NIRS Sample Cell
Loaded Sample Cell
NIRS Instrument
Mycotoxins

- Relatively “new” to the Ag world – 1960’s
- Clients use mycotoxin/aflatoxin interchangeably & are surprised to learn there are more
- SDK screens for Aflatoxin, DON (Vomitoxin), Zearalanone, Fumonisin, & T-2
- Pose a particular threat in distiller’s byproducts; concentrates toxin by x3 or x4
- Contamination occurs in field or storage
## Aflatoxin

<table>
<thead>
<tr>
<th>Species</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immature livestock &amp; poultry</td>
<td>20 ppb</td>
</tr>
<tr>
<td>Breeding cattle</td>
<td></td>
</tr>
<tr>
<td>Breeding swine</td>
<td>100 ppb</td>
</tr>
<tr>
<td>Mature poultry</td>
<td></td>
</tr>
<tr>
<td>Finishing swine (&gt; 100 lbs)</td>
<td>200 ppb</td>
</tr>
<tr>
<td>Finishing beef cattle</td>
<td>300 ppb</td>
</tr>
</tbody>
</table>
## DON (Vomitoxin)

<table>
<thead>
<tr>
<th>Species</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>10 ppm; limit to 50% of DMI or 5ppm in diet</td>
</tr>
<tr>
<td>Poultry</td>
<td>10 ppm; limit to 50% of DMI or 5 ppm in diet</td>
</tr>
<tr>
<td>Swine</td>
<td>5 ppm; limit to 20% of DMI or 5 ppm in diet</td>
</tr>
<tr>
<td>All other</td>
<td>5 ppm; limit to 40% of DMI or 5 ppm in diet</td>
</tr>
</tbody>
</table>
Mycotoxin Effects

**Zearalenone**
- Irregular heats
- Low conception rates
- Ovarian cysts
- Embryonic loss

**DON**
- Laminitis

**T-2, DON, Aflatoxin**
- Milk contamination
- Decreased milk production
- Mastitis

**T-2, DON**
- Decreased feed intake
- Decreased feed efficiency
- Reduced milk production

**T-2, DON, Aflatoxin**
- Gastroenteritis
- Intestinal hemorrhages
- Impaired rumen function
- Diarrhea
- Ketosis