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# LAMPIRAN

#### Lampiran 1. Peta Lokasi Penelitian



#### Lampiran 2. Skor Kecerahan Ikan Guppy (*Poecilia reticulata*)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Skor Kecerahan Hari ke 0 | | | |  | |  | |
| Ulangan | Perlakuan | | | | | |
| A | B | C | | D | |
| 1 | 1 | 1 | 1 | | 1 | |
| 2 | 1 | 1 | 1 | | 1 | |
| 3 | 1 | 1 | 1 | | 1 | |
| Rata-rata | 1 | 1 | 1 | | 1 | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Skor Kecerahan Hari ke 7 | | | |  | |  | |
| Ulangan | Perlakuan | | | | | |
| A | B | C | | D | |
| 1 | 1 | 1 | 1 | | 1 | |
| 2 | 2 | 2 | 1 | | 1 | |
| 3 | 2 | 2 | 1 | | 1 | |
| Rata-rata | 2 | 2 | 1 | | 1 | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Skor Kecerahan Hari ke 14 | | | |  | |  | |
| Ulangan | Perlakuan | | | | | |
| A | B | C | | D | |
| 1 | 2 | 2 | 1 | | 1 | |
| 2 | 3 | 2 | 2 | | 1 | |
| 3 | 3 | 2 | 2 | | 1 | |
| Rata-rata | 3 | 2 | 2 | | 1 | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Skor Kecerahan Hari ke 21 | | | |  | |  | |
| Ulangan | Perlakuan | | | | | |
| A | B | C | | D | |
| 1 | 3 | 2 | 2 | | 1 | |
| 2 | 4 | 3 | 3 | | 2 | |
| 3 | 4 | 3 | 3 | | 2 | |
| Rata-rata | 4 | 3 | 3 | | 2 | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Skor Kecerahan Hari ke 30 | | | |  | |  | |
| Ulangan | Perlakuan | | | | | |
| A | B | C | | D | |
| 1 | 4 | 3 | 3 | | 2 | |
| 2 | 5 | 4 | 3 | | 2 | |
| 3 | 5 | 4 | 3 | | 2 | |
| Rata-rata | 5 | 4 | 3 | | 2 | |

#### Lampiran 3. Kandungan Nutrisi Perlakuan

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Jenis Pakan | Kandungan Gizi per 100gr (%) | | | | Literatur |
| Protein | Lemak | Serat Kasar | Kadar Abu |
| Artemia | 56.29 | 9.28 | 2.06 | 13.92 | (Harefa *et al*., 2022) |
| Daphnia | 42.65 | 8 | 2.58 | 4 | (Putri, 2015) |
| Tubifex | 47 | 13.3 | 2.04 | 3.6 | (Muria *et al*., 2012) |
| Pelet | 30 | 3 | 4 | 12 | (CP Petindo, 2024) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Perlakuan | Kandungan Gizi per 100gr (%) | | | |
| Protein | Lemak | Serat Kasar | Kadar Abu |
| Perlakuan A (Artemia 75%+ pelet 25%) | 49.71 | 7.71 | 2.54 | 13.4 |
| Perlakuan B (Daphnia 50%+ pelet 50%) | 36.32 | 5.5 | 3.29 | 8 |
| Perlakuan C (Tubifex 25%+ pelet 75%) | 34.25 | 5.57 | 3.51 | 9.9 |
| Perlakuan D (Pelet 100%) | 30 | 3 | 4 | 12 |

Perhitungan kandungan gizi tiap perlakuan berdasarkan persentase kandungan gizi sesuai literatur, sehingga didapatkan rumus perhitungan sebagai berikut :

Kandungan Gizi = (x.n) + (y.n)

