# **Appendix**

# Actual Values

Table 100.1. Descriptive statistics for weight (g) of all tanks, in terms of mean, standard deviation and variance, of *P. angulosus* urchins at the start of the experiment.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Mean (g) | St. dev (g) | Var (g^2) | n |
| 1 | formulated | warm | 17.62 | 7.1 | 50.3714 | 19 |
| 2 | mixed | warm | 19.28 | 6.46 | 41.764 | 19 |
| 3 | formulated | ambient | 19.32 | 7.23 | 52.2206 | 19 |
| 4 | mixed | ambient | 14.68 | 6 | 35.9936 | 19 |
| 5 | mixed | warm | 17.06 | 6.78 | 45.9281 | 19 |
| 6 | ulva | warm | 17.11 | 5.47 | 29.9299 | 19 |
| 7 | kelp | ambient | 13.89 | 7.97 | 63.5988 | 19 |
| 8 | ulva | ambient | 18.26 | 6.94 | 48.1692 | 19 |
| 9 | ulva | warm | 16.43 | 7.82 | 61.1243 | 19 |
| 10 | kelp | warm | 14.72 | 5.69 | 32.3618 | 19 |
| 11 | kelp | ambient | 18.29 | 6.91 | 47.7743 | 19 |
| 12 | formulated | ambient | 14.97 | 6.4 | 40.942 | 19 |
| 13 | formulated | warm | 22.19 | 6.73 | 45.261 | 19 |
| 14 | mixed | warm | 14.99 | 8.62 | 74.2894 | 19 |
| 15 | ulva | ambient | 13.71 | 8.17 | 66.7072 | 19 |
| 16 | mixed | ambient | 13.64 | 6.63 | 43.9515 | 19 |
| 17 | ulva | warm | 15.85 | 5.82 | 33.8737 | 19 |
| 18 | kelp | warm | 14.75 | 6.88 | 47.3026 | 19 |
| 19 | formulated | ambient | 16.08 | 7.08 | 50.1406 | 19 |
| 20 | kelp | ambient | 19.73 | 9.23 | 85.2745 | 19 |
| 21 | kelp | warm | 17.16 | 5.63 | 31.6559 | 19 |
| 22 | ulva | warm | 18.78 | 8.29 | 68.7347 | 19 |
| 23 | mixed | ambient | 16.76 | 6.5 | 42.2491 | 19 |
| 24 | formulated | ambient | 16.62 | 5.84 | 34.0618 | 19 |
| 25 | mixed | warm | 16.28 | 8.16 | 66.5295 | 19 |
| 26 | formulated | warm | 17.44 | 5.79 | 33.4891 | 19 |
| 27 | ulva | ambient | 17.21 | 5.18 | 26.8821 | 19 |
| 28 | ulva | ambient | 17.83 | 7.92 | 62.7489 | 19 |
| 29 | kelp | warm | 16.18 | 6.89 | 47.5251 | 19 |
| 30 | formulated | warm | 18.45 | 5.87 | 34.5115 | 19 |
| 31 | mixed | ambient | 14.94 | 5.2 | 27.0348 | 19 |
| 32 | kelp | ambient | 19.39 | 8.27 | 68.4083 | 19 |

Table 100.1. Descriptive statistics for weight (g) of all tanks, in terms of mean, standard deviation and variance, of *P. angulosus* urchins at the after 4 weeks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Mean (g) | St. dev (g) | Var (g^2) | n |
| 1 | formulated | warm | 18.88 | 7.26 | 52.6949 | 19 |
| 2 | mixed | warm | 19.5 | 6.96 | 48.4683 | 19 |
| 3 | formulated | ambient | 20.43 | 7.5 | 56.3237 | 19 |
| 4 | mixed | ambient | 15.05 | 5.92 | 35.0205 | 19 |
| 5 | mixed | warm | 17.64 | 6.53 | 42.6362 | 19 |
| 6 | ulva | warm | 18.05 | 5.63 | 31.7518 | 19 |
| 7 | kelp | ambient | 13.98 | 8.12 | 65.911 | 19 |
| 8 | ulva | ambient | 18.62 | 6.96 | 48.4766 | 19 |
| 9 | ulva | warm | 16.79 | 7.98 | 63.7253 | 19 |
| 10 | kelp | warm | 14.15 | 5.54 | 30.7244 | 19 |
| 11 | kelp | ambient | 17.86 | 7.08 | 50.1473 | 19 |
| 12 | formulated | ambient | 16.41 | 7.1 | 50.4783 | 19 |
| 13 | formulated | warm | 23.14 | 6.72 | 45.1203 | 19 |
| 14 | mixed | warm | 15.48 | 8.61 | 74.198 | 19 |
| 15 | ulva | ambient | 13.9 | 8.31 | 69.116 | 19 |
| 16 | mixed | ambient | 14.25 | 6.93 | 48.0077 | 19 |
| 17 | ulva | warm | 16.39 | 5.8 | 33.6618 | 19 |
| 18 | kelp | warm | 13.93 | 6.96 | 48.4531 | 20 |
| 19 | formulated | ambient | 17.24 | 7.83 | 61.3526 | 19 |
| 20 | kelp | ambient | 19.75 | 8.99 | 80.7613 | 19 |
| 21 | kelp | warm | 17.13 | 5.71 | 32.6232 | 19 |
| 22 | ulva | warm | 19.86 | 7.76 | 60.258 | 19 |
| 23 | mixed | ambient | 17.08 | 6.89 | 47.4139 | 19 |
| 24 | formulated | ambient | 17.67 | 6.16 | 37.928 | 19 |
| 25 | mixed | warm | 16.83 | 8.27 | 68.32 | 19 |
| 26 | formulated | warm | 18.66 | 6.01 | 36.1585 | 19 |
| 27 | ulva | ambient | 17.24 | 6.33 | 40.0348 | 19 |
| 28 | ulva | ambient | 18.26 | 8.04 | 64.5841 | 19 |
| 29 | kelp | warm | 15.85 | 7.04 | 49.5105 | 19 |
| 30 | formulated | warm | 19.49 | 6.28 | 39.4706 | 19 |
| 31 | mixed | ambient | 15.8 | 5.51 | 30.398 | 19 |
| 32 | kelp | ambient | 19.02 | 8.21 | 67.4632 | 19 |

