

L

A

M

P

I

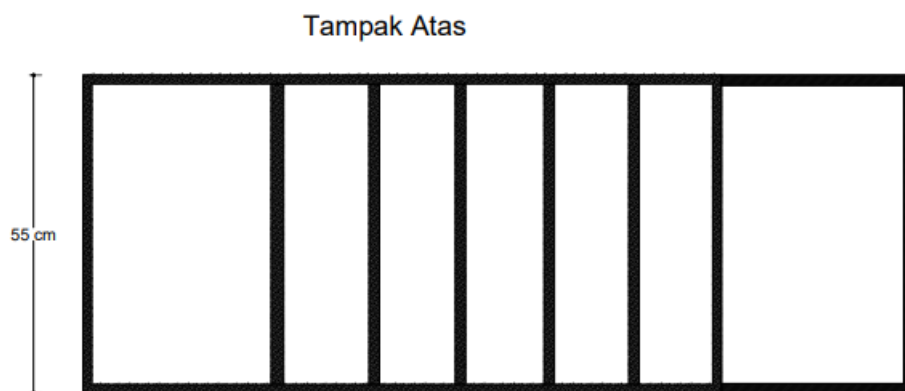
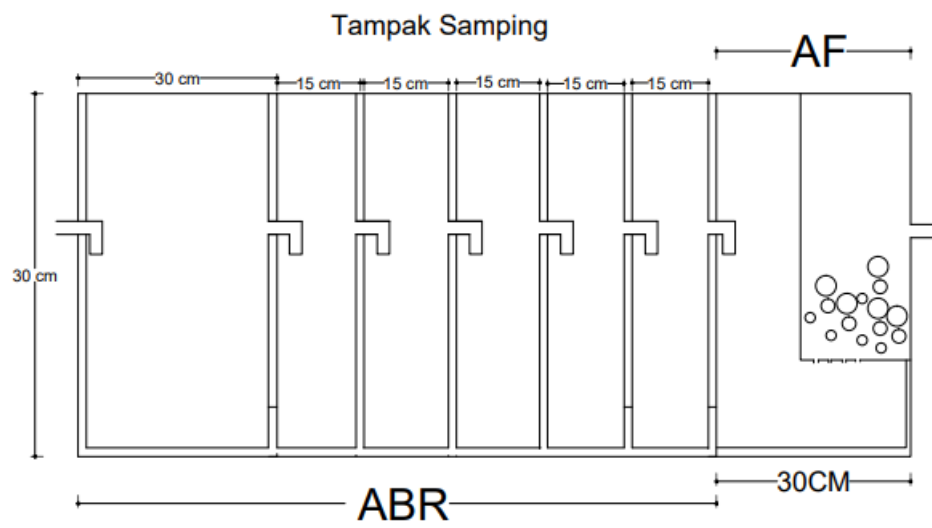
R

A

N

LAMPIRAN 1.

