AAFCO Proficiency Testing Program: 2017 Participation
AFS Analyte Participation: Median Labs Per Sample

Vet Drugs Sub Scheme

- Semduramicin sodium (mg/kg (ppm)) 2
- Diclazuril (mg/kg (ppm)) 5
- Maduramicin (mg/kg (ppm)) 6
- Amprolium (mg/kg (ppm)) 5.5
- Bacitracin (mg/kg (ppm)) 11
- Carbadox (mg/kg (ppm)) 5
- Chlortetracycline (mg/kg (ppm)) 15
- Decoquinate (mg/kg (ppm)) 9
- Erythromycin (mg/kg (ppm)) 2
- Ethoxyquin (mg/kg (ppm)) 19
- Lasalocid sodium (mg/kg (ppm)) 1
- Lincomycin (mg/kg (ppm)) 3
- Melengestrol Acetate (mg/kg (ppm)) 3
- Monensin (mg/kg (ppm)) 7
- Novobiocin (mg/kg (ppm)) 2.5
- Oxytetracycline (mg/kg (ppm)) 3
- Pyrantel TARtrate (mg/kg (ppm)) 3
- Salinomycin (mg/kg (ppm)) 2.5
- Sulfamethazine (mg/kg (ppm)) 3
- Tiamulin (mg/kg (ppm)) 2.5
- Tylosin (mg/kg (ppm)) 3
- Virginiamycin (mg/kg (ppm)) 3
- Narasin (mg/kg (ppm)) 3
- Ractopamine Hydrochloride (mg/kg (ppm)) 3
AFS Analyte Participation: Median Labs Per Sample

**Vitamins**

- Choline Chloride (mg / kg (ppm))
- Niacin (mg / kg (ppm))
- Pantothenic Acid (mg / kg (ppm))
- Riboflavin (mg / kg (ppm))
- Thiamine (mg / kg (ppm))
- Vitamin A (KU / kg)
- Vitamin B12 (µg / kg (ppb))
- Vitamin D3 (KU / kg)
- Vitamin E (IU/kg)
- Vitamin C, phosphorylated (mg / kg (ppm))
- Pyridoxine (µg / g)
- Folic Acid (mg / kg (ppm))
- Biotin (mg / kg (ppm))
AFS Analyte Participation: Median Labs Per Sample

**Sugars**

- Fructose (%)
- Galactose (%)
- Glucose (%)
- Lactose (%)
- Maltose (%)
- Sucrose (%)
- Raffinose (%)
- Stachyose (%)

[Graph showing the median labs per sample for each sugar]
AFS Analyte Participation:
Median Labs Per Sample

Fatty Acids

- Palmitoleic Acid (9c-16:1)
- Linoleic Acid (9c,12c-18:2)
- alpha-Linolenic Acid (9c,12c,15c-18:3)
- Eicosapentaenoic Acid EPA (5c,8c,11c,14c,17c-20:5)
- Docosapentaenoic Acid n-3 DPA (7c,10c,13c,16c,19c-22:5)
- Docosahexaenoic Acid DHA (4c,7c,10c,13c,16c,19c-22:6)
- Total n-3 Polyunsaturated (Omega-3) Fatty Acids
- Total n-6 Polyunsaturated (Omega-6) Fatty Acids
<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Name</th>
<th>Z-Cut</th>
<th>% Protein</th>
<th># in Z-Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>201721</td>
<td>Dry Dog Food</td>
<td>0.00%</td>
<td>28.9</td>
<td>84</td>
</tr>
<tr>
<td>201722</td>
<td>Poultry Layer Feed, Medicated</td>
<td>0.72%</td>
<td>19.0</td>
<td>95</td>
</tr>
<tr>
<td>201723</td>
<td>Milk Replacer, Medicated</td>
<td>0.00%</td>
<td>23.2</td>
<td>84</td>
</tr>
<tr>
<td>201724</td>
<td>Beef Feed, Medicated</td>
<td>0.00%</td>
<td>34.8</td>
<td>82</td>
</tr>
<tr>
<td>201725</td>
<td>Swine Feed</td>
<td>0.00%</td>
<td>21.3</td>
<td>84</td>
</tr>
<tr>
<td>201726</td>
<td>Fish Meal</td>
<td>0.00%</td>
<td>61.6</td>
<td>86</td>
</tr>
<tr>
<td>201796</td>
<td>Llama &amp; Alpaca Mineral</td>
<td>6.40%</td>
<td>5.9</td>
<td>28</td>
</tr>
<tr>
<td>201727</td>
<td>Equine Feed</td>
<td>1.15%</td>
<td>17.6</td>
<td>86</td>
</tr>
<tr>
<td>201728</td>
<td>Dairy Beef Feed, Medicated</td>
<td>0.00%</td>
<td>34.7</td>
<td>85</td>
</tr>
<tr>
<td>201729</td>
<td>Pheasant &amp; Turkey Feed</td>
<td>0.00%</td>
<td>20.9</td>
<td>82</td>
</tr>
<tr>
<td>201730</td>
<td>Swine Feed, Medicated</td>
<td>0.39%</td>
<td>21.3</td>
<td>90</td>
</tr>
<tr>
<td>201731</td>
<td>Lamb Feed, Medicated</td>
<td>0.00%</td>
<td>17.9</td>
<td>86</td>
</tr>
</tbody>
</table>
Pet Food Scheme Participation

