TTB’s Laboratory Certification Program, and Wine Sampling and Testing Programs

Submitted by: United States
TTB’s Laboratory Certification Program, and Wine Sampling and Testing Programs

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TTB Mission

- **Collect Revenue**  
  Collect all revenue that is rightfully due, eliminate or prevent tax evasion and other criminal conduct, and provide high quality service while imposing the least regulatory burden

- **Protect the Public**  
  Prevent consumer deception, ensure that regulated alcohol and tobacco products comply with Federal commodity, safety and distribution requirements
TTB Laboratories

National Laboratory Center, Maryland
- Beverage Alcohol Laboratory
- Nonbeverage Products Laboratory
- Tobacco Laboratory

Walnut Creek, California
- Compliance Laboratory

Capabilities

- ISO 17025 Accreditation
  - Beverage Alcohol Laboratory
  - Compliance Laboratory, and
  - Tobacco Laboratory

- Methods Used: Consensus Methods
  - Use official methods of the Association of Official Analytical Chemists (AOAC)
  - Develop methods, and validate
Alcohol Beverage Sampling Program

- **Marketed Products**
- **Statistically valid random sampling**
  - Collected from retail shops
  - Domestic and imported
- **Laboratory analyses to ensure**
  - Products conform to TTB regulations (class and type, label information accurately described)
  - Product safety
    - Limited / prohibited ingredients (TTB and FDA laws and regulations)
    - Sulfites, methanol, toxic metals, pesticides, mycotoxins, ingredients of herbs and botanicals, flavors, additives, etc.

Pesticide Monitoring Program

- **Yearly Program**
  - Currently about 100 wines per year analyzed
  - Sampling: subset of ABSP samples
  - Domestic and imported
- **Pesticides approved by EPA for application in grape vines have MRLs in grapes**
- **Analysis of wines**
  - Unauthorized pesticides
  - Authorized pesticides that exceed the MRL established for grapes
Ochratoxin-A (OTA)

- Ochratoxin A - a naturally occurring mycotoxin on grapes produced by mold
- International Agency for Research on Cancer (IARC) has classified OTA as a possible carcinogen to humans
- EU has established 2 ppb ochratoxin A maximum level in wine (from 2005 vintage)
- TTB monitors OTA levels in wines sold in US

<table>
<thead>
<tr>
<th>Wine Type (No)</th>
<th>Range (ppb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (93)</td>
<td>0.01 – 0.08</td>
</tr>
<tr>
<td>Rosé (15)</td>
<td>ND – 0.05</td>
</tr>
<tr>
<td>Red (133)</td>
<td>0.01 – 0.81</td>
</tr>
<tr>
<td>Dessert (4)</td>
<td>0.01 – 0.04</td>
</tr>
<tr>
<td>Sparkling wine (8)</td>
<td>ND – 0.04</td>
</tr>
<tr>
<td>Fruit Wine (3)</td>
<td>ND</td>
</tr>
</tbody>
</table>

Total 256 wines

All OTA levels are below the 2 ppb EU regulatory limit

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**Product Integrity Investigation**

- Mostly domestic products (wineries, breweries, distilleries)
  - Investigations and audits
- Imported Products (importers, distributors)
  - investigations
- Products are analyzed to ensure regulatory compliance
**Chemist Certification Program**

- Importing economies require analysis by a US certified laboratory.
- TTB offers a program to certify chemists at qualified private laboratories:
  - Wines, distilled spirits, and/or beers
  - Offered twice a year (Spring and Fall)
  - Applicants must meet TTB requirements:
    - Educational
    - Have necessary equipment to perform the tests
    - Pass testing of TTB provided samples
    - ISO 17025 Labs

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**Test Samples**

- All applicants analyze the same samples provided by TTB (from single lot/batch)
- TTB consensus values are determined
- All applicants need to meet the criteria
## Wine Analytes

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Reported to the nearest:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol by Volume</td>
<td>0.1% by volume</td>
</tr>
<tr>
<td>Total Extract</td>
<td>0.01 g/100mL</td>
</tr>
<tr>
<td>Total Acidity as Tartaric Acid</td>
<td>0.01 g/100mL</td>
</tr>
<tr>
<td>Volatile Acidity</td>
<td>0.001 g/100mL</td>
</tr>
<tr>
<td>Citric Acid</td>
<td>0.1 g/L</td>
</tr>
<tr>
<td>Total Sulfur Dioxide</td>
<td>1 mg/L</td>
</tr>
<tr>
<td>Residual Sugars (expressed as glucose + fructose)</td>
<td>0.1 g/100mL</td>
</tr>
<tr>
<td>Sorbic Acid</td>
<td>1 mg/L</td>
</tr>
<tr>
<td>Methanol</td>
<td>0.01 % v/v (or mg/L)</td>
</tr>
</tbody>
</table>

## Program Statistics (Wine, DS, and Beer)

<table>
<thead>
<tr>
<th></th>
<th>Total Applicants</th>
<th>New Applicants</th>
<th>Education Failures</th>
<th>Data Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>52</td>
<td>18</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Spring 2011</td>
<td>41</td>
<td>8</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>