REAKTOR



Gambar 1. Desain Reaktor



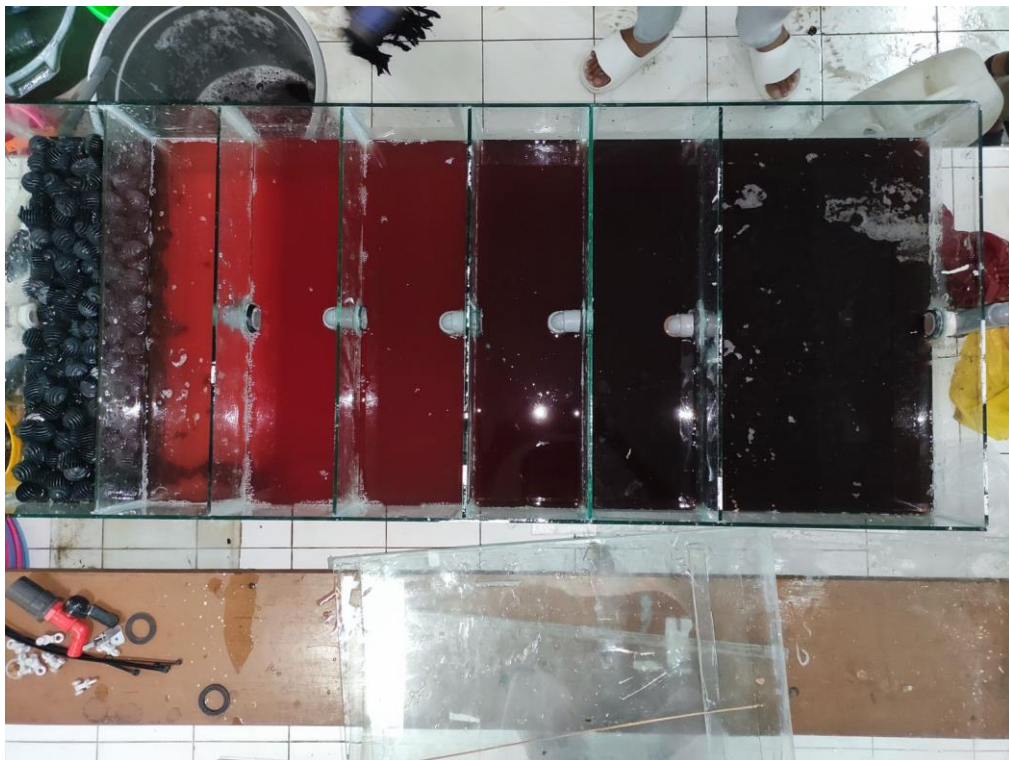
Gambar 2. Seeding Reaktor ABR



Gambar 3. Aklimatisasi Reaktor ABR



Gambar 4. *Running* Reaktor ABR-AF Media Kerikil



Gambar 4. *Running* Reaktor ABR-AF Media Bioball

LAMPIRAN 2.
UJI ANOVA ONE WAY
MENGGUNAKAN MINITAB 19

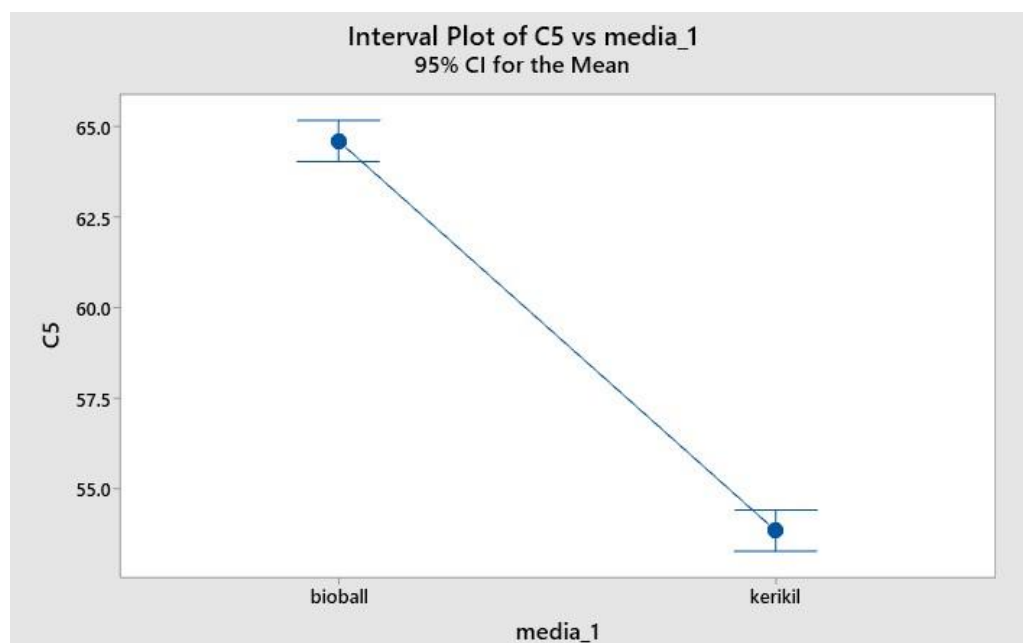
Analysis of Variance

| Source | DF | Adj SS | Adj MS | F-Value | P-Value |
|---------|----|---------|---------|---------|---------|
| media_1 | 1 | 173.882 | 173.882 | 1372.75 | 0.000 |
| Error | 4 | 0.507 | 0.127 | | |
| Total | 5 | 174.388 | | | |

