** | 1, 1081 | 4.31 | **0.038** | 1, 1081 | 45.65 | **<0.0001** | 1, 1081 | 1.64 | 0.19 | 3 | 11.71 | **<0.0001** |
| Leaf Number | 1, 1082 | 16.77 | **<0.0001** | 1, 1082 | 0.47 | 0.49 | 1, 1082 | 0.13 | 0.71 | 1, 1082 | 17.71 | **<0.0001** | 1, 1082 | 0.24 | 0.62 | 3 | 4.91 | **0.0021** |
| Stem Diameter | 1, 1095 | 2.85 | 0.091 | 1, 1095 | 15.8 | **<0.0001** | 1, 1095 | 6.59 | **0.01** | 1, 1095 | 219.32 | **<0.0001** | 1, 1095 | 18.13 | **<0.0001** | 3 | 124.53 | **<0.0001** |
| Survival | 1, 1427 | 25.57 | **<0.0001** | 1, 1427 | 14.56 | **0.0001** | 1, 1427 | 4.26 | **0.038** | 1, 1427 | 0.14 | 0.7 | 1, 1427 | 200.39 | **<0.0001** | 3 | 42.49 | **<0.0001** |