# Labs

- Chicken Meal
- Soya Flour
- Wheat Flour
- Dried Egg Product
- Fish Meal - Menhaden
- Potato Flour
- Beet Pulp
- Non Fat Dried Milk
- Brewers Yeast
- Brown Rice
- Pork & Bone Meal
- Barley

Year Q1
- 2015 Q1
- 2015 Q2
- 2015 Q3
- 2015 Q4
- 2016 Q1
- 2016 Q2
- 2016 Q3
- 2016 Q4
- 2017 Q1
- 2017 Q2
- 2017 Q3
- 2017 Q4
NO VET DRUG Data Submitted!

But they are available in the DRW !!!
Vitamins

PFS Analyte Participation:
Median Labs Per Sample

Choline Chloride (mg / kg (ppm))
Niacin (mg / kg (ppm))
Pantothenic Acid (mg / kg (ppm))
Riboflavin (mg / kg (ppm))
Thiamine (mg / kg (ppm))
Vitamin A (KU / kg)
Vitamin B12 (µg / kg (ppb))
Vitamin D3 (KU / kg)
Vitamin E (IU/kg)
Pyridoxine (µg / g)
Folic Acid (mg / kg (ppm))
Biotin (mg / kg (ppm))
## PFS Analyte Participation: Median Labs Per Sample

### Amino Acids

<table>
<thead>
<tr>
<th>Amino Acid</th>
<th>Median Labs Per Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alanine (%)</td>
<td>7.5</td>
</tr>
<tr>
<td>Arginine (%)</td>
<td>8</td>
</tr>
<tr>
<td>Aspartic (%)</td>
<td>8</td>
</tr>
<tr>
<td>Cysteine/Cystine (%)</td>
<td>7.5</td>
</tr>
<tr>
<td>Glutamic (%)</td>
<td>8</td>
</tr>
<tr>
<td>Glycine (%)</td>
<td>8</td>
</tr>
<tr>
<td>Histidine (%)</td>
<td>8</td>
</tr>
<tr>
<td>Isoleucine (%)</td>
<td>8</td>
</tr>
<tr>
<td>Leucine (%)</td>
<td>8</td>
</tr>
<tr>
<td>L-Lysine (%)</td>
<td>8.5</td>
</tr>
<tr>
<td>Methionine (%)</td>
<td>8</td>
</tr>
<tr>
<td>Phenylalanine (%)</td>
<td>7.5</td>
</tr>
<tr>
<td>Proline (%)</td>
<td>7.5</td>
</tr>
<tr>
<td>Serine (%)</td>
<td>8</td>
</tr>
<tr>
<td>Threonine (%)</td>
<td>9</td>
</tr>
<tr>
<td>Tryptophan (%)</td>
<td>7</td>
</tr>
<tr>
<td>Tyrosine (%)</td>
<td>7.5</td>
</tr>
<tr>
<td>Valine (%)</td>
<td>7.5</td>
</tr>
<tr>
<td>Taurine (%)</td>
<td>3</td>
</tr>
</tbody>
</table>
## Pet Food Scheme
### 2016-17 Z-Cut Homogeneity Screen