Fisher Individual Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|-------------------|---------|------------------|
| kerikil - bioball | -10.767 | 0.291 | (-11.573, -9.960) | -37.05 | 0.000 |

Simultaneous confidence level = 95.00%



Grouping Information Using the Fisher LSD Method and 95% Confidence

| media_1 | N | Mean | Grouping |
|---------|---|--------|----------|
| bioball | 3 | 64.600 | A |
| kerikil | 3 | 53.833 | B |

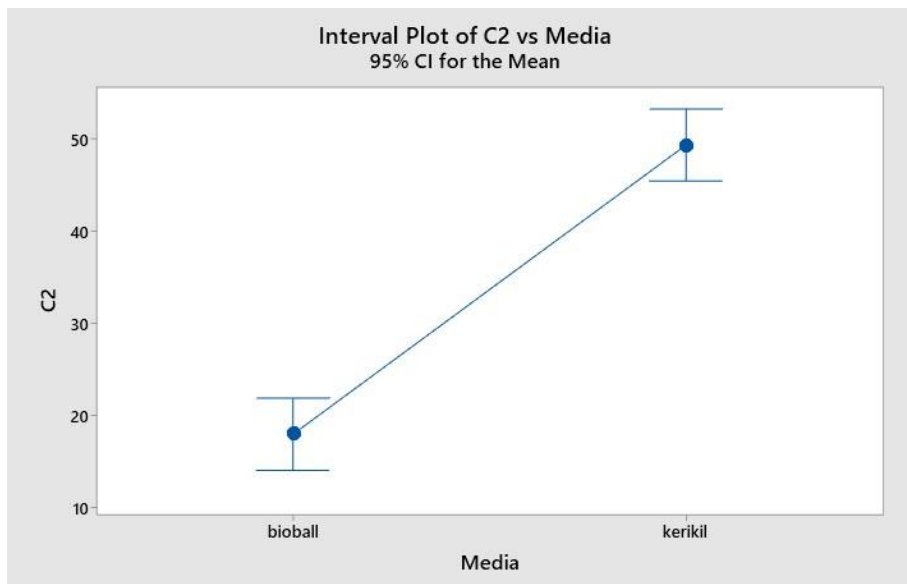
Analysis of Variance

| Source | DF | Adj SS | Adj MS | F-Value | P-Value |
|--------|----|---------|---------|---------|---------|
| Media | 1 | 1479.25 | 1479.25 | 248.72 | 0.000 |
| Error | 4 | 23.79 | 5.95 | | |
| Total | 5 | 1503.04 | | | |

Fisher Individual Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------|---------|------------------|
| kerikil - bioball | 31.40 | 1.99 | (25.87, 36.93) | 15.77 | 0.000 |

Simultaneous confidence level = 95.00%



Grouping Information Using the Fisher LSD Method and 95% Confidence

| Media | N | Mean | Grouping |
|---------|---|--------|----------|
| kerikil | 3 | 49.33 | A |
| bioball | 3 | 17.930 | B |

LAMPIRAN 3.

DOKUMENTASI



Gambar 1 Pengambilan Limbah Cair Rumah Potong Sapi



Gambar 2 Pengambilan Limbah Cair Rumah Potong Sapi



Gambar 3 Analisis COD dan TSS



Gambar 4 Analisis COD dan TSS

LAMPIRAN 4.
HASIL DAN BIAYA ANALISIS



PERKUMPULAN PENGELOLA PENDIDIKAN UMUM DAN TEKNOLOGI NASIONAL
MALANG

INSTITUT TEKNOLOGI NASIONAL MALANG

LABORATORIUM TEKNIK LINGKUNGAN

JURUSAN TEKNIK LINGKUNGAN

FAKULTAS TEKNIK SIPIL DAN PERENCANAAN

BANK NIAGA MALANG

Kampus 1 : JL. Bendungan Sigura – gura No. 2. Telp (0341) 551431 (Hunting), Fax (0341)553015 Malang 65145

