

Gambar 1. Diagram Alir Proses Penelitian

Tabel 1. Hasil Uji Mutu Chitosan Larut Air

| Perlakuan | DD | Kelarutan | Kadar Air | Rendemen |
|-----------|----------|-----------|-----------|----------|
| K1T1 | 36,86 b | 84,07 d | 6,60 a | 5,61 a |
| K1T2 | 56,46 f | 50,83 h | 8,37 b | 2,28 cd |
| K1T3 | 35,40 i | 25,37 j | 9,27 c | 1,52 f |
| K2T1 | 36,44 bc | 90,00 c | 8,20 b | 3,20 c |
| K2T2 | 48,32 de | 70,33 g | 10,43 cd | 4,22 b |
| K2T3 | 48,09 d | 40,97 i | 9,80 cd | 1,53 e |
| K3T1 | 45,22 c | 92,10 b | 9,07 bc | 3,50 bc |
| K3T2 | 60,57 g | 80,33 f | 10,20 cd | 1,93 e |
| K3T3 | 49,61 e | 77,67 e | 11,27 de | 0,38 g |
| K4T1 | 94,21 a | 94,0 a | 10,60 d | 4,67 a |
| K4T2 | 68,22 h | 74,70 g | 10,47 cd | 2,56 d |
| K4T3 | 56,32 f | 78,53 e | 12,80 e | 0,27 g |

Keterangan:

K1T1 = H₂O₂ 3% dan 40 °C

K2T1 = H₂O₂ 10% dan 40 °C

K3T1 = H₂O₂ 7% dan 40 °C

K4T1 = H₂O₂ 13% dan 40 °C

K1T2 = H₂O₂ 3% dan 47,5 °C

K2T2 = H₂O₂ 10% dan 47,5 °C

K3T2 = H₂O₂ 7% dan 47,5 °C

K4T2 = H₂O₂ 13% dan 47,5 °C

K1T3 = H₂O₂ 3% dan 55 °C

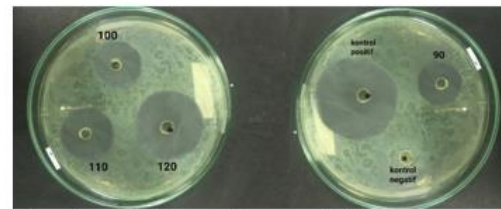
K2T3 = H₂O₂ 10% dan 55 °C

K3T3 = H₂O₂ 7% dan 55 °C

K4T3 = H₂O₂ 13% dan 55 °C

Tabel 2. Zona dan Respon Hambat Chitosan Larut Air terhadap bakteri *E. coli*

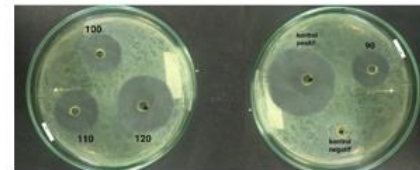
| Konsentrasi (mg/ml) | Diameter Zona Hambat (mm) | Respon Hambat Pertumbuhan |
|---------------------|---------------------------|---------------------------|
| 0 | 0±0 ^a | Tidak ada |
| 90 | 13,53±0,39 ^d | Sedang |
| 100 | 14,35±0,4 ^d | Sedang |
| 110 | 16,93±0,38 ^c | Kuat |
| 120 | 19,53±0,46 ^b | Kuat |
| Kontrol Positif | 24,33±0,98 ^a | Sangat Kuat |



Gambar 2. Zona Hambat Chitosan Larut Air terhadap bakteri *E. coli*

Tabel 3. Zona dan Respon Hambat Chitosan Larut Air terhadap bakteri *S. Epidermidis*

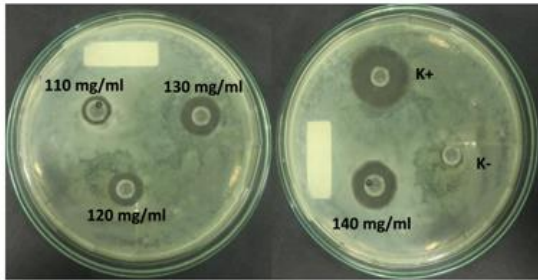
| Konsentrasi (mg/ml) | Rata-rata Diameter Zona Hambat (mm) | Respon Hambat Pertumbuhan |
|---------------------|-------------------------------------|---------------------------|
| 0 | 0±0 ^a | Tidak ada |
| 90 | 15,90±0,8 ^a | Kuat |
| 100 | 17,60±0,81 ^d | Kuat |
| 110 | 19,33±0,54 ^c | Kuat |
| 120 | 21,12±0,85 ^b | Sangat Kuat |
| Kontrol Positif | 26,83±0,39 ^f | Sangat Kuat |



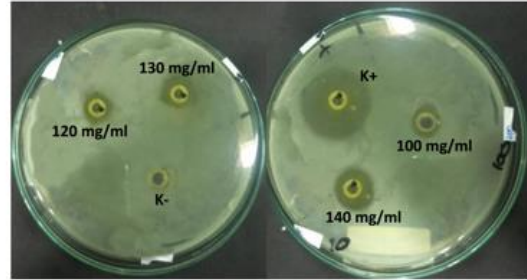
Gambar 3. Zona Hambat Chitosan Larut Air terhadap bakteri *S. Epidermidis*

Tabel 4. Nilai MIC dan MBC Chitosan Larut Air terhadap bakteri *E. coli* dan *S. epidermidis*

| Bakteri | Regresi Linear | MIC (mg/ml) | MBC (mg/ml) |
|-----------------------------------|------------------------|-------------|-------------|
| <i>Escherichia coli</i> | $y = 58,363x - 6,5733$ | 0,28 | 1,12 |
| <i>Staphylococcus epidermidis</i> | $y = 75,996x - 5,8209$ | 0,27 | 1,08 |



Gambar 4. Zona hambat *hand sanitizer* chitosan larut air terhadap *S. aureus*



Gambar 5. Zona hambat *hand sanitizer* chitosan larut air terhadap *E. coli*

Tabel 5. Nilai MIC dan MBC *hand sanitizer* chitosan larut air terhadap *S. aureus* dan *E. coli*

| Jenis Bakteri | Persamaan Linear | Total Rata-Rata Zona Hambat (mm) | MIC (mg/ml) | MBC (mg/ml) |
|------------------|----------------------|----------------------------------|-------------|-------------|
| <i>S. aureus</i> | $Y = 35,95x - 2,268$ | 10,39 | 0,27 | 1,065 |
| <i>E. coli</i> | $Y = 14,96x - 0,711$ | 6,74 | 0,262 | 1,048 |

Tabel 6. uji iritasi (eritema dan edema) hand Sanitizer Chitosan Larut Air

| Sampel Uji | Perlakuan | | | | | | Indeks Iritasi Primer |
|--|-----------|-------|---------|-------|---------|-------|-----------------------|
| | 24 Jam | | 48 Jam | | 72 Jam | | |
| | Eritema | Edema | Eritema | Edema | Eritema | Edema | |
| Kontrol + | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Formula 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Formula 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Formula 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Formula 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Formula 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Primary Irritation Indeks (PII) | 0 | | | | | | |

Keterangan :

Kontrol + = produk komersial F2 = *hand sanitizer* formula 2 (120 mg/ml)
 F0 = *hand sanitizer* formula 0 (0 mg/ml) F3 = *hand sanitizer* formula 3 (130 mg/ml)
 F1 = *hand sanitizer* formula 1 (110 mg/ml) F4 = *hand sanitizer* formula 4 (140 mg/ml)