Sweet Tea Extract

- English Name: **Sweet Tea Extract**
- Latin Name: Rubus Suavissimus S. Lee
- Extract Part: Leaf
- Molecular Formula: C$_{32}$H$_{50}$O$_{13}$ (Rubusoside)
- Molecular Weight: 642.73 (Rubusoside)
- Active ingredient: Rubusoside
- Specification: 70%, 80%, 85%
- Appearance: Light Yellow to off-white Powder
- Test method: HPLC
- Identification: TLC
- Brand Name: Hunan Nutramax Inc.
## Capacity of Hunan NutraMax

<table>
<thead>
<tr>
<th>Specification</th>
<th>Quote</th>
<th>Monthly Output</th>
<th>Annual Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweat Tea Ext.70%</td>
<td>$140/kg FOB</td>
<td>2-3MT</td>
<td>20-25MT</td>
</tr>
<tr>
<td>Sweat Tea Ext.80%</td>
<td>$152/kg FOB</td>
<td>1.5-2MT</td>
<td>15-20MT</td>
</tr>
<tr>
<td>Sweat Tea Ext.85%</td>
<td>$165/kg FOB</td>
<td>1.5-2MT</td>
<td>15-20MT</td>
</tr>
</tbody>
</table>
Sweet Tea Extract

- Sweet Tea Leaf Raw Materials (wild)
Sweet Tea Extract

- Sweet Tea Leaf Raw Materials
Sweet Tea Extract

- Sweet Tea Leaf Raw Materials
Plant Plan

**Time:** need 2 year to get leaf after plant, then can get leaf every year; in Aug.~Oct.;

**Quantity:** 300kg/ mou; make 12kg sweat tea Extract 80%;

**Plant Plan:** If 100mt STE 80%, it’s need about 10,000 Mou; it’s no problem; we can get 50,000~100,000, so it’s easy;
What is Sweet Tea Extract Produced in Hunan NutraMax Inc?

- **Kinds of Sweet Tea Leaf:**

- **Place of Origin of Sweet Tea Leaf:**
  - Guangxi (main producing areas are in Guangxi Dayaoshan Area), Guangdong, Hunan, Hubei, Xiangxi, Fujian, Zhejiang, etc.

- **Growth Habit of Sweet Tea Leaf:**
  - The rubusoside content of Guangxi Sweet is related to growth period. The rubusoside content of different growth stages of leaves has visible difference. The content of tender leaf is highest.
  - The mature leaf is better than fallen leaf.

  - High sweetness of Guangxi Sweet Tea, sweetness of dry tea is equivalent to 15 kg of sucrose sweetness, Rubusoside is equivalent to 300 kg of sucrose sweetness.

- **Annual Production Of Sweet Tea:** More than 1200MT
Where will NutraMax’s Sweet Tea Extract used for?

1. Tonify the kidney
2. Decrease blood pressure
3. Cure diabetes
4. Removing the phlegm and Relieve a cough
5. Treatment for fat

A recent Japanese study also indicates that it has anti-inflammatory effects and helps against allergies.
Application of NutraMax's Sweet Tea Extract?

- Beverage & Food
- Food additive & Sweetener
Test Chromatogram of Sweet Tea Extract

Tested by the Third Lab: NSF

NSF International
NSF (Shanghai) Testing Technology Co., Ltd.
Unit D1/F, 1 Floor, Building 10, 1188 Lianhang Road,
Minhang District, Shanghai, China
Tel: +86.21.2426.6300 | Fax: +86.21.2426.6299
www.nsfchina.lab

TEST REPORT
测试报告
Production Process of Sweet Tea Extract:

1. Pretreatment
2. Extraction
3. Filter
4. Concentration
5. Refine
6. Concentration
7. Drying
8. Grinding, Sifting
9. Mixing
10. Packing
11. Finished product
Sweet Tea Extract Advanced Equipment

• Stock of Sweet Leaves
Workshop of Hunan NutraMax Inc.
• Feed Inlet
Sweet Tea Extract

