Smithfield Foods, Inc.  
Kinston, NC  
Environmental and Conservation Project  
Reefer trailer fuel reduction  
Presented by Daniel Mathis
KINSTON NC SMITHFIELD PACKAGED MEATS PLANT
HOW THE PROJECT ORIGINATED
### STEP 1

- Manually started tracking fuel usage on loaded and empty run cycles.

<table>
<thead>
<tr>
<th>Trailer</th>
<th>Set Point</th>
<th>Reefer Mode</th>
<th>Trailer status</th>
<th># of Days test was performed</th>
<th>Gallons of fuel consumed</th>
<th>Ambient average outside air temp</th>
<th>Engine run hours</th>
<th>Diesel cost @ 2.75 gal</th>
<th>Per day fuel usage</th>
<th>Lbs of CO2 produced per day</th>
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</thead>
<tbody>
<tr>
<td>22468</td>
<td>28</td>
<td>continuous</td>
<td>empty</td>
<td>5 1/4 days</td>
<td>44</td>
<td>53</td>
<td>122</td>
<td>$121.00</td>
<td>8.39 gallons</td>
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<td>25428</td>
<td>32</td>
<td>cycle on / off</td>
<td>loaded</td>
<td>5 1/2 days</td>
<td>11</td>
<td>57</td>
<td>24</td>
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<td>25802</td>
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<td>5 1/4 days</td>
<td>15</td>
<td>57</td>
<td>23</td>
<td>$41.25</td>
<td>2.85 gallons</td>
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DATA GATHERING
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DATA GATHERING
MONTHLY TEMPERATURES IN KINSTON, NC

- **Average High**
  - Jan: 55.0°F
  - Feb: 60.0°F
  - Mar: 67.0°F
  - Apr: 76.0°F
  - May: 83.0°F
  - Jun: 89.0°F
  - Jul: 91.0°F
  - Aug: 90.0°F
  - Sep: 84.0°F
  - Oct: 77.0°F
  - Nov: 68.0°F
  - Dec: 59.0°F

- **Average Low**
  - Jan: 35.0°F
  - Feb: 37.0°F
  - Mar: 42.0°F
  - Apr: 50.0°F
  - May: 58.0°F
  - Jun: 67.0°F
  - Jul: 71.0°F
  - Aug: 69.0°F
  - Sep: 64.0°F
  - Oct: 53.0°F
  - Nov: 45.0°F
  - Dec: 37.0°F

- **Record High**
  - Jan: 67.0°F
  - Feb: 60.0°F
  - Mar: 76.0°F
  - Apr: 83.0°F
  - May: 89.0°F
  - Jun: 91.0°F
  - Jul: 90.0°F
  - Aug: 84.0°F
  - Sep: 77.0°F
  - Oct: 68.0°F
  - Nov: 59.0°F
  - Dec: 50.0°F

- **Record Low**
  - Jan: 35.0°F
  - Feb: 37.0°F
  - Mar: 42.0°F
  - Apr: 50.0°F
  - May: 58.0°F
  - Jun: 67.0°F
  - Jul: 71.0°F
  - Aug: 69.0°F
  - Sep: 64.0°F
  - Oct: 53.0°F
  - Nov: 45.0°F
  - Dec: 37.0°F

- **Average Precipitation**

**July** is on average the WARMEST month. **January** is on average the COOLEST month.
INITIAL FINDINGS
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INITIAL FINDINGS
IMPLEMENTATION
Kinston’s Yearly Fuel Usage

YEAR: 2016, 2017, 2018
GALLONS: 95000, 105000, 115000, 125000
Kinston's First 2 months of the year

YTD JAN 1ST TO FEB 4TH

GALLONS OF DIESEL

<table>
<thead>
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<th>Year</th>
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<tr>
<td>2017</td>
<td>10882</td>
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<td>2018</td>
<td>5456</td>
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<td>2019</td>
<td>4302</td>
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CONCLUSION