Keterangan :

x = Presentasi pakan alami

y = Presentase pakan buatan

n = Nutrisi sesuai literatur

#### Lampiran 4. Monitoring Kualitas Air

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Akuarium Kontrol | | | | |  | |  | | | Akuarium A3 | | |  | | |  | | |
| **Hari ke -** | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | **NH3** | |  | **Hari ke -** | | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | | **NH3** | |
| 1 | 28 | 7.5 | | 5.31 | | 0.13 | |  | 1 | | 28 | 7.6 | | 5.29 | | | 0.13 | |
| 7 | 27 | 7.5 | | 5.31 | | 0.15 | |  | 7 | | 28 | 7.7 | | 5.31 | | | 0.15 | |
| 14 | 28 | 7.4 | | 5.30 | | 0.14 | |  | 14 | | 27 | 7.5 | | 5.33 | | | 0.14 | |
| 21 | 26 | 7.6 | | 5.29 | | 0.13 | |  | 21 | | 28 | 7.5 | | 5.31 | | | 0.13 | |
| 30 | 28 | 7.7 | | 5.31 | | 0.15 | |  | 30 | | 28 | 7.4 | | 5.30 | | | 0.15 | |
| Akuarium A1 | | |  | |  | |  | | | Akuarium B1 | | |  | | |  | | |
| **Hari ke -** | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | **NH3** | |  | **Hari ke -** | | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | | **NH3** | |
| 1 | 28 | 7.6 | | 5.29 | | 0.14 | |  | 1 | | 27 | 7.5 | | 5.29 | | | 0.14 | |
| 7 | 28 | 7.7 | | 5.31 | | 0.13 | |  | 7 | | 28 | 7.5 | | 5.31 | | | 0.13 | |
| 14 | 27 | 7.5 | | 5.35 | | 0.15 | |  | 14 | | 28 | 7.6 | | 5.34 | | | 0.15 | |
| 21 | 28 | 7.5 | | 5.31 | | 0.14 | |  | 21 | | 27 | 7.7 | | 5.31 | | | 0.14 | |
| 30 | 28 | 7.4 | | 5.30 | | 0.14 | |  | 30 | | 28 | 7.4 | | 5.30 | | | 0.14 | |
| Akuarium A2 | | |  | |  | |  | | | Akuarium B2 | | |  | | |  | | |
| **Hari ke -** | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | **NH3** | |  | **Hari ke -** | | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | | **NH3** | |
| 1 | 26 | 7.4 | | 5.31 | | 0.13 | |  | 1 | | 28 | 7.4 | | 5.29 | | | 0.13 | |
| 7 | 28 | 7.5 | | 5.31 | | 0.15 | |  | 7 | | 27 | 7.6 | | 5.31 | | | 0.15 | |
| 14 | 28 | 7.5 | | 5.31 | | 0.13 | |  | 14 | | 28 | 7.7 | | 5.30 | | | 0.13 | |
| 21 | 27 | 7.6 | | 5.30 | | 0.15 | |  | 21 | | 26 | 7.5 | | 5.35 | | | 0.15 | |
| 30 | 28 | 7.7 | | 5.31 | | 0.14 | |  | 30 | | 28 | 7.5 | | 5.31 | | | 0.14 | |
| Akuarium B3 | | |  | |  | |  | | | Akuarium C2 | | |  | | |  | |
| **Hari ke -** | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | **NH3** | |  | **Hari ke -** | | **Suhu (˚C)** | **pH** | | | **DO (ppm)** | | **NH3** |
| 1 | 28 | 7.6 | | 5.31 | | 0.14 | |  | 1 | | 28 | 7.5 | | | 5.31 | | 0.13 |
| 7 | 28 | 7.7 | | 5.31 | | 0.13 | |  | 7 | | 28 | 7.7 | | | 5.31 | | 0.13 |
| 14 | 27 | 7.5 | | 5.30 | | 0.15 | |  | 14 | | 28 | 7.4 | | | 5.31 | | 0.15 |
| 21 | 28 | 7.5 | | 5.29 | | 0.14 | |  | 21 | | 27 | 7.5 | | | 5.30 | | 0.14 |
| 30 | 28 | 7.4 | | 5.31 | | 0.14 | |  | 30 | | 28 | 7.5 | | | 5.31 | | 0.14 |
| Akuarium C1 | | |  | |  | |  | | | Akuarium C3 | | |  | | |  | |
| **Hari ke -** | **Suhu (˚C)** | **pH** | | **DO (ppm)** | | **NH3** | |  | **Hari ke -** | | **Suhu (˚C)** | **pH** | | | **DO (ppm)** | | **NH3** |
| 1 | 28 | 7.6 | | 5.29 | | 0.13 | |  | 1 | | 28 | 7.5 | | | 5.29 | | 0.13 |
| 7 | 28 | 7.7 | | 5.31 | | 0.15 | |  | 7 | | 27 | 7.5 | | | 5.31 | | 0.15 |
| 14 | 28 | 7.4 | | 5.29 | | 0.13 | |  | 14 | | 28 | 7.6 | | | 5.30 | | 0.14 |
| 21 | 26 | 7.5 | | 5.31 | | 0.15 | |  | 21 | | 26 | 7.5 | | | 5.31 | | 0.14 |
| 30 | 28 | 7.5 | | 5.30 | | 0.14 | |  | 30 | | 28 | 7.4 | | | 5.31 | | 0.14 |