- Extraction
Sweet Tea Extract

- Extraction (ethanol allocation pot)
Sweet Tea Extract

- Filter
Sweet Tea Extract

- Concentration
Sweet Tea Extract

• Concentration (Bottom)
• Refine
Sweet Tea Extract

- Concentration
Sweet Tea Extract

- Drying
Sweet Tea Extract

- Grinding、Sifting
Sweet Tea Extract

- Mixing
Packing Room
Sweet Tea Extract

- Finished Product
Sweet Tea Extract

- Purified Water Equipment
Clean Room of Hunan NutraMax Inc.
Sweet Tea Extract

- Purified Water Equipment
Sweet Tea Extract

- Testing Equipment (by HPLC)
Sweet Tea Extract

- Testing Equipment (by UV-VIS)
Sweet Tea Extract

• Testing Equipment(by GC)
Sweet Tea Extract

- Testing Equipment (by AAS)
• **Testing Method of Rubusoside (MOA)**

  • Chromatographic Condition
  • Chromatographic Column: ZORBAX XDB-C18 (4.6×250mm)
  • Wavelength for detection: 210nm   Flow rate: 1.0ml/min
  • Column Temperature: 30°C    Injection Volume: 20μl
  • Mobile Phase: Methanol : H2O =65: 35
  • Rubusoside methanol solution 1.6mg/ml (0.16w/v%)

  • Preparation of sample solution
  • Put prepared test sample into 100 °C oven and bake 2 hours, remove and set into dryer immediately cooled to room temperature and take accurately weighed 40mg, dissolved in methanol (AR) and set the volume to 25 ml. And as prepare the samples. Each measurement into the control sample or standard sample.

  • Calculation

\[
\text{Rubusoside Content ( % )} = \frac{\text{As} \times \text{T} \times \text{Mt}}{\text{At} \times \text{Ms}} \times 100
\]

• As —— Peak area of sample solution
• At —— Peak area of Standards (reference substance)
• T —— Standard content
• Ms —— Concentration of sample solution (w/v%)
• Mt —— Concentration of Standards (reference substance) solution (w/v%)
**Shimadzu LCsolution Analysis Report**

- Sample Name: Sweet Tea (Raw Material)
- Injection Volume: 10ul
- Data File Name: Sweet Tea reference
- Method File Name: Sweet Tea Test method .lcm
- Data Collection: 2014-1-13 9:15:13am
- Data Treatment: 2014-1-13 9:25:37pm

---

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<td>144158</td>
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- (98.97%) Sample Quantity: 4.0mg→10ml
Sweet Tea Extract

Shimadzu LCsolution Analysis Report

- Sample Name: Sweet Tea (Raw Material) STRR-140113
- Injection Volume: 10ul
- Data File Name: Sweet Tea Sample STRR-140113
- Method File Name: Sweet Tea Test method.lcm
- Data Collection: 2014-1-13 9:26:19 am
- Data Treatment: 2014-1-13 9:37:14 pm

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<td>32.931</td>
<td>2002297</td>
<td>126128</td>
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</table>

- Sample quantity: 96.2mg → 10ml
- Assay is 3.37%
Shimadzu LCsolution Analysis Report

Sample Name: Rubusoside
Injection Volume: 10ul
Data File Name: Rubusoside reference
Method File Name: Rubusoside Test method .lcm
Data Collection: 2014-2-26 10:09:10 am
Data Treatment: 2014-2-26 10:49:23 am

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<th>Area</th>
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<td>4022479</td>
<td>393923</td>
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</table>

Reference substance (99.38%): 5.0mg→10ml
Shimadzu LCsolution Analysis Report

Sample Name: Rubusoside
Injection Volume: 10ul
Data File Name: Rubusoside Sample STR-140210
Method File Name: Rubusoside Test method.lcm
Data Collection: 2014-2-26 10:50:01 am
Data Treatment: 2014-2-26 11:22:09 am

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Sample: 21.5mg → 50ml
Assay: 70.41%
### Microbiological Test Results

#### Certificate of Analysis

**Hunan Agriculture University Test Center**

**Certificate of Analysis**

<table>
<thead>
<tr>
<th>Code: 20130511</th>
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<tbody>
<tr>
<td>Page 1, Total 2 Page</td>
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**Name of Sample:** Sweet Tea Leaf Extract  
**Test Purpose:**  
**Entrust Test:**

<table>
<thead>
<tr>
<th>Specification</th>
<th>TEST POBJECT</th>
<th>ENTRUST TEST</th>
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<tbody>
<tr>
<td>70%</td>
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<td>GIS-130504</td>
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<table>
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<tr>
<th>Sample Description</th>
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<tbody>
<tr>
<td>Solid in bulk</td>
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</table>