Table 100.1. Descriptive statistics for weight (g) of all tanks, in terms of mean, standard deviation and variance, of *P. angulosus* urchins at the after 8 weeks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Mean (g) | St. dev (g) | Var (g^2) | n |
| 1 | formulated | warm | 19.99 | 7.41 | 54.867 | 19 |
| 2 | mixed | warm | 20.47 | 6.89 | 47.4198 | 19 |
| 3 | formulated | ambient | 22.72 | 8.32 | 69.2303 | 16 |
| 4 | mixed | ambient | 16.59 | 6.01 | 36.1658 | 19 |
| 5 | mixed | warm | 18.87 | 6.23 | 38.8186 | 19 |
| 6 | ulva | warm | 19.3 | 5.38 | 28.9925 | 19 |
| 7 | kelp | ambient | 13.88 | 8.18 | 66.8324 | 19 |
| 8 | ulva | ambient | 19.68 | 7.56 | 57.108 | 16 |
| 9 | ulva | warm | 17.37 | 7.87 | 61.9862 | 19 |
| 10 | kelp | warm | 14.94 | 5.36 | 28.6934 | 12 |
| 11 | kelp | ambient | 17.97 | 7.99 | 63.7908 | 12 |
| 12 | formulated | ambient | 18.27 | 7.11 | 50.615 | 19 |
| 13 | formulated | warm | 23.97 | 6.55 | 42.952 | 19 |
| 14 | mixed | warm | 16.86 | 8.62 | 74.3562 | 19 |
| 15 | ulva | ambient | 15.18 | 8.18 | 66.9169 | 16 |
| 16 | mixed | ambient | 15.97 | 7.14 | 51.034 | 17 |
| 17 | ulva | warm | 17.15 | 5.56 | 30.9516 | 19 |
| 18 | kelp | warm | 15.25 | 7.71 | 59.4627 | 15 |
| 19 | formulated | ambient | 19.17 | 8.13 | 66.1694 | 18 |
| 20 | kelp | ambient | 21.57 | 8.6 | 73.9394 | 14 |
| 21 | kelp | warm | 16.74 | 5.79 | 33.4755 | 19 |
| 22 | ulva | warm | 20.67 | 7.63 | 58.2224 | 18 |
| 23 | mixed | ambient | 18.5 | 7.34 | 53.8874 | 19 |
| 24 | formulated | ambient | 19.75 | 6.7 | 44.8302 | 17 |
| 25 | mixed | warm | 18.6 | 8.52 | 72.6662 | 19 |
| 26 | formulated | warm | 20.1 | 6.08 | 36.9106 | 19 |
| 27 | ulva | ambient | 19.51 | 5.45 | 29.7481 | 16 |
| 28 | ulva | ambient | 19.21 | 8.21 | 67.4352 | 19 |
| 29 | kelp | warm | 17.25 | 7.4 | 54.8009 | 13 |
| 30 | formulated | warm | 21.51 | 5.87 | 34.4628 | 18 |
| 31 | mixed | ambient | 17.04 | 5.8 | 33.5914 | 19 |
| 32 | kelp | ambient | 20.79 | 6.49 | 42.1843 | 13 |

Table 100.1. Descriptive statistics for weight (g) of all tanks, in terms of mean, standard deviation and variance, of *P. angulosus* urchins at the after 13 weeks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Mean (g) | St. dev (g) | Var (g^2) | n |
| 1 | formulated | warm | 20.31 | 7.27 | 52.9097 | 18 |
| 2 | mixed | warm | 21.58 | 6.96 | 48.4486 | 17 |
| 3 | formulated | ambient | 24.17 | 8.44 | 71.2403 | 15 |
| 4 | mixed | ambient | 18.63 | 6.13 | 37.5615 | 18 |
| 5 | mixed | warm | 20.74 | 6.27 | 39.3043 | 18 |
| 6 | ulva | warm | 20.25 | 5.78 | 33.3526 | 17 |
| 8 | ulva | ambient | 21.21 | 7.65 | 58.5474 | 14 |
| 9 | ulva | warm | 18.46 | 7.79 | 60.7417 | 19 |
| 12 | formulated | ambient | 19.56 | 7.34 | 53.9176 | 18 |
| 13 | formulated | warm | 24.29 | 6.43 | 41.294 | 18 |
| 14 | mixed | warm | 17.9 | 8.29 | 68.7212 | 18 |
| 15 | ulva | ambient | 16.74 | 8.14 | 66.1864 | 14 |
| 16 | mixed | ambient | 17.36 | 8.09 | 65.4172 | 13 |
| 17 | ulva | warm | 17.93 | 5.47 | 29.9158 | 18 |
| 19 | formulated | ambient | 20.66 | 8.6 | 73.9368 | 16 |
| 22 | ulva | warm | 21.31 | 7.76 | 60.2145 | 17 |
| 23 | mixed | ambient | 20.53 | 8.22 | 67.5477 | 18 |
| 24 | formulated | ambient | 20.85 | 6.96 | 48.4965 | 15 |
| 25 | mixed | warm | 19.97 | 8.66 | 74.9715 | 18 |
| 26 | formulated | warm | 20.94 | 6.09 | 37.0816 | 18 |
| 27 | ulva | ambient | 21.41 | 5.01 | 25.057 | 13 |
| 28 | ulva | ambient | 20.38 | 8.14 | 66.33 | 19 |
| 30 | formulated | warm | 22.6 | 5.99 | 35.8858 | 17 |
| 31 | mixed | ambient | 18.51 | 6.18 | 38.24 | 18 |