#### Lampiran 5. Pertumbuhan Bobot Individu (gram) Ikan Guppy (*Poecilia reticulata*)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gr) | Sampling minggu ke - (gram) | | | |
| A | 1 | 0.74 | 0.93 | 1.21 | 1.48 | 1.84 |
| 2 | 0.75 | 0.95 | 1.25 | 1.5 | 1.86 |
| 3 | 0.73 | 0.99 | 1.27 | 1.53 | 1.87 |
| Rata-rata |  |  | 0.96 | 1.24 | 1.50 | 1.86 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gr) | Sampling minggu ke - (gram) | | | |
| 1 | 2 | 3 | 4 |
| B | 1 | 0.74 | 0.82 | 1.13 | 1.34 | 1.78 |
| 2 | 0.75 | 0.84 | 1.17 | 1.39 | 1.81 |
| 3 | 0.74 | 0.87 | 1.21 | 1.42 | 1.83 |
| Rata-rata |  |  | 0.84 | 1.17 | 1.38 | 1.81 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gr) | Sampling minggu ke - (gram) | | | |
| 1 | 2 | 3 | 4 |
| C | 1 | 0.74 | 0.76 | 1.08 | 1.29 | 1.74 |
| 2 | 0.76 | 0.8 | 1.13 | 1.34 | 1.78 |
| 3 | 0.74 | 0.83 | 1.17 | 1.38 | 1.8 |
| Rata-rata |  |  | 0.80 | 1.13 | 1.34 | 1.77 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gr) | Sampling minggu ke - (gram) | | | |
| 1 | 2 | 3 | 4 |
| D | 1 | 0.74 | 0.75 | 1.02 | 1.2 | 1.68 |
| 2 | 0.76 | 0.78 | 1.06 | 1.25 | 1.74 |
| 3 | 0.74 | 0.81 | 1.1 | 1.28 | 1.77 |
| Rata-rata |  |  | 0.78 | 1.06 | 1.24 | 1.73 |

#### Lampiran 6. Pertumbuhan Bobot Individu Mutlak (gram), Laju Pertumbuhan Bobot Harian (gram)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gram) | Wt (gram) | Pertumbuhan Bobot Individu Mutlak (gram) | Laju Pertumbuhan Harian (gram) |
| A | 1 | 0.74 | 1.84 | 1.10 | 0.0393 |
| 2 | 0.75 | 1.86 | 1.11 | 0.0396 |
| 3 | 0.73 | 1.87 | 1.14 | 0.0407 |
| Rata-rata |  | 0.74 | 1.86 | 1.12 | 0.0399 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gram) | Wt (gram) | Pertumbuhan Bobot Individu Mutlak (gram) | Laju Pertumbuhan Harian (gram) |
| B | 1 | 0.74 | 1.78 | 1.04 | 0.0371 |
| 2 | 0.75 | 1.81 | 1.06 | 0.0379 |
| 3 | 0.74 | 1.83 | 1.09 | 0.0389 |
| Rata-rata |  | 0.74 | 1.81 | 1.06 | 0.0380 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gram) | Wt (gram) | Pertumbuhan Bobot Individu Mutlak (gram) | Laju Pertumbuhan Harian (gram) |
| C | 1 | 0.74 | 1.74 | 1 | 0.0357 |
| 2 | 0.76 | 1.78 | 1.02 | 0.0364 |
| 3 | 0.74 | 1.8 | 1.06 | 0.0379 |
| Rata-rata |  | 0.75 | 1.77 | 1.03 | 0.0367 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Wo (gram) | Wt (gram) | Pertumbuhan Bobot Individu Mutlak (gram) | Laju Pertumbuhan Harian (gram) |
| D | 1 | 0.74 | 1.68 | 0.94 | 0.0336 |
| 2 | 0.76 | 1.74 | 0.98 | 0.0350 |
| 3 | 0.74 | 1.77 | 1.03 | 0.0368 |
| Rata-rata |  | 0.75 | 1.73 | 0.98 | 0.0351 |