<table>
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<tr>
<th>Client</th>
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<tbody>
<tr>
<td>Hunan Nutramax Inc.</td>
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<table>
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<tr>
<th>Date</th>
<th>Sample Quantity</th>
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<td>MAY.11, 2013</td>
<td>50G</td>
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<tr>
<th>Test Standard</th>
<th>Test Period</th>
<th>Test Content</th>
<th>Conclusion</th>
<th>Remark</th>
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</table>
| GB | MAY.11, 2013 To MAY.13, 2013 | CIRCUMSTANCES ARE IN THE REPORT ATTACHMENT.  
CIRCUMSTANCES ARE IN THE REPORT ATTACHMENT.  
THE TESTING RESULTS ARE ONLY VALID FOR THE SAMPLE TESTED. |  |  |

<table>
<thead>
<tr>
<th>Test By:</th>
<th>Checket By:</th>
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<tbody>
<tr>
<td></td>
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</table>
## Microbiological Test Results Table

<table>
<thead>
<tr>
<th>No.</th>
<th>Analysis item</th>
<th>Specification</th>
<th>Result, cfu/g</th>
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<tbody>
<tr>
<td>1</td>
<td>Total plate count</td>
<td>Max 1000cfu/g</td>
<td>Complies</td>
</tr>
<tr>
<td>2</td>
<td>Yeast &amp; mold</td>
<td>Max 100cfu/g</td>
<td>Complies</td>
</tr>
<tr>
<td>3</td>
<td>Aflatoxin (B1, B2, G1, G2)</td>
<td>0.2ug/kg</td>
<td>Complies</td>
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<tr>
<td>4</td>
<td>Salmonella</td>
<td>Negative</td>
<td>ND</td>
</tr>
<tr>
<td>5</td>
<td>E.Coli</td>
<td>Negative</td>
<td>ND</td>
</tr>
<tr>
<td>6</td>
<td>Staphylococcus aureus</td>
<td>Negative</td>
<td>ND</td>
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</tbody>
</table>
- **Pesticides Test Results**

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<table>
<thead>
<tr>
<th>NAME OF SAMPLE</th>
<th>Sweet Tea Leaf Extract</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIFICATION</td>
<td>70% Hexochlorophene</td>
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<tr>
<td>SAMPLE DESCRIPTION</td>
<td>Solid in bulk</td>
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<tr>
<td>CLIENT</td>
<td>Hunan Nutramax Inc.</td>
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<tr>
<td>DATE RECEIVED</td>
<td>MAY 11, 2013</td>
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<tr>
<td>TEST STANDARD</td>
<td>GC/MS; LC/MS/MS</td>
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<td>TEST PERIOD</td>
<td>MAY 11, 2013 To MAY 14, 2013, 2013年5月11日至2013年5月15日</td>
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<td>TEST CONTENT</td>
<td>CIRCUMSTANCES ARE IN THE REPORT ATTACHMENT. 详见检验报告附件。</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>SUPPLY REAL MEASURING DATA 供应实测数据</td>
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<tr>
<td>REMARK</td>
<td>THE TESTING RESULTS ARE ONLY VALID FOR THE SAMPLE TESTED. 检测结果仅对样品负责。</td>
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**CERTIFICATE OF ANALYSIS**

**CODE:** 20130511

**TEST CENTER:** HUNAN AGRICULTURE UNIVERSITY TEST CENTER

**SAMPLE QUANTITY:** 50G

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**TEST BY:** [Signature]

**CHECKED BY:** [Signature]
<table>
<thead>
<tr>
<th>No.</th>
<th>Compound Name</th>
<th>Rpt Limit, mg/kg</th>
<th>Result, mg/kg</th>
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<tbody>
<tr>
<td>1</td>
<td>PNCB</td>
<td>0.1</td>
<td>ND</td>
</tr>
<tr>
<td>2</td>
<td>o,p'-DDD</td>
<td>0.1</td>
<td>ND</td>
</tr>
<tr>
<td>3</td>
<td>o,p'-DDE</td>
<td>0.1</td>
<td>ND</td>
</tr>
<tr>
<td>4</td>
<td>o,p'-DDT</td>
<td>0.1</td>
<td>ND</td>
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<tr>
<td>5</td>
<td>p,p'-DDD</td>
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<tr>
<td>6</td>
<td>p,p'-DDE</td>
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<td>ND</td>
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<td>7</td>
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<td>8</td>
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</tbody>
</table>
Hunan NutraMax Inc.

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