1. Dilarang mengumpulkan dan memperdokumentasikan data seluas karya kunci di lokasi pertanaman obligasi yang tidak diperlukan.
2. Pengumpulan data dilakukan sambil memanfaatkan anggota relasi.
3. Pengumpulan data menggunakan teknik pendekatan.
4. Pengumpulan data menggunakan pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk, pendekatan penduduk.
Lampiran 1  Tahapan penelitian

Sterilisasi alat dan bahan -> Ekstraksi propolis -> Peremajaan Biakan -> Uji Aktivitas Antibakteri -> Analisis Statistik

Lampiran 2  Ekstraksi propolis

150 g propolis kasar

Maserasi dengan 500 mL pelarut etanol 70% selama 7 hari

Filtrat

Endapan

Dipekatkan dengan rotavapor

Ekstrak pekat ditimbang (nilai rendemen)

+ PEG 1 × volume

Ekstrak propolis 100 %

Uji aktivitas antibakteri
Lampiran 3 Rendemen ekstrak propolis

Bobot propolis kasar = 150,46 gram
Pelarut etanol 70% = 1100 mL
Robot ekstrak propolis pekat = 26,7367 gram

Rendemen = \[ \frac{\text{bobot ekstrak propolis pekat (gram)}}{\text{bobot propolis kasar (gram)}} \times 100\% \]
\[ = \frac{26,7367 \text{ g}}{150,45 \text{ g}} \times 100\% \]
\[ = 17,76\% \]

Lampiran 4 Data hasil uji pendahuluan aktivitas antibakteri

<table>
<thead>
<tr>
<th>Perlakuan</th>
<th>E. sakazakii IB-19b</th>
<th>E. sakazakii IB-29a</th>
<th>E. sakazakii ATCC 35217</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propolis Pandeglang 100 %</td>
<td>16,07</td>
<td>13,25</td>
<td>12,71</td>
</tr>
<tr>
<td>Ampisilin 10 mg/mL</td>
<td>40,82</td>
<td>34,02</td>
<td>26,83</td>
</tr>
<tr>
<td>Propolis X</td>
<td>11,16</td>
<td>7,81</td>
<td>8,16</td>
</tr>
<tr>
<td>Propilen glikol</td>
<td>6,75</td>
<td>5,98</td>
<td>6,30</td>
</tr>
</tbody>
</table>

*: nilai yang tercantum termasuk ukuran diameter lubang (+ 5 mm)

Diameter Zona Inhibisi Relatif (DZIR)

<table>
<thead>
<tr>
<th></th>
<th>E. sakazakii IB-19b</th>
<th>E. sakazakii IB-29a</th>
<th>E. sakazakii ATCC 35217</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ekstrak propolis (PrP) terhadap propolis X (%)</td>
<td>143,99</td>
<td>169,65</td>
<td>155,76</td>
</tr>
<tr>
<td>Ekstrak propolis (PrP) terhadap ampi silin (%)</td>
<td>39,37</td>
<td>38,94</td>
<td>47,37</td>
</tr>
</tbody>
</table>

Perhitungan:

\[ \% \text{DZIR} = \frac{\text{DZI sampel}}{\text{DZI antibiotik}} \times 100\% \]

\[ \% \text{DZIR Propolis terhadap ampi silin (IB-19B)} = \frac{16,07}{40,82} \times 100\% \]
\[ = 39,37\% \]

\[ \% \text{DZIR} = \% \text{Diameter Zona Inhibisi Relatif} \]

DZI = Diameter Zona Inhibisi
### Lampiran 5 Penentuan konsentrasi hambat tumbuh minimum *E. sakazakii* IB-19b