#### Lampiran 7. Pertumbuhan Panjang Individu (cm) Ikan Guppy (*Poecilia reticulata*)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Sampling minggu ke - (cm) | | | |
| A | 1 | 2.11 | 2.45 | 2.73 | 3.08 | 3.39 |
| 2 | 2.15 | 2.48 | 2.85 | 3.16 | 3.41 |
| 3 | 2.16 | 2.49 | 2.87 | 3.27 | 3.54 |
| Rata-rata |  |  | 2.47 | 2.82 | 3.17 | 3.45 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Sampling minggu ke - (cm) | | | |
| 1 | 2 | 3 | 4 |
| B | 1 | 2.12 | 2.44 | 2.71 | 3.05 | 3.36 |
| 2 | 2.14 | 2.48 | 2.74 | 3.14 | 3.37 |
| 3 | 2.15 | 2.48 | 2.85 | 3.19 | 3.48 |
| Rata-rata |  |  | 2.47 | 2.77 | 3.13 | 3.40 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Sampling minggu ke - (cm) | | | |
| 1 | 2 | 3 | 4 |
| C | 1 | 2.13 | 2.43 | 2.72 | 3.03 | 3.31 |
| 2 | 2.14 | 2.47 | 2.73 | 3.05 | 3.34 |
| 3 | 2.16 | 2.49 | 2.76 | 3.12 | 3.42 |
| Rata-rata |  |  | 2.46 | 2.74 | 3.07 | 3.36 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Sampling minggu ke - (cm) | | | |
| 1 | 2 | 3 | 4 |
| D | 1 | 2.14 | 2.41 | 2.61 | 2.82 | 3.12 |
| 2 | 2.15 | 2.46 | 2.63 | 2.85 | 3.23 |
| 3 | 2.17 | 2.48 | 2.74 | 2.96 | 3.29 |
| Rata-rata |  |  | 2.45 | 2.66 | 2.88 | 3.21 |

#### Lampiran 8. Pertumbuhan Panjang Mutlak (cm) dan Laju Pertumbuhan Panjang Harian (cm)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Lt (cm) | Pertumbuhan panjang Mutlak (cm) | Laju Pertumbuhan panjang Harian (cm) |
| A | 1 | 2.11 | 3.39 | 1.28 | 0.0457 |
|  | 2 | 2.15 | 3.41 | 1.26 | 0.0434 |
|  | 3 | 2.16 | 3.54 | 1.38 | 0.0460 |
| Rata-rata |  | 2.14 | 3.45 | 1.31 | 0.0451 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Lt (cm) | Pertumbuhan panjang Mutlak (cm) | Laju Pertumbuhan panjang Harian (cm) |
| B | 1 | 2.12 | 3.36 | 1.24 | 0.0428 |
|  | 2 | 2.14 | 3.37 | 1.23 | 0.0410 |
|  | 3 | 2.15 | 3.48 | 1.33 | 0.0459 |
| Rata-rata |  | 2.14 | 3.40 | 1.27 | 0.0432 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Lt (cm) | Pertumbuhan panjang Mutlak (cm) | Laju Pertumbuhan panjang Harian (cm) |
| C | 1 | 2.13 | 3.31 | 1.18 | 0.0421 |
|  | 2 | 2.14 | 3.34 | 1.20 | 0.0414 |
|  | 3 | 2.16 | 3.42 | 1.26 | 0.0420 |
| Rata-rata |  | 2.14 | 3.36 | 1.21 | 0.0418 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Perlakuan | Ulangan | Lo (cm) | Lt (cm) | Pertumbuhan panjang Mutlak (cm) | Laju Pertumbuhan panjang Harian (cm) |
| D | 1 | 2.14 | 3.12 | 0.98 | 0.0327 |
|  | 2 | 2.15 | 3.23 | 1.08 | 0.0372 |
|  | 3 | 2.17 | 3.29 | 1.12 | 0.0386 |
| Rata-rata |  | 2.15 | 3.21 | 1.06 | 0.0362 |

