Table S1 PS II fluorescence parameters of male and female *S. thumbergii* macroalgae under different UV-B radiation intensities

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Fv/Fm | Y(Ⅱ) | Y(NPQ) | Y(NO) |
|  |  | male | female | male thanfemale(*p* values) | male | female | male thanfemale(*p* values) | male | female | male thanfemale(*p* values) | male | female | male thanfemale(*p* values) |
|  | Control group | 0.6618±0.0025 | 0.6670±0.0051 | -0.78%(0.067) | 0.4993±0.0035 | 0.4803±0.0061 | 3.97%\*(0.016) | 0.2215±0.0030 | 0.2221±0.0028 | -0.26%(0.883) | 0.3580±0.0030 | 0.3646±0.0055 | -1.81%(0.182) |
| Day 0 | Low UV-B | 0.6601±0.0035 | 0.6682±0.0020 | -1.03%(0.127) | 0.4963±0.0020 | 0.4776±0.0037 | 3.93%\*(0.012) | 0.2272±0.0045 | 0.2232±0.0056 | 1.79%(0.394) | 0.3521±0.0065 | 0.3662±0.0050 | -3.86%(0.122) |
|  | High UV-B | 0.6612±0.0056 | 0.6684±0.0047 | -3.36%(0.06) | 0.4986±0.0037 | 0.4765±0.0037 | 4.63%\*(0.002) | 0.2246±0.0030 | 0.2214±0.0035 | 1.44%(0.283) | 0.3562±0.0070 | 0.3651±0.0065 | -2.50%(0.123) |
|  | Control group | 0.6597±0.0051 | 0.6683±0.0051 | -1.30%(0.056) | 0.4807±0.0047 | 0.4717±0.0058 | 1.91%(0.107) | 0.2207±0.0035 | 0.2176±0.0055 | 1.38%(0.471) | 0.3567±0.0043 | 0.3657±0.0045 | -2.64%(0.082) |
| Day 1 | Low UV-B | 0.6650±0.0030 | 0.6623±0.0041 | 0.40%(0.478) | 0.4973±0.0035 | 0.4697±0.007 | 5.89%\*(0.001) | 0.1933±0.0035 | 0.2087±0.0043 | -7.50%\*(0.005) | 0.3663±0.0050 | 0.3707±0.0015 | -1.17%(0.227) |
|  | High UV-B | 0.5897±0.0040 | 0.5697±0.0057 | 3.51%(0.049) \* | 0.4057±0.0041 | 0.3977±0.0041 | 2.01%(0.078) | 0.1722±0.0043 | 0.1648±0.0040 | 4.24%(0.110) | 0.4377±0.0061 | 0.4451±0.0072 | -1.65%(0.226) |
|  | Control group | 0.6527±0.0047 | 0.6529±0.0032 | -0.04%(0.947) | 0.4683±0.0030 | 0.4292±0.0020 | 9.09%\*(0.001) | 0.1983±0.0055 | 0.1894±0.0026 | 4.94%(0.057) | 0.3747±0.0030 | 0.3753±0.0020 | -0.09%(0.882) |
| Day 3 | Low UV-B | 0.6017±0.0085 | 0.5813±0.0043 | 3.51%\* (0.027) | 0.4258±0.0043 | 0.3966±0.0060 | 7.30%\*(0.003) | 0.1713±0.0062 | 0.1645±0.0020 | 4.27%(0.138) | 0.4007±0.0055 | 0.4474±0.0020 | 10.36%\*(0.002) |
|  | High UV-B | 0.5207±0.0075 | 0.4751±0.0057 | 9.58%\*(0.001) | 0.3843±0.0047 | 0.3633±0.0056 | 5.78%\*(0.008) | 0.1519±0.0050 | 0.1488±0.0036 | 2.62%(0.363) | 0.4513±0.0062 | 0.5023±0.0011 | 10.22%\*(0.015) |
|  | Control group | 0.6327±0.0040 | 0.6449±0.0040 | -1.90%(0.122) | 0.4316±0.0067 | 0.4113±0.0135 | 4.95%\*(0.039) | 0.1617±0.0050 | 0.1543±0.0030 | 4.98%(0.086) | 0.3963±0.0025 | 0.3787±0.0085 | 4.66%(0.053) |
| Day 5 | Low UV-B | 0.5783±0.0050 | 0.5473±0.0055 | 5.66%\*(0.002) | 0.4076±0.0023 | 0.3675±0.0075 | 10.91%\*(0.002) | 0.1529±0.0050 | 0.1433±0.0077 | 6.66%(0.079) | 0.4317±0.0030 | 0.4842±0.0062 | 10.81%\*(0.005) |
|  | High UV-B | 0.4773±0.0060 | 0.4368±0.0051 | 9.28%\*(0.001) | 0.3589±0.0045 | 0.3291±0.0045 | 9.05%\*(0.005) | 0.1367±0.0040 | 0.1243±0.0056 | 9.93%\*(0.03) | 0.4753±0.0032 | 0.5412±0.0040 | 12.17%\*(0.005) |

Significant differences (*p* < 0.05) between males and females are indicated by an asterisk (\*). Negative value means female values higher than males.