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample Name</th>
<th>Pass Z-Cut %RSD</th>
<th>% Protein</th>
<th># in Z-Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>201644</td>
<td>Oat Flour</td>
<td>0.00%</td>
<td>13.0</td>
<td>27</td>
</tr>
<tr>
<td>201741</td>
<td>Canola Meal</td>
<td>0.00%</td>
<td>33.0</td>
<td>30</td>
</tr>
<tr>
<td>201742</td>
<td>Flaxseed Meal</td>
<td>0.00%</td>
<td>21.1</td>
<td>32</td>
</tr>
<tr>
<td>201743</td>
<td>Meat &amp; Bone Meal</td>
<td>0.00%</td>
<td>50.8</td>
<td>31</td>
</tr>
<tr>
<td>201744</td>
<td>Barley</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Z-Score Indications in Animal Feed Scheme and Pet Food Scheme

2017 to Date: 34,634 Tests

<table>
<thead>
<tr>
<th>Compliance</th>
<th>Warning</th>
<th>Actionable</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2 &gt; Z &gt; -2$</td>
<td>90.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>$3 &lt; Z &lt; -3$</td>
<td>4.7%</td>
<td></td>
</tr>
</tbody>
</table>
Base feed sourced from prior Check Samples. Minerals sourced separately.

- Added Minerals solubilized and sprayed over existing pre-ground base feed prior to blending and sample portioning.
- Spike concentrations calculated.

Existing Minerals in base feed established during prior testing round.

Homogenous Samples for distribution.
Minerals Scheme Participation

# Labs

- Poultry Layer Feed
- Rice
- Non Fat Dried Milk
- Dairy Feed
- Cattle Feed
- Lamb Feed, Medicated
- Swine Feed, Medicated
- Cat Food
- Poultry Feed
- Dairy Feed
- Swine Feed
- Dog Food
Z-Score Indications in Minerals Scheme (Horwitz ffp SD for PT)

<table>
<thead>
<tr>
<th>Samples</th>
<th>Sample Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>201751</td>
<td>Poultry Feed</td>
</tr>
<tr>
<td>201752</td>
<td>Dairy Feed</td>
</tr>
<tr>
<td>201753</td>
<td>Swine Feed</td>
</tr>
</tbody>
</table>

2017 to Date: 3 Samples 768 Tests

<table>
<thead>
<tr>
<th>Compliance</th>
<th>Warning</th>
<th>Actionable</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 &gt; Z &gt; -2</td>
<td>9.2%</td>
<td>13.2%</td>
</tr>
<tr>
<td>77.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mycotoxin Scheme
Sample Engineering

Trilogy sources the base feeds.

Materials thoroughly processed with regard to particle size and blending.

Homogeneity Testing
- 10 Sample bags analyzed in Duplicate.
- Randomized sampling & testing.
- First look at Raw Data

Stability Testing
- 5 additional sample bags held until post due date.
- Duplicate test portions randomized & analyzed.
- Data compared with prior Homogeneity testing data.

70,000 lb Masters Collection
- Carefully sourced feeds naturally contaminated with Mycotoxins.
- Incubated to raise concentration.
Mycotoxin Analyte Participation (2016 - 17)

All Labs Participating
AAFCO Proficiency Testing Program Scheme Participation

- **Animal Feed Scheme**
  - ✓ Proximates: 37% (2016), 35% (2017)
  - ✓ Minerals: 46% (2016), 44% (2017)
  - ✓ Vet Drugs: 0.2% (2016), 1% (2017)
  - ✓ Vitamins: 3% (2016), 3% (2017)
  - ✓ Amino Acids: 14% (2016), 16% (2017)
  - ✓ Sugars: 1% (2016), 1% (2017)
  - ✓ Fatty Acids: 0.2% (2016), 1% (2017)

- **Pet Food Scheme**
  - ✓ Proximates: 33% (2016), 34% (2017)
  - ✓ Minerals: 44% (2016), 41% (2017)
  - ✓ Vitamins: 4% (2016), 3% (2017)
  - ✓ Amino Acids: 16% (2016), 17% (2017)
  - ✓ Sugars: 2% (2016), 2% (2017)
  - ✓ Fatty Acids: 1% (2016), 4% (2017)