#### Lampiran 9. Uji Statistik Bobot Individu Mutlak (gram) Ikan Guppy (*Poecilia reticulata*)

1. Normalitas

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | | | | |
| Perlakuan | | Kolmogorov-Smirnova | | | | Shapiro-Wilk | | | |
| Statistic | df | Sig. | Statistic | | df | Sig. |
| BobotMutlak | A | 0.292 | 3 |  | 0.923 | | 3 | 0.463 |
| B | 0.219 | 3 |  | 0.987 | | 3 | 0.780 |
| C | 0.253 | 3 |  | 0.964 | | 3 | 0.637 |
| D | 0.196 | 3 |  | 0.996 | | 3 | 0.878 |
| a. Lilliefors Significance Correction | | | | | | | | | |

H0 : Sig > alpha (normal)

H1 : Sig < alpha (tidak normal)

Sig 0.878 > 0.05 pada uji Shapiro-Wilk maka dapat dikatakan pertumbuhan bobot individu mutlak Ikan Guppy (*Poecilia reticulata*) mempunyai distribusi normal

1. Homogenitas

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test of Homogeneity of Variances** | | | | | |
|  | | Levene Statistic | df1 | df2 | Sig. |
| Bobot Mutlak | Based on Mean | 0.566 | 3 | 8 | 0.653 |
| Based on Median | 0.397 | 3 | 8 | 0.759 |
| Based on Median and with adjusted df | 0.397 | 3 | 6.469 | 0.760 |
| Based on trimmed mean | 0.556 | 3 | 8 | 0.659 |

Sig : 0.659 > 0.05

Kesimpulan :

Dapat dikatakan pertumbuhan bobot individu mutlak Ikan Guppy (*Poecilia reticulata*) mempunyai ragam data yang sama (homogen).

1. ANOVA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | |
| BobotMutlak | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 0.029 | 3 | 0.010 | 9.507 | 0.005 |
| Within Groups | 0.008 | 8 | 0.001 |  |  |
| Total | 0.037 | 11 |  |  |  |

Sig : 0.005 < 0.05 , H1 Berpengaruh nyata.

Kesimpulan :

Pemberian pakan alami keong mas dengan dosis berbeda berpengaruh sangat nyata terhadap pertumbuhan bobot individu mutlak Ikan Guppy (*Poecilia reticulata*).

1. Duncan

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **BobotMutlak** | | | | | |
| Perlakuan | | N | Subset for alpha = 0.05 | | |
| 1 | 2 | 3 |
| Tukey HSDa | D | 3 | 0.9833 |  |  |
| C | 3 | 1.0267 |  |  |
| B | 3 | 1.0633 | 1.0633 |  |
| A | 3 |  | 1.1167 |  |
| Sig. |  | 0.059 | 0.245 |  |
| Duncana | D | 3 | 0.9833 |  |  |
| C | 3 | 1.0267 | 1.0267 |  |
| B | 3 |  | 1.0633 | 1.0633 |
| A | 3 |  |  | 1.1167 |
| Sig. |  | 0.133 | 0.195 | 0.074 |
| Means for groups in homogeneous subsets are displayed. | | | | | |
| a. Uses Harmonic Mean Sample Size = 3.000. | | | | | |

Keterangan :

(A > B > C > D ) Berdasarkan Uji Duncan mendapatkan hasil terbaik pada perlakuan A dengan nilai 1.1167, perlakuan B dengan nilai 1.0633, perlakuan C dengan nilai 1.0267 dan disusul oleh perlakuan D dengan 0.9833.