<table>
<thead>
<tr>
<th>Perlakuan</th>
<th>Diameter zona inhibisi (mm)</th>
<th>Ulangan 1</th>
<th>Ulangan 2</th>
<th>Ulangan 3</th>
<th>Rerata ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 %</td>
<td></td>
<td>12,65</td>
<td>15,22</td>
<td>14,25</td>
<td>14,0400 ± 1,2978</td>
</tr>
<tr>
<td>50 %</td>
<td></td>
<td>11,14</td>
<td>10,56</td>
<td>10,36</td>
<td>10,6867 ± 0,4051</td>
</tr>
<tr>
<td>25 %</td>
<td></td>
<td>9,14</td>
<td>9,11</td>
<td>9,48</td>
<td>9,2433 ± 0,2055</td>
</tr>
<tr>
<td>12,5 %</td>
<td></td>
<td>7,26</td>
<td>7,33</td>
<td>7,4</td>
<td>7,3300 ± 0,0700</td>
</tr>
<tr>
<td>6,25 %</td>
<td></td>
<td>6,69</td>
<td>5,9</td>
<td>6,98</td>
<td>6,5233 ± 0,5590</td>
</tr>
<tr>
<td>3,125 %</td>
<td></td>
<td>6,4</td>
<td>6,18</td>
<td>6,32</td>
<td>6,3000 ± 0,1114</td>
</tr>
<tr>
<td>Propolis X</td>
<td></td>
<td>10,8</td>
<td>9,57</td>
<td>9,34</td>
<td>9,9033 ± 0,7850</td>
</tr>
<tr>
<td>Propilen glkol</td>
<td></td>
<td>5,72</td>
<td>5,68</td>
<td>5,70</td>
<td>5,7000 ± 0,0200</td>
</tr>
<tr>
<td>Ampisilin</td>
<td></td>
<td>39,4</td>
<td>18,85</td>
<td>18,67</td>
<td>25,6400 ± 11,9168</td>
</tr>
<tr>
<td>akuades</td>
<td></td>
<td>5,34</td>
<td>5,57</td>
<td>5,38</td>
<td>5,4300 ± 0,1229</td>
</tr>
</tbody>
</table>

*: nilai yang tercantum termasuk ukuran diameter lubang (± 5 mm)

### Lampiran 6 Penentuan konsentrasi hambat tumbuh minimum *E. sakazakii* IB-29a

<table>
<thead>
<tr>
<th>Perlakuan</th>
<th>Diameter zona inhibisi (mm)</th>
<th>Ulangan 1</th>
<th>Ulangan 2</th>
<th>Ulangan 3</th>
<th>Rerata ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 %</td>
<td></td>
<td>10,46</td>
<td>11,21</td>
<td>10,47</td>
<td>10,7133 ± 0,4302</td>
</tr>
<tr>
<td>50 %</td>
<td></td>
<td>8,98</td>
<td>5,94</td>
<td>8,03</td>
<td>7,6500 ± 0,4051</td>
</tr>
<tr>
<td>25 %</td>
<td></td>
<td>6,97</td>
<td>5,7</td>
<td>7,39</td>
<td>6,6867 ± 0,2055</td>
</tr>
<tr>
<td>12,5 %</td>
<td></td>
<td>6,53</td>
<td>5,48</td>
<td>6,54</td>
<td>6,1833 ± 1,5552</td>
</tr>
<tr>
<td>6,25 %</td>
<td></td>
<td>5,82</td>
<td>5,72</td>
<td>6,11</td>
<td>5,8833 ± 0,8799</td>
</tr>
<tr>
<td>3,125 %</td>
<td></td>
<td>5,72</td>
<td>5,52</td>
<td>5,72</td>
<td>5,6533 ± 0,6091</td>
</tr>
<tr>
<td>Propolis X</td>
<td></td>
<td>8,45</td>
<td>6,43</td>
<td>6,85</td>
<td>7,2433 ± 1,0659</td>
</tr>
<tr>
<td>Propilen glkol</td>
<td></td>
<td>7,11</td>
<td>6,62</td>
<td>5,62</td>
<td>6,4500 ± 0,7594</td>
</tr>
<tr>
<td>Ampisilin</td>
<td></td>
<td>35,55</td>
<td>35,74</td>
<td>34,57</td>
<td>35,6450 ± 0,1344</td>
</tr>
<tr>
<td>akuades</td>
<td></td>
<td>5,49</td>
<td>5,52</td>
<td>5,38</td>
<td>5,4633 ± 0,0737</td>
</tr>
</tbody>
</table>