Table 100.1. Descriptive statistics for weight (g) of all tanks, in terms of mean, standard deviation and variance, of *P. angulosus* urchins at the after 18 weeks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Mean (g) | St. dev (g) | Var (g^2) | n |
| 1 | formulated | warm | 20.86 | 7.17 | 51.3513 | 18 |
| 2 | mixed | warm | 22.55 | 6.89 | 47.4575 | 16 |
| 3 | formulated | ambient | 23.53 | 8.24 | 67.8439 | 15 |
| 4 | mixed | ambient | 21.52 | 7.5 | 56.2624 | 18 |
| 5 | mixed | warm | 22.25 | 5.98 | 35.7588 | 18 |
| 6 | ulva | warm | 22.37 | 6.82 | 46.5223 | 17 |
| 8 | ulva | ambient | 22.42 | 7.84 | 61.4795 | 13 |
| 9 | ulva | warm | 19.07 | 7.61 | 57.8832 | 19 |
| 12 | formulated | ambient | 20.38 | 7.11 | 50.5622 | 18 |
| 13 | formulated | warm | 24.49 | 6.32 | 39.9653 | 18 |
| 14 | mixed | warm | 19.62 | 8.2 | 67.1733 | 18 |
| 15 | ulva | ambient | 18.51 | 7.76 | 60.2014 | 12 |
| 16 | mixed | ambient | 18.81 | 8.37 | 70.0828 | 12 |
| 17 | ulva | warm | 19.23 | 5.2 | 27.0423 | 18 |
| 19 | formulated | ambient | 22.6 | 8.48 | 71.8704 | 13 |
| 22 | ulva | warm | 21.73 | 7.43 | 55.1716 | 16 |
| 23 | mixed | ambient | 22.94 | 7.92 | 62.655 | 17 |
| 24 | formulated | ambient | 21.98 | 7.4 | 54.727 | 15 |
| 25 | mixed | warm | 21.31 | 8.42 | 70.9714 | 18 |
| 26 | formulated | warm | 19.57 | 5.89 | 34.7206 | 18 |
| 27 | ulva | ambient | 22.35 | 5.44 | 29.6476 | 13 |
| 28 | ulva | ambient | 21.3 | 8 | 63.9325 | 18 |
| 30 | formulated | warm | 22.64 | 5.74 | 32.9467 | 17 |
| 31 | mixed | ambient | 19.62 | 6.86 | 47.1272 | 18 |

Table 100.1. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the formulated diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 16.75 | 6.72 | 45.1599 | 76 |
| 1 | 17.94 | 7.19 | 51.7618 | 76 |
| 2 | 19.88 | 7.59 | 57.6719 | 70 |
| 3 | 21.22 | 7.86 | 61.7377 | 64 |
| 4 | 22.02 | 7.66 | 58.7519 | 61 |

Table 100.1. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the formulated diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.29 | 0.73 | 0.5262 | 76 |
| 1 | 3.54 | 0.75 | 0.5594 | 76 |
| 2 | 3.61 | 0.74 | 0.5495 | 70 |
| 3 | 3.82 | 0.73 | 0.5304 | 64 |
| 4 | 3.78 | 0.68 | 0.469 | 61 |
|  |  |  |  |  |

Table 100.2. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the formulated diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 18.92 | 6.56 | 43.0247 | 76 |
| 1 | 20.04 | 6.70 | 44.956 | 76 |
| 2 | 21.39 | 6.58 | 43.3293 | 75 |
| 3 | 22.03 | 6.52 | 42.5377 | 71 |
| 4 | 21.88 | 6.45 | 41.6619 | 71 |
|  |  |  |  |  |

Table 100.2. Descriptive statistics for size (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the formulated diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.56 | 0.63 | 0.3996 | 76 |
| 1 | 3.55 | 0.61 | 0.3728 | 76 |
| 2 | 3.7 | 0.67 | 0.4507 | 75 |
| 3 | 3.83 | 0.64 | 0.4074 | 71 |
| 4 | 3.77 | 0.6 | 0.3653 | 71 |

Table 100.3. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the mixed diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 15.01 | 6.09 | 37.0957 | 76 |
| 1 | 15.54 | 6.30 | 39.7021 | 76 |
| 2 | 17.05 | 6.52 | 42.5457 | 74 |
| 3 | 18.86 | 7.08 | 50.0708 | 67 |
| 4 | 20.86 | 7.59 | 57.659 | 65 |

Table 100.3. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the mixed diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.25 | 0.74 | 0.5511 | 76 |
| 1 | 3.36 | 0.74 | 0.5421 | 76 |
| 2 | 3.34 | 0.68 | 0.4585 | 74 |
| 3 | 3.72 | 0.86 | 0.7352 | 67 |
| 4 | 3.67 | 0.72 | 0.5237 | 65 |
|  |  |  |  |  |

Table 100.4. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the mixed diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 16.9 | 7.57 | 57.3 | 76 |
| 1 | 17.36 | 7.63 | 58.2207 | 76 |
| 2 | 18.7 | 7.59 | 57.6426 | 76 |
| 3 | 20.03 | 7.58 | 57.3896 | 71 |
| 4 | 21.4 | 7.38 | 54.4874 | 70 |

Table 100.4. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the mixed diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.38 | 0.78 | 0.6124 | 76 |
| 1 | 3.29 | 0.75 | 0.5582 | 76 |
| 2 | 3.44 | 0.73 | 0.5278 | 76 |
| 3 | 3.79 | 0.77 | 0.5891 | 71 |
| 4 | 3.77 | 0.66 | 0.4395 | 71 |
|  |  |  |  |  |

