CATTLE FEVER TICK ERADICATION PROGRAM UPDATE

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VETERINARY SERVICES
10/19/2016
Current Infestations
as of September 30, 2016

- **Systematic Area - 41**
- **Free Area - 61**
- **New Infestations**
- **Temporary Preventative Quarantine Area (TPQA)**
- **Permanent Quarantine Line**
- **Counties Encompassing Quarantine Area & Office Locations**

Prepared for APHIS-VS
by Melinda May
10/5/2016
USDA-ARS KBNLTRL
## Total Quarantines

<table>
<thead>
<tr>
<th>Type of Quarantine</th>
<th>Premises</th>
<th>Syst. Area</th>
<th>Free Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Released</td>
<td>Added</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infested</td>
<td>13</td>
<td>3</td>
<td>41</td>
<td>61</td>
</tr>
<tr>
<td>Native Exposed</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Mexico Exposed</td>
<td>12</td>
<td>1</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Adjacent/Check</td>
<td>21</td>
<td>56</td>
<td>288</td>
<td>1,573</td>
</tr>
</tbody>
</table>
## Number of Infested Acres

### September 30, 2016

<table>
<thead>
<tr>
<th>Work Area</th>
<th>Systematic Area</th>
<th>Free Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beginning Of Month</td>
<td>Released</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>22,040</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2,645</td>
<td>2,066</td>
</tr>
<tr>
<td>4</td>
<td>7,494</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>8,857</td>
<td>2,400</td>
</tr>
<tr>
<td>6</td>
<td>1,200</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>42,236</td>
<td>4,466</td>
</tr>
</tbody>
</table>
Fever Tick Vaccine

Tick Vaccine (ARS, Zoetis)

BM86 antigen based

R&D shows approx: 99% efficacy *R. annulatus*
45% efficacy *R. microplus*
Basic Development of Immunity

Figure 43.10a

(a) B cell antigen receptors and antibodies

Antigen receptor → Antibody

B cell

Antigen

Epitope

BM86 Tick Gut Protein

(a) B cell antigen receptors and antibodies
Ticks after feeding on vaccinated and non-vaccinated cattle

V = vaccinate
C = control
Fever Tick Vaccine Guidelines

- Producer education – 5
- Employee education USDA/CFTEP – 7
- TAHC Vaccine Rule – annual dose PQZ
- Administered by employees/authorized agents of USDA APHIS VS or TAHC for purpose of Cattle Fever Tick Eradication Program
- Label dosage: 2ml IM, Initial dose, booster 4 weeks later, single dose booster every 6 mos, 60 day withdrawal
BM86 Tick Vaccine
FY 2016

Total # Herds Vaccinated: 62
Total # Cattle Vaccinated: 1,576
Summary

- Limited treatment options: Coumaphos, Dectomax, ivermectin treated corn, ivermectin molasses tubs, vaccine
- Wildlife challenges: White-tailed deer, Nilgai, exotics, refuge limitations
- Producer challenges: gather expense, 100% treatment
- Data management
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