Preliminary breeding objectives for honeybees

Gertje Petersen, P. F. Fennessy, P. R. Amer and P. K. Dearden
Why NZ cares more than others

400,000 hives

800,000 hives
Why NZ cares more than others
profit = honey − (labour + replacements)
The honey production Breeding Objective

honey yield

gentleness

winter survival

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Economic value: honey yield
Economic value: honey yield
Economic value: honey yield

<table>
<thead>
<tr>
<th>Region</th>
<th>Honey produced (in tonnes)</th>
<th>Percentage of total honey</th>
<th>Proportion of Mānuka per region</th>
<th>Total percentage of Mānuka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northland</td>
<td>2,158</td>
<td>13.5%</td>
<td>20.0%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Waikato</td>
<td>2,369</td>
<td>14.8%</td>
<td>10.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Coromandel</td>
<td>2,597</td>
<td>16.2%</td>
<td>20.0%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Hawke's Bay</td>
<td>3,765</td>
<td>23.5%</td>
<td>15.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Marlborough</td>
<td>1,324</td>
<td>8.3%</td>
<td>10.0%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Canterbury</td>
<td>2,144</td>
<td>13.4%</td>
<td>5.0%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Otago/Southland</td>
<td>1,674</td>
<td>10.3%</td>
<td>5.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>16,032</strong></td>
<td><strong>12.9%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NZ$11.65 / kg honey
Economic value: winter survival

Probability of having to replace a colony based on Wintering Index

NZ$53.62 / 10% WI improvement
The pollination Breeding Objective

honey yield
gentleness
pollination ability

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Genetic diversity
Cooperation between science and industry partners

Direct involvement of the end users

Development of tools for sustainable genetic improvement