Table 100.5. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the ulva diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 17.04 | 6.91 | 47.7067 | 76 |
| 1 | 17.77 | 6.88 | 47.316 | 76 |
| 2 | 18.59 | 6.72 | 45.1395 | 75 |
| 3 | 19.44 | 6.79 | 46.1328 | 71 |
| 4 | 20.52 | 6.84 | 46.7333 | 70 |

Table 100.5. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the ulva diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.38 | 0.7 | 0.4963 | 76 |
| 1 | 3.39 | 0.67 | 0.4552 | 76 |
| 2 | 3.49 | 0.6 | 0.3544 | 75 |
| 3 | 3.65 | 0.67 | 0.4524 | 71 |
| 4 | 3.74 | 0.62 | 0.3857 | 70 |

Table 100.6. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the ulva diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 16.75 | 7.24 | 52.3564 | 76 |
| 1 | 17.01 | 7.54 | 56.8468 | 76 |
| 2 | 18.43 | 7.53 | 56.7291 | 67 |
| 3 | 19.95 | 7.49 | 56.1659 | 60 |
| 4 | 21.21 | 7.34 | 53.9317 | 56 |

Table 100.6. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the ulva diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.37 | 0.77 | 0.5867 | 76 |
| 1 | 3.4 | 0.78 | 0.6122 | 76 |
| 2 | 3.46 | 0.72 | 0.513 | 67 |
| 3 | 3.72 | 0.74 | 0.5518 | 60 |
| 4 | 3.77 | 0.71 | 0.5068 | 58 |

Table 100.8. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the kelp diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 15.7 | 6.26 | 39.1921 | 76 |
| 1 | 15.25 | 6.37 | 40.5782 | 77 |
| 2 | 16.11 | 6.51 | 42.4152 | 59 |

Table 100.8. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the kelp diet and heated temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.24 | 0.63 | 0.3914 | 76 |
| 1 | 3.32 | 0.67 | 0.4504 | 76 |
| 2 | 3.3 | 0.66 | 0.434 | 59 |

Table 100.7. Descriptive statistics for weight (g), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the kelp diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (g) | St. dev (g) | Var (g^2) | n |
| 0 | 17.83 | 8.31 | 69.1369 | 76 |
| 1 | 17.65 | 8.27 | 68.436 | 76 |
| 2 | 18.13 | 8.35 | 69.7097 | 58 |

Table 100.7. Descriptive statistics for size (cm), in terms of mean, standard deviation and variance, of *P. angulosus* urchins given the kelp diet and ambient temperature treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Month | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| 0 | 3.42 | 0.83 | 0.6961 | 76 |
| 1 | 3.42 | 0.86 | 0.7474 | 76 |
| 2 | 3.43 | 0.85 | 0.7188 | 58 |

# Somatic growth rate values

Table 100.8. The difference in weight (g), for *P. angulosus* urchins under different diet and temperature treatments over 4 measurement intervals (T0, T1, T2, T3, T4).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Weight  (T1-T0) (g) | Weight  (T2-T1) (g) | Weight  (T3-T2) (g) |  | Weight  (T4-T3) (g) |
| 1 | formulated | warm | 1.26 | 1.11 | 0.32 |  | 0.55 |
| 2 | mixed | warm | 0.22 | 0.97 | 1.11 |  | 0.97 |
| 3 | formulated | ambient | 1.11 | 2.29 | 1.45 |  | -0.64 |
| 4 | mixed | ambient | 0.37 | 1.54 | 2.04 |  | 2.89 |
| 5 | mixed | warm | 0.58 | 1.23 | 1.87 |  | 1.51 |
| 6 | ulva | warm | 0.94 | 1.25 | 0.95 |  | 2.12 |
| 7 | kelp | ambient | 0.09 | -0.1 | 0 |  | 0 |
| 8 | ulva | ambient | 0.36 | 1.06 | 1.53 |  | 1.21 |
| 9 | ulva | warm | 0.36 | 0.58 | 1.09 |  | 0.61 |
| 10 | kelp | warm | -0.57 | 0.79 | 0 |  | 0 |
| 11 | kelp | ambient | -0.43 | 0.11 | 0 |  | 0 |
| 12 | formulated | ambient | 1.44 | 1.86 | 1.29 |  | 0.82 |
| 13 | formulated | warm | 0.95 | 0.83 | 0.32 |  | 0.2 |
| 14 | mixed | warm | 0.49 | 1.38 | 1.04 |  | 1.72 |
| 15 | ulva | ambient | 0.19 | 1.28 | 1.56 |  | 1.77 |
| 16 | mixed | ambient | 0.61 | 1.72 | 1.39 |  | 1.45 |
| 17 | ulva | warm | 0.54 | 0.76 | 0.78 |  | 1.3 |
| 18 | kelp | warm | -0.82 | 1.32 | 0 |  | 0 |
| 19 | formulated | ambient | 1.16 | 1.93 | 1.49 |  | 1.94 |
| 20 | kelp | ambient | 0.02 | 1.82 | 0 |  | 0 |
| 21 | kelp | warm | -0.03 | -0.39 | 0 |  | 0 |
| 22 | ulva | warm | 1.08 | 0.81 | 0.64 |  | 0.42 |
| 23 | mixed | ambient | 0.32 | 1.42 | 2.03 |  | 2.41 |
| 24 | formulated | ambient | 1.05 | 2.08 | 1.1 |  | 1.13 |
| 25 | mixed | warm | 0.55 | 1.77 | 1.37 |  | 1.34 |
| 26 | formulated | warm | 1.22 | 1.44 | 0.84 |  | -1.37 |
| 27 | ulva | ambient | 0.03 | 2.27 | 1.9 |  | 0.94 |
| 28 | ulva | ambient | 0.43 | 0.95 | 1.17 |  | 0.92 |
| 29 | kelp | warm | -0.33 | 1.4 | 0 |  | 0 |
| 30 | formulated | warm | 1.04 | 2.02 | 1.09 |  | 0.04 |
| 31 | mixed | ambient | 0.86 | 1.24 | 1.47 |  | 1.11 |
| 32 | kelp | ambient | -0.37 | 1.77 | 0 |  | 0 |