#### Lampiran 10. Uji Statistik Laju Pertumbuhan Bobot Harian (gram) Ikan Guppy (*Poecilia reticulata*)

1. Uji Normalitas

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | | | |
| Perlakuan | | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| BobotHarian | A | 0.294 | 3 |  | 0.921 | 3 | 0.456 |
| B | 0.218 | 3 |  | 0.987 | 3 | 0.785 |
| C | 0.252 | 3 |  | 0.965 | 3 | 0.640 |
| D | 0.196 | 3 |  | 0.996 | 3 | 0.877 |
| a. Lilliefors Significance Correction | | | | | | | | |

H0 : Sig > alpHa (normal)

H1 : Sig < alpHa (tidak normal)

Kesimpulan : Sig 0.456 > 0.05 pada uji Shapiro-Wilk maka dapat dikatakan bahwa data laju pertumbuhan bobot harian Ikan Guppy (*Poecilia reticulata*) mempunyai distribusi normal.

1. Uji Homogenitas

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test of Homogeneity of Variances** | | | | | |
|  | | Levene Statistic | df1 | df2 | Sig. |
| Bobot Harian | Based on Mean | 0.571 | 3 | 8 | 0.650 |
| Based on Median | 0.401 | 3 | 8 | 0.756 |
| Based on Median and with adjusted df | 0.401 | 3 | 6.459 | 0.757 |
| Based on trimmed mean | 0.561 | 3 | 8 | 0.656 |

Sig : 0,656 > 0.05

Kesimpulan :

Data laju pertumbuhan harian Ikan Guppy (*Poecilia reticulata*) mempunyai ragam data yang sama (data homogen) dengan signifikasi lebih dari >0,05.

1. Uji ANOVA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | |
| BobotHarian | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 0.000 | 3 | 0.000 | 9.474 | 0.005 |
| Within Groups | 0.000 | 8 | 0.000 |  |  |
| Total | 0.000 | 11 |  |  |  |

Sig : 0.005 < 0.05 , H1 berpengaruh

Kesimpulan :

Pemberian pakan buatan dan alami berpengaruh sangat nyata terhadap laju pertumbuhan bobot harian Ikan Guppy (*Poecilia reticulata*).

1. Uji Duncan

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BobotHarian** | | | | | | | | | | |
| Perlakuan | | | N | | Subset for alpha = 0.05 | | | | | |
| 1 | | 2 | | 3 | |
| Tukey HSDa | D | 3 | | 0.0351200 | |  | |  | |
| C | 3 | | 0.0366667 | |  | |  | |
| B | 3 | | 0.0379767 | | 0.0379767 | |  | |
| A | 3 | |  | | 0.0398800 | |  | |
| Sig. |  | | 0.059 | | 0.247 | |  | |
| Duncana | D | 3 | | 0.0351200 | |  | |  | |
| C | 3 | | 0.0366667 | | 0.0366667 | |  | |
| B | 3 | |  | | 0.0379767 | | 0.0379767 | |
| A | 3 | |  | |  | | 0.0398800 | |
| Sig. |  | | 0.134 | | 0.195 | | 0.074 | |
| Means for groups in homogeneous subsets are displayed. | | | | | | | | | | |
| a. Uses Harmonic Mean Sample Size = 3.000. | | | | | | | | | | |

Kesimpulan :

(A > B > C > D ) Berdasarkan Uji Duncan mendapatkan hasil terbaik pada perlakuan A dengan nilai 0.0398800, perlakuan B dengan nilai 0.0379767, perlakuan C dengan nilai 0.0366667 dan disusul oleh perlakuan D dengan nilai 0.0351200.

#### Lampiran 11. Uji Statistik Panjang Individu Mutlak (cm) Ikan Guppy (*Poecilia reticulata*)

1. Uji Normalitas

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | | |
| Perlakuan | | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Panjang Mutlak | A | 0.328 | 3 |  | 0.871 | 3 | 0.298 |
| B | 0.353 | 3 |  | 0.824 | 3 | 0.174 |
| C | 0.292 | 3 |  | 0.923 | 3 | 0.463 |
| D | 0.276 | 3 |  | 0.942 | 3 | 0.537 |
| a. Lilliefors Significance Correction | | | | | | | |

H0 : Sig > alpHa (normal)

H1 : Sig < alpHa (tidak normal)

Kesimpulan : Sig = 0.298 > 0.05 pada uji Shapiro-Wilk maka dapat dikatakan bahwa data pertumbuhan panjang mutlak Ikan Guppy (*Poecilia reticulata*) Mempunyai distribusi normal.