*: nilai yang tercantum termasuk ukuran diameter lubang (± 5 mm)
## Lampiran 7 Penentuan konsentrasi hambat tumbuh minimum *E. sakazakii* ATCC 35217

<table>
<thead>
<tr>
<th>Perlakuan</th>
<th>Diameter zona inhibisi (mm)*</th>
<th>Ulangan 1</th>
<th>Ulangan 2</th>
<th>Ulangan 3</th>
<th>Rerata ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 %</td>
<td></td>
<td>11,21</td>
<td>10,48</td>
<td>10,78</td>
<td>10,8233 ± 0,3669</td>
</tr>
<tr>
<td>50 %</td>
<td></td>
<td>6,51</td>
<td>6,72</td>
<td>6,62</td>
<td>6,6167 ± 0,1050</td>
</tr>
<tr>
<td>25 %</td>
<td></td>
<td>6,82</td>
<td>5,94</td>
<td>6,04</td>
<td>6,2667 ± 0,4818</td>
</tr>
<tr>
<td>12,5 %</td>
<td></td>
<td>5,72</td>
<td>5,7</td>
<td>6,08</td>
<td>5,8333 ± 0,2139</td>
</tr>
<tr>
<td>6,25 %</td>
<td></td>
<td>5,85</td>
<td>6,07</td>
<td>6,04</td>
<td>5,9867 ± 0,1193</td>
</tr>
<tr>
<td>3,125 %</td>
<td></td>
<td>5,92</td>
<td>5,66</td>
<td>5,82</td>
<td>5,8000 ± 0,1311</td>
</tr>
<tr>
<td>Propolis X</td>
<td></td>
<td>7,82</td>
<td>6,85</td>
<td>6,41</td>
<td>7,0267 ± 0,7214</td>
</tr>
<tr>
<td>Propilen glikol</td>
<td></td>
<td>7,10</td>
<td>6,29</td>
<td>6,41</td>
<td>6,6000 ± 0,4371</td>
</tr>
<tr>
<td>Ampisilin</td>
<td></td>
<td>28,25</td>
<td>29,12</td>
<td>27,84</td>
<td>28,4033 ± 0,6536</td>
</tr>
<tr>
<td>akuades</td>
<td></td>
<td>5,62</td>
<td>5,11</td>
<td>5,57</td>
<td>5,4333 ± 0,2811</td>
</tr>
</tbody>
</table>

*: nilai yang tercantum termasuk ukuran diameter lubang (± 5 mm)

## Lampiran 8 ANOVA KHTM *E. sakazakii* IB-19b

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1043,849</td>
<td>10</td>
<td>104,385</td>
<td>7,914</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>290,166</td>
<td>22</td>
<td>13,189</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1334,014</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Lampiran 9 Hasil analisis uji Duncan diameter zona bening *E. sakazakii* IB-19b

<table>
<thead>
<tr>
<th>SAMPEL</th>
<th>N</th>
<th>Subset for alpha = .05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propilen glikol</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>3,125 %</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>6,25 %</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>12,50 %</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>25,00 %</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Propolis X</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>50,00 %</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>100,00 %</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Ampisilin 10 mg/mL</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Sig. : 1,149,054, 1,000
### Lampiran 10 ANOVA KHTM E. sakazakii IB-29a

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2287,851</td>
<td>10</td>
<td>228,785</td>
<td>420,999</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>11,956</td>
<td>22</td>
<td>.543</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2299,806</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Lampiran 11 Hasil analisis uji Duncan diameter zona bening E. sakazakii IB-29a