Table 100.8. The difference in size (cm), for *P. angulosus* urchins under different diet and temperature treatments over 4 measurement intervals (T0, T1, T2, T3, T4).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tank | Diet | Temperature | Size  (T1-T0) (cm) | Size  (T2-T1) (cm) | Size  (T3-T2) (cm) | Size  (T4-T3) (cm) |
| 1 | formulated | warm | 0.03 | -0.15 | 0.29 | -0.07 |
| 2 | mixed | warm | 0 | 0.04 | 0.25 | 0.03 |
| 3 | formulated | ambient | 0.58 | 0.03 | 0.15 | -0.05 |
| 4 | mixed | ambient | 0.1 | 0.02 | 0.3 | 0 |
| 5 | mixed | warm | -0.24 | 0.23 | 0.33 | 0.1 |
| 6 | ulva | warm | 0.07 | -0.08 | 0.32 | 0.06 |
| 7 | kelp | ambient | -0.02 | -0.07 | 0 | 0 |
| 8 | ulva | ambient | 0.15 | 0.18 | 0 | 0.14 |
| 9 | ulva | warm | -0.07 | 0.27 | -0.03 | 0.23 |
| 10 | kelp | warm | -0.06 | 0.18 | 0 | 0 |
| 11 | kelp | ambient | 0.06 | -0.06 | 0 | 0 |
| 12 | formulated | ambient | 0.29 | 0.1 | 0.12 | 0 |
| 13 | formulated | warm | -0.02 | 0.19 | -0.02 | 0 |
| 14 | mixed | warm | -0.07 | 0.19 | 0.48 | -0.15 |
| 15 | ulva | ambient | 0.03 | 0.11 | 0.3 | 0.05 |
| 16 | mixed | ambient | 0.04 | 0.1 | 0.31 | 0 |
| 17 | ulva | warm | 0.08 | 0.24 | 0.09 | 0.03 |
| 18 | kelp | warm | -0.07 | 0.1 | 0 | 0 |
| 19 | formulated | ambient | 0.05 | 0.11 | 0.24 | 0.04 |
| 20 | kelp | ambient | 0.05 | 0.09 | 0 | 0 |
| 21 | kelp | warm | -0.08 | -0.07 | 0 | 0 |
| 22 | ulva | warm | -0.02 | -0.04 | 0.29 | 0.03 |
| 23 | mixed | ambient | 0.27 | -0.06 | 0.57 | -0.16 |
| 24 | formulated | ambient | 0.07 | 0.06 | 0.36 | -0.16 |
| 25 | mixed | warm | -0.04 | 0.15 | 0.34 | -0.07 |
| 26 | formulated | warm | -0.06 | 0.15 | 0.2 | -0.16 |
| 27 | ulva | ambient | -0.01 | -0.04 | 0.42 | 0.05 |
| 28 | ulva | ambient | -0.03 | -0.03 | 0.34 | -0.03 |
| 29 | kelp | warm | 0.52 | -0.24 | 0 | 0 |
| 30 | formulated | warm | 0.01 | 0.41 | 0.03 | 0.03 |
| 31 | mixed | ambient | 0.03 | -0.15 | 0.32 | 0 |
| 32 | kelp | ambient | -0.07 | 0.27 | 0 | 0 |

Table 100.8. The difference in weight (g), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T0 and T1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatment | Mean (g) | St. dev (g) | Var (g^2) | n |
| KW | -0.438 | 0.337 | 0.113825 | 4 |
| KA | -0.172 | 0.265 | 0.070425 | 4 |
| UA | 0.252 | 0.179 | 0.032158 | 4 |
| MW | 0.46 | 0.164 | 0.027 | 4 |
| MA | 0.54 | 0.248 | 0.061533 | 4 |
| UW | 0.73 | 0.336 | 0.1132 | 4 |
| FW | 1.117 | 0.147 | 0.021625 | 4 |
| FA | 1.19 | 0.173 | 0.0298 | 4 |

Table 100.8. The difference in size (cm), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T0 and T1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| MW | -0.088 | 0.106 | 0.011158 | 4 |
| FW | -0.01 | 0.039 | 0.001533 | 4 |
| KA | 0.005 | 0.061 | 0.003767 | 4 |
| UW | 0.015 | 0.072 | 0.005233 | 4 |
| UA | 0.035 | 0.081 | 0.0065 | 4 |
| KW | 0.078 | 0.295 | 0.087092 | 4 |
| MA | 0.11 | 0.111 | 0.012333 | 4 |
| FA | 0.248 | 0.247 | 0.060958 | 4 |

Table 100.8. The difference in weight (g), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T1 and T2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (g) | St. dev (g) | Var (g^2) | n |
| KW | 0.78 | 0.826 | 0.681667 | 4 |
| UW | 0.85 | 0.284 | 0.080867 | 4 |
| KA | 0.9 | 1.037 | 1.0758 | 4 |
| MW | 1.337 | 0.334 | 0.111825 | 4 |
| FW | 1.35 | 0.512 | 0.261667 | 4 |
| UA | 1.39 | 0.602 | 0.363 | 4 |
| MA | 1.48 | 0.202 | 0.0408 | 4 |
| FA | 2.04 | 0.19 | 0.0362 | 4 |