1. Uji Homogenitas

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test of Homogeneity of Variances** | | | | | | | |
|  | | Levene Statistic | df1 | df2 | | Sig. | |
| Panjang Mutlak | Based on Mean | 0.528 | 3 | | 8 | | 0.675 |
| Based on Median | 0.102 | 3 | | 8 | | 0.956 |
| Based on Median and with adjusted df | 0.102 | 3 | | 7.191 | | 0.956 |
| Based on trimmed mean | 0.471 | 3 | | 8 | | 0.711 |

Sig 0.711 > 0.50

Kesimpulan :

Dapat dikatakan pertumbuhan panjang mutlak Ikan Guppy (*Poecilia reticulata*) mempunyai ragam data yang sama (homogen).

1. Uji ANOVA

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | | |
| PanjangMutlak | | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 0.105 | 3 | 0.035 | 9.945 | 0.004 |
| Within Groups | 0.028 | 8 | 0.004 |  |  |
| Total | 0.133 | 11 |  |  |  |

Sig : 0.004 < 0.05 , H1 Berpengaruh nyata

Kesimpulan :

Pemberian pakan buatan dan alami berpengaruh nyata terhadap pertumbuhan panjang mutlak Ikan Guppy (*Poecilia reticulata*).

1. Uji Duncan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PanjangMutlak** | | | | |
| Perlakuan | | N | Subset for alpha = 0.05 | |
| 1 | 2 |
| Tukey HSDa | D | 3 | 1.0600 |  |
| C | 3 | 1.2133 | 1.2133 |
| B | 3 |  | 1.2667 |
| A | 3 |  | 1.3067 |
| Sig. |  | 0.053 | 0.291 |
| Duncana | D | 3 | 1.0600 |  |
| C | 3 |  | 1.2133 |
| B | 3 |  | 1.2667 |
| A | 3 |  | 1.3067 |
| Sig. |  | 1.000 | 0.102 |
| Means for groups in homogeneous subsets are displayed. | | | | |
| a. Uses Harmonic Mean Sample Size = 3.000. | | | | |

Kesimpulan :

(A > B > C > D ) Berdasarkan Uji Duncan mendapatkan hasil terbaik pada perlakuan A dengan nilai 1.3067, perlakuan B dengan nilai 1.2667, perlakuan C dengan nilai 1.2133 dan disusul oleh perlakuan D dengan nilai 1.0600.

#### Lampiran 12. Uji Statistik Laju Pertumbuhan Panjang Harian (cm) Ikan Guppy (*Poecilia reticulata*)

1. Uji Normalitas

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | | | | | | | | |
| Perlakuan | | | Kolmogorov-Smirnova | | | | | | Shapiro-Wilk | | | | |
| Statistic | | df | | Sig. | | Statistic | | df | | Sig. |
| Panjang Harian | A | 0.348 | | 3 | |  | | 0.834 | | 3 | | 0.199 | |
| B | 0.239 | | 3 | |  | | 0.975 | | 3 | | 0.699 | |
| C | 0.320 | | 3 | |  | | 0.883 | | 3 | | 0.332 | |
| D | 0.300 | | 3 | |  | | 0.913 | | 3 | | 0.427 | |
| a. Lilliefors Significance Correction | | | | | | | | | | | | | |

H0 : Sig > alpHa (normal)

H1 : Sig < alpHa (tidak normal)

Kesimpulan :

Sig 0.199 > 0.05 pada uji Shapiro-Wilk maka dapat dikatakan bahwa data laju pertumbuhan panjang harian Ikan Guppy (*Poecilia reticulata*) mempunyai distribusi normal.