<table>
<thead>
<tr>
<th>SAMPEL</th>
<th>N</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,125 %</td>
<td>3</td>
<td>5,6533</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.067</td>
</tr>
<tr>
<td>6,25 %</td>
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<td>5,8833</td>
<td>5,8833</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.053</td>
</tr>
<tr>
<td>12,50 %</td>
<td>3</td>
<td>6,1833</td>
<td>6,1833</td>
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<td></td>
<td></td>
<td></td>
<td>.080</td>
</tr>
<tr>
<td>Propilen glikol</td>
<td>3</td>
<td>6,4500</td>
<td>6,4500</td>
<td>6,4500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25,00 %</td>
<td>3</td>
<td>6,6867</td>
<td>6,6867</td>
<td>6,6867</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propolis X</td>
<td>3</td>
<td>7,2433</td>
<td>7,2433</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50,00 %</td>
<td>3</td>
<td>7,6500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100,00 %</td>
<td>3</td>
<td>10,7133</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ampisilin 10 mg/mL</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>35,2867</td>
</tr>
<tr>
<td>Sig.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.100</td>
</tr>
</tbody>
</table>

### Lampiran 12 ANOVA KHTM E. sakazakii ATCC 35217

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1358,667</td>
<td>10</td>
<td>135,867</td>
<td>923,236</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3,238</td>
<td>22</td>
<td>,147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1361,905</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Lampiran 13 Hasil analisis uji Duncan diameter zona bening E. sakazakii ATCC 35217

<table>
<thead>
<tr>
<th>SAMPEL</th>
<th>N</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,125 %</td>
<td>3</td>
<td>5,8000</td>
<td>5,8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.183</td>
</tr>
<tr>
<td>12,50 %</td>
<td>3</td>
<td>5,8333</td>
<td>5,8333</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.165</td>
</tr>
<tr>
<td>6,25 %</td>
<td>3</td>
<td>5,9867</td>
<td>5,9867</td>
<td>5,9867</td>
<td></td>
<td></td>
<td></td>
<td>.077</td>
</tr>
<tr>
<td>25,00 %</td>
<td>3</td>
<td>6,2667</td>
<td>6,2667</td>
<td>6,2667</td>
<td></td>
<td></td>
<td></td>
<td>.211</td>
</tr>
<tr>
<td>Propilen glikol</td>
<td>3</td>
<td>6,6000</td>
<td>6,6000</td>
<td>6,6000</td>
<td>6,6167</td>
<td>7,0267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50,00 %</td>
<td>3</td>
<td>6,6167</td>
<td>7,0267</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propolis X</td>
<td>3</td>
<td>7,0267</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100,00 %</td>
<td>3</td>
<td>10,8233</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ampisilin 10 mg/mL</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28,4033</td>
</tr>
<tr>
<td>Sig.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>
Keterangan: *E. sakazakii* (a) IB-19b; (b) IB-29a; (c) ATCC 35217

- Amp = Ampislin
- Ak = Akuades
- PG = Propilen Glikol
- PX = Propolis X
- PrP = Propolis Pandeglang 100%
Lampiran 15 Hasil uji penentuan konsentrasi hambat tumbuh minimum

**E. sakazakii IB-19b**

**E. sakazakii IB-29a**

**E. sakazakii ATCC 35217**

Keterangan:  
S1 = Ekstrak propolis Pandeglang 100%  
S2 = Ekstrak propolis Pandeglang 50%  
S3 = Ekstrak propolis Pandeglang 25%  
S4 = Ekstrak propolis Pandeglang 12,5%  
S5 = Ekstrak propolis Pandeglang 6,25%  
S6 = Ekstrak propolis Pandeglang 3,12%  
S7 = Ekstrak propolis Pandeglang 1,56%  
S8 = Ekstrak propolis Pandeglang 0,78%