Table 100.8. The difference in size (cm), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T1 and T2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| MA | -0.022 | 0.107 | 0.011492 | 4 |
| KW | -0.007 | 0.187 | 0.034892 | 4 |
| UA | 0.055 | 0.108 | 0.011633 | 4 |
| KA | 0.058 | 0.159 | 0.025425 | 4 |
| FA | 0.075 | 0.037 | 0.001367 | 4 |
| UW | 0.098 | 0.183 | 0.033492 | 4 |
| FW | 0.15 | 0.23 | 0.053067 | 4 |
| MW | 0.152 | 0.082 | 0.006692 | 4 |

Table 100.8. The difference in weight (g), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T2 and T3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (g) | St. dev (g) | Var (g^2) | n |
| KA | 0 | 0 | 0 | 4 |
| KW | 0 | 0 | 0 | 4 |
| FW | 0.643 | 0.386 | 0.149092 | 4 |
| UW | 0.865 | 0.196 | 0.038567 | 4 |
| FA | 1.332 | 0.177 | 0.031492 | 4 |
| MW | 1.348 | 0.376 | 0.141492 | 4 |
| UA | 1.54 | 0.298 | 0.089 | 4 |
| MA | 1.732 | 0.351 | 0.123092 | 4 |

Table 100.8. The difference in size (cm), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T2 and T3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| KA | 0 | 0 | 0 | 4 |
| KW | 0 | 0 | 0 | 4 |
| FW | 0.125 | 0.145 | 0.020967 | 4 |
| UW | 0.167 | 0.167 | 0.027758 | 4 |
| FA | 0.218 | 0.108 | 0.011625 | 4 |
| UA | 0.265 | 0.184 | 0.0337 | 4 |
| MW | 0.35 | 0.096 | 0.009133 | 4 |
| MA | 0.375 | 0.13 | 0.016967 | 4 |

Table 100.8. The difference in weight (g), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T3 and T4.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (g) | St. dev (g) | Var (g^2) | n |
| FW | -0.145 | 0.844 | 0.7123 | 4 |
| KA | 0 | 0 | 0 | 4 |
| KW | 0 | 0 | 0 | 4 |
| FA | 0.812 | 1.077 | 1.160625 | 4 |
| UW | 1.112 | 0.771 | 0.594092 | 4 |
| UA | 1.21 | 0.396 | 0.156867 | 4 |
| MW | 1.385 | 0.317 | 0.1007 | 4 |
| MA | 1.965 | 0.827 | 0.6833 | 4 |

Table 100.8. The difference in size (cm), for *P. angulosus* urchins under different diet (Kelp, Ulva, Mixed, Formulated) and temperature (Warm, Ambient) treatments between T3 and T4.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatments | Mean (cm) | St. dev (cm) | Var (cm^2) | n |
| FW | -0.05 | 0.084 | 0.007133 | 4 |
| FA | -0.043 | 0.087 | 0.007492 | 4 |
| MA | -0.04 | 0.08 | 0.0064 | 4 |
| MW | -0.022 | 0.11 | 0.012092 | 4 |
| KA | 0 | 0 | 0 | 4 |
| KW | 0 | 0 | 0 | 4 |
| UA | 0.053 | 0.069 | 0.004825 | 4 |
| UW | 0.088 | 0.096 | 0.009225 | 4 |

## A graph of a model Description automatically generated with medium confidenceSomatic growth rate statistical models

Figure 8: Standard model validation for the ANOVA model for weight gain difference (g) of urchins under different dietary and temperature treatments between T0 and T1. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

Table 101. Results of a two factor ANOVA testing the differences in weight gain differences (g) of urchins under 4 dietary treatments and 2 temperature treatments between T0 and T1. The sources of variation, the values of their sums of squares (Sum Sq), degrees of freedom (Df) and Mean sums of squares (Mean Sq) are shown, together with the resulting F statistic (F value) and probability (Pr(>F)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq |  | Mean Sq | F value | Pr(>F) |
| Diet | 3 | 8.553 |  | 2.8509 | 48.571 | 2.4 e-10 \*\*\* |
| Temperature | 1 | 0.002 |  | 0.0018 | 0.031 | 0.8625 |
| Diet: Temperature | 3 | 0.618 |  | 0.2060 | 3.509 | 0.0306 \* |
| Residuals | 24 | 1.409 |  | 0.0587 |  |  |

NEW

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Comparison | H0 | H1 | diff in Mean (g) | p.value | Conclusion |
| ulva-kelp | muU = muK | muU =/ muK | 0.796 | < 0.001 | Reject H0 |
| mixed-kelp | muM = muK | muM =/ muK | 0.805 | < 0.001 | Reject H0 |
| formulated-kelp | muF = muK | muF =/ muK | 1.459 | < 0.001 | Reject H0 |
| mixed-ulva | muM = muU | muM =/ muU | 0.009 | 1 | Accept H0 |
| formulated-ulva | muF = muU | muF =/ muU | 0.662 | < 0.001 | Reject H0 |
| formulated-mixed | muF = muM | muF =/ muM | 0.654 | < 0.001 | Reject H0 |

A graph of a model

Description automatically generated with medium confidence

Figure 9: Standard model validation for the ANOVA model for size growth difference (cm) of urchins under different dietary and temperature treatments between T0 and T1. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

A graph of a model

Description automatically generated

Figure 10: Standard model validation for the ANOVA model for weight gain difference (g) of urchins under different dietary and temperature treatments between T1 and T2. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