1. Uji Homogenitas

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Test of Homogeneity of Variances** | | | | | | | |
|  | | Levene Statistic | df1 | df2 | | Sig. | |
| Panjang Harian | Based on Mean | 2.971 | 3 | | 8 | | 0.097 |
| Based on Median | 0.758 | 3 | | 8 | | 0.548 |
| Based on Median and with adjusted df | 0.758 | 3 | | 4.739 | | 0.566 |
| Based on trimmed mean | 2.729 | 3 | | 8 | | 0.114 |

Sig : 0,114 > 0.05

Kesimpulan :

Data laju pertumbuhan panjang harian Ikan Guppy (*Poecilia reticulata*) mempunyai ragam data yang sama (data homogen) dengan signifikasi lebih dari > 0,05 .

1. Uji ANOVA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | |
| PanjangHarian | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 0.000 | 3 | 0.000 | 9.845 | 0.005 |
| Within Groups | 0.000 | 8 | 0.000 |  |  |
| Total | 0.000 | 11 |  |  |  |

Sig : 0.005 < 0.05 , H1 berpengaruh

Kesimpulan :

Pemberian pakan buatan dan alami berpengaruh sangat nyata terhadap laju pertumbuhan panjang harian Ikan Guppy (*Poecilia reticulata*).

1. Uji Duncan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PanjangHarian** | | | | | | | |
| Perlakuan | | | N | | Subset for alpha = 0.05 | | |
| 1 | | 2 |
| Tukey HSDa | D | 3 | | 0.0361767 | |  | |
| C | 3 | |  | | 0.0418400 | |
| B | 3 | |  | | 0.0432067 | |
| A | 3 | |  | | 0.0450533 | |
| Sig. |  | | 1.000 | | 0.315 | |
| Duncana | D | 3 | | 0.0361767 | |  | |
| C | 3 | |  | | 0.0418400 | |
| B | 3 | |  | | 0.0432067 | |
| A | 3 | |  | | 0.0450533 | |
| Sig. |  | | 1.000 | | 0.112 | |
| Means for groups in homogeneous subsets are displayed. | | | | | | | |
| a. Uses Harmonic Mean Sample Size = 3.000. | | | | | | | |

Kesimpulan :

(A > B > C > D ) Berdasarkan Uji Duncan mendapatkan hasil terbaik pada perlakuan A dengan nilai 0.0450533, perlakuan B dengan nilai 0.0432067, perlakuan C dengan nilai 0.0418400 dan disusul oleh perlakuan D dengan nilai 0.0361767.

**Lampiran 12. Foto Kegiatan Penelitian**

|  |  |
| --- | --- |
|  |  |
| Gambar 1. Ikan Guppy | Gambar 2. Tata Letak Wadah Penelitian |
|  |  |
| Gambar 3. Pengukuran Panjang Ikan | Gambar 4. Pengukuran Bobot Ikan |
|  |  |
| Gambar 5. Pemberian Pakan | Gambar 6. Monitoring Kualitas Air |

**RIWAYAT HIDUP**

 Fattah Fisabilillah Soplestuny dilahirkan di Tegal pada tanggal 27 September 2001. Penulis merupakan anak kedua dari Almarhum Bapak Faisal Rizal Soplestuny dan Ibu Asni Widiyanti. Penulis menyelesaikan pendidikan dasar di SDN Panggung 9, Kecamatan Tegal Timur, Kota Tegal, dan lulus pada tahun 2014. Selanjutnya, penulis melanjutkan pendidikan di SMP Muhammadiyah 1 Kota Tegal, Kecamatan Tegal Timur, Kota Tegal, dan lulus pada tahun 2017. Penulis kemudian meneruskan pendidikan di Sekolah Usaha Perikanan Menengah (SUPM) Negeri Kota Tegal, Kecamatan Tegal Timur, Kota Tegal, dengan jurusan Agribisnis Perikanan Air Payau dan Laut (APAPL), dan lulus pada tahun 2020. Pada tahun yang sama, penulis melanjutkan studi di Universitas Pancasakti Tegal, Fakultas Perikanan dan Ilmu Kelautan, dengan mengambil Program Studi Budidaya Perairan (BDP).