Nomor : ITN-002/LAB/TL/FTSP/II/2023

Pemilik Sampel : Edgar Faishal Aly Muhammad

Jenis Sampel : Air Limbah Rumah Potong Hewan

DATA HASIL ANALISIS AWAL

| No | Parameter | Satuan | Perlakuan | Pengulangan | | | Rata - rata |
|----------------------------|-----------|--------|-----------|-------------|------|------|-------------|
| | | | | 1 | 2 | 3 | |
| Hasil Analisis Pendahuluan | | | | | | | |
| 1 | COD | mg/L | Awal | 2050 | 2050 | 2050 | 2050 |
| 2 | TSS | mg/L | Awal | 1950 | 1950 | 1950 | 1950 |

DATA HASIL ANALISIS SEEDING

| No | Parameter | Satuan | Perlakuan | Pengulangan | | | Rata - rata |
|------------------------------|-----------|--------|-----------|-------------|-------|-------|-------------|
| | | | | 1 | 2 | 3 | |
| Hasil Analisis Seeding Awal | | | | | | | |
| 1 | COD | mg/l | Hari ke-1 | 1144 | 1029 | 915,2 | 1029,3 |
| Hasil Analisis Seeding Akhir | | | | | | | |
| 2 | COD | mg/l | Hari ke-7 | 800,8 | 915,2 | 686,4 | 800,8 |

DATA HASIL ANALISIS AKLIMATISASI

| No | Parameter | Satuan | Perlakuan | Pengulangan | | | Rata - rata |
|---|-----------|--------|-----------|-------------|-----|-------|-------------|
| | | | | 1 | 2 | 3 | |
| Hasil Analisis Aklimatisasi Reaktor ABR | | | | | | | |
| 1 | COD | mg/L | Hari ke-8 | 752,2 | 755 | 751,3 | 752,8 |
| 2 | TSS | mg/L | Hari ke-8 | 110 | 110 | 100 | 107 |



PERKUMPULAN PENGELOLA PENDIDIKAN UMUM DAN TEKNOLOGI NASIONAL
MALANG

INSTITUT TEKNOLOGI NASIONAL MALANG

LABORATORIUM TEKNIK LINGKUNGAN

JURUSAN TEKNIK LINGKUNGAN

FAKULTAS TEKNIK SIPIL DAN PERENCANAAN

BANK NIAGA MALANG

Kampus 1 : Jl. Bendungan Sigura – gura No. 2. Telp (0341) 551431 (Hunting), Fax (0341)553015 Malang 65145

DATA HASIL ANALISIS RUNNING

| No | Parameter | Satuan | Perlakuan | Pengulangan | | | Rata - rata |
|-------------------------------|-----------|--------|---------------|-------------|-------|-------|-------------|
| | | | | 1 | 2 | 3 | |
| Hasil Analisis Running | | | | | | | |
| 1 | COD | mg/L | Media Bioball | 270,1 | 268,3 | 263,4 | 267,2 |
| | | | Media Kerikil | 349,5 | 347,4 | 344,6 | 347,1 |
| 2 | TSS | mg/L | Media Bioball | 92 | 90 | 89 | 90 |
| | | | Media Kerikil | 59 | 56 | 52 | 56 |

Malang, 10 Januari 2023

Mengetahui,

Kepala Laboratorium Teknik Lingkungan



Dr. Ir. Hervy Setvobudiarso, M.Si

NIP.196106201991031002



PERKUMPULAN PENGELOLA PENDIDIKAN UMUM DAN TEKNOLOGI NASIONAL
MALANG

INSTITUT TEKNOLOGI NASIONAL MALANG

LABORATORIUM TEKNIK LINGKUNGAN
JURUSAN TEKNIK LINGKUNGAN
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN

BANK NIAGA MALANG

Kampus 1 : Jl. Bendungan Sigura – gura No. 2. Telp (0341) 551431 (Hunting), Fax (0341)553015 Malang 65145

BIAYA ANALISIS

| No | Parameter | Jumlah Sampel | Banyak Pengulangan | Harga (Rp) | Jumlah (Rp) |
|---------------|-----------|---------------|--------------------|------------|-------------|
| 1 | COD | 5 | 3 | 55.000 | 825.000 |
| 2 | TSS | 4 | 3 | 35.000 | 420.000 |
| Jumlah | | | | | 1.245.000 |

Malang, 10 Januari 2023

Mengetahui,

Kepala Laboratorium Teknik Lingkungan



Dr. Ir. Hery Setyobudiarso, M.Si

NIP.196106201991031002