Table 102. Results of a two factor ANOVA testing the differences in weight gain differences (g) of urchins under 4 dietary treatments and 2 temperature treatments between T1 and T2. The sources of variation, the values of their sums of squares (Sum Sq), degrees of freedom (Df) and Mean sums of squares (Mean Sq) are shown, together with the resulting F statistic (F value) and probability (Pr(>F)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq |  | Mean Sq | F value | Pr(>F) |
| Diet | 3 | 3.258 |  | 1.0859 | 3.276 | 0.0384 \* |
| Temperature | 1 | 1.114 |  | 0.024 | 0.024 | 0.878 |
| Diet: Temperature | 3 | 0.491 |  | 0.1637 | 0.494 | 0.6900 |
| Residuals | 24 | 7.955 |  | 0.3315 |  |  |

A diagram of a model

Description automatically generated

Figure 11: Standard model validation for the ANOVA model for size difference (cm) of urchins under different dietary and temperature treatments between T1 and T2. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

Table 102. Results of a two factor ANOVA testing the differences in size growth (cm) of urchins under 4 dietary treatments and 2 temperature treatments between T1 and T2. The sources of variation, the values of their sums of squares (Sum Sq), degrees of freedom (Df) and Mean sums of squares (Mean Sq) are shown, together with the resulting F statistic (F value) and probability (Pr(>F)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq |  | Mean Sq | F value | Pr(>F) |
| Diet | 3 | 0.0312 |  | 0.01039 | 0.467 | 0.708 |
| Temperature | 1 | 0.0259 |  | 0.02588 | 1.163 | 0.292 |
| Diet: Temperature | 3 | 0.0587 |  | 0.01956 | 0.879 | 0.466 |
| Residuals | 24 | 0.5342 |  | 0.02226 |  |  |

A graph of a model

Description automatically generated with medium confidence

Figure 12: Standard model validation for the ANOVA model for weight gain difference (g) of urchins under different dietary and temperature treatments between T2 and T3. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

Table 103. Results of a two factor ANOVA testing the differences in weight gain differences (g) of urchins under 3 dietary treatments and 2 temperature treatments between T2 and T3. The sources of variation, the values of their sums of squares (Sum Sq), degrees of freedom (Df) and Mean sums of squares (Mean Sq) are shown, together with the resulting F statistic (F value) and probability (Pr(>F)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq |  | Mean Sq | F value | Pr(>F) |
| Diet | 2 | 1.2410 |  | 0.6205 | 6.501 | 0.00750 \*\* |
| Temperature | 1 | 2.0417 |  | 2.0417 | 21.389 | 0.00021 \*\*\* |
| Diet: Temperature | 2 | 0.1182 |  | 0.0591 | 0.619 | 0.54940 |
| Residuals | 18 | 1.7182 |  | 0.0955 |  |  |

A graph of a model

Description automatically generated with medium confidence

Figure 13: Standard model validation for the ANOVA model for size growth (cm) of urchins under different dietary and temperature treatments between T2 and T3. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

A graph of a model

Description automatically generated with medium confidence

Figure 9: Standard model validation for the ANOVA model for weight gain difference (g) of urchins under different dietary and temperature treatments between T3 and T4. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

Table 104. Results of a two factor ANOVA testing the differences in weight gain differences (g) of urchins under 3 dietary treatments and 2 temperature treatments between T3 and T4. The sources of variation, the values of their sums of squares (Sum Sq), degrees of freedom (Df) and Mean sums of squares (Mean Sq) are shown, together with the resulting F statistic (F value) and probability (Pr(>F)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq |  | Mean Sq | F value | Pr(>F) |
| Diet | 2 | 7.327 |  | 3.664 | 6.450 | 0.00772 \*\* |
| Temperature | 1 | 1.782 |  | 1.782 | 3.138 | 0.09343 |
| Diet: Temperature | 2 | 0.743 |  | 0.372 | 0.654 | 0.53173 |
| Residuals | 18 | 10.224 |  | 0.568 |  |  |

A graph of a model

Description automatically generated with medium confidence

Figure 14: Standard model validation for the ANOVA model size growth (cm) of urchins under different dietary and temperature treatments between T3 and T4. a) Scatterplot of the residuals versus the predicted values to check for similar variances, b) QQ plot of the residuals to check for normality, c) Histogram of the residuals to check for a normal distribution

Table 104. Results of a two factor ANOVA testing the differences in size growth (cm) of urchins under 3 dietary treatments and 2 temperature treatments between T3 and T4. The sources of variation, the values of their sums of squares (Sum Sq), degrees of freedom (Df) and Mean sums of squares (Mean Sq) are shown, together with the resulting F statistic (F value) and probability (Pr(>F)).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Df | Sum Sq |  | Mean Sq | F value | Pr(>F) |
| Diet | 2 | 0.06398 |  | 0.03199 | 4.069 | 0.0348 \* |
| Temperature | 1 | 0.00135 |  | 0.00135 | 0.172 | 0.6835 |
| Diet: Temperature | 2 | 0.00183 |  | 0.00091 | 0.116 | 0.8911 |
| Residuals | 18 | 0.14150 |  | 0.00786 |  |  |

NEW

Size SGR table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| tank | diet | temperature | treatment | s\_growth1 | s\_growth2 | s\_growth3 | s\_growth4 |
| 1 | formulated | warm | fw | 0.03 | -0.15 | 0.25 | -0.05 |
| 2 | mixed | warm | mw | 0 | 0.04 | 0.21 | 0.02 |
| 3 | formulated | ambient | fa | 0.57 | 0.03 | 0.12 | -0.04 |
| 4 | mixed | ambient | ma | 0.11 | 0.02 | 0.27 | 0 |
| 5 | mixed | warm | mw | -0.25 | 0.24 | 0.29 | 0.07 |
| 6 | ulva | warm | uw | 0.07 | -0.08 | 0.28 | 0.04 |
| 7 | kelp | ambient | ka | -0.02 | -0.08 | 0 | 0 |
| 8 | ulva | ambient | ua | 0.15 | 0.17 | 0 | 0.1 |
| 9 | ulva | warm | uw | -0.07 | 0.27 | -0.03 | 0.18 |
| 10 | kelp | warm | kw | -0.06 | 0.19 | 0 | 0 |
| 11 | kelp | ambient | ka | 0.06 | -0.06 | 0 | 0 |
| 12 | formulated | ambient | fa | 0.3 | 0.1 | 0.1 | 0 |
| 13 | formulated | warm | fw | -0.02 | 0.17 | -0.02 | 0 |
| 14 | mixed | warm | mw | -0.08 | 0.2 | 0.42 | -0.11 |
| 15 | ulva | ambient | ua | 0.03 | 0.12 | 0.28 | 0.04 |
| 16 | mixed | ambient | ma | 0.04 | 0.1 | 0.27 | 0 |
| 17 | ulva | warm | uw | 0.08 | 0.24 | 0.08 | 0.02 |
| 18 | kelp | warm | kw | -0.08 | 0.11 | 0 | 0 |
| 19 | formulated | ambient | fa | 0.05 | 0.11 | 0.21 | 0.03 |
| 20 | kelp | ambient | ka | 0.05 | 0.09 | 0 | 0 |
| 21 | kelp | warm | kw | -0.08 | -0.07 | 0 | 0 |
| 22 | ulva | warm | uw | -0.02 | -0.04 | 0.25 | 0.02 |
| 23 | mixed | ambient | ma | 0.28 | -0.06 | 0.49 | -0.11 |
| 24 | formulated | ambient | fa | 0.07 | 0.06 | 0.3 | -0.12 |
| 25 | mixed | warm | mw | -0.04 | 0.16 | 0.3 | -0.05 |
| 26 | formulated | warm | fw | -0.06 | 0.15 | 0.17 | -0.12 |
| 27 | ulva | ambient | ua | -0.01 | -0.04 | 0.36 | 0.04 |
| 28 | ulva | ambient | ua | -0.03 | -0.03 | 0.3 | -0.02 |
| 29 | kelp | warm | kw | 0.53 | -0.23 | 0 | 0 |
| 30 | formulated | warm | fw | 0.01 | 0.39 | 0.02 | 0.02 |
| 31 | mixed | ambient | ma | 0.03 | -0.15 | 0.29 | 0 |
| 32 | kelp | ambient | ka | -0.07 | 0.25 | 0 | 0 |

Weight SGR

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| tank | diet | temperature | treatment | w\_growth1 | w\_growth2 | w\_growth3 | w\_growth4 |
| 1 | formulated | warm | fw | 0.24 | 0.2 | 0.05 | 0.07 |
| 2 | mixed | warm | mw | 0.04 | 0.17 | 0.17 | 0.12 |
| 3 | formulated | ambient | fa | 0.19 | 0.37 | 0.19 | -0.07 |
| 4 | mixed | ambient | ma | 0.09 | 0.34 | 0.36 | 0.4 |
| 5 | mixed | warm | mw | 0.12 | 0.23 | 0.3 | 0.2 |
| 6 | ulva | warm | uw | 0.18 | 0.23 | 0.15 | 0.28 |
| 7 | kelp | ambient | ka | 0.02 | -0.02 | 0 | 0 |
| 8 | ulva | ambient | ua | 0.07 | 0.19 | 0.23 | 0.15 |
| 9 | ulva | warm | uw | 0.07 | 0.12 | 0.19 | 0.09 |
| 10 | kelp | warm | kw | -0.14 | 0.19 | 0 | 0 |
| 11 | kelp | ambient | ka | -0.08 | 0.02 | 0 | 0 |
| 12 | formulated | ambient | fa | 0.32 | 0.37 | 0.21 | 0.11 |
| 13 | formulated | warm | fw | 0.14 | 0.12 | 0.04 | 0.02 |
| 14 | mixed | warm | mw | 0.11 | 0.29 | 0.19 | 0.25 |
| 15 | ulva | ambient | ua | 0.05 | 0.3 | 0.31 | 0.28 |
| 16 | mixed | ambient | ma | 0.15 | 0.39 | 0.26 | 0.22 |
| 17 | ulva | warm | uw | 0.12 | 0.16 | 0.14 | 0.19 |
| 18 | kelp | warm | kw | -0.2 | 0.31 | 0 | 0 |
| 19 | formulated | ambient | fa | 0.24 | 0.37 | 0.23 | 0.25 |
| 20 | kelp | ambient | ka | 0 | 0.3 | 0 | 0 |
| 21 | kelp | warm | kw | -0.01 | -0.08 | 0 | 0 |
| 22 | ulva | warm | uw | 0.19 | 0.14 | 0.1 | 0.05 |
| 23 | mixed | ambient | ma | 0.07 | 0.28 | 0.33 | 0.31 |
| 24 | formulated | ambient | fa | 0.21 | 0.38 | 0.17 | 0.15 |
| 25 | mixed | warm | mw | 0.11 | 0.34 | 0.22 | 0.18 |
| 26 | formulated | warm | fw | 0.23 | 0.26 | 0.13 | -0.19 |
| 27 | ulva | ambient | ua | 0.01 | 0.43 | 0.29 | 0.12 |
| 28 | ulva | ambient | ua | 0.08 | 0.17 | 0.18 | 0.12 |
| 29 | kelp | warm | kw | -0.07 | 0.29 | 0 | 0 |
| 30 | formulated | warm | fw | 0.19 | 0.34 | 0.15 | 0 |
| 31 | mixed | ambient | ma | 0.19 | 0.26 | 0.26 | 0.16 |
| 32 | kelp | ambient | ka | -0.07 | 0.31 | 0 | 0 |

* SIZE TABLES