ESHA Research

ESHA Research was established in 1981 as one of the very first nutrition software solutions. Today, ESHA’s suite of nutritional software products, services, and databases are recognized as the industry’s top choice for food and supplement formulation, recipe development, labeling, nutritional analysis, and regulatory compliance.

**ESHA Solutions**
- Genesis R&D® Food Formulation
- Genesis R&D® Supplement Formulation
- Food Processor® Nutrition & Diet Analysis
- Consulting Services

Our mission is to help remove the complexity of product development and regulatory compliance for the food, beverage, and supplement industries through software, services, and nutritional databases.
Genesis R&D Foods

Genesis R&D Foods, first released in 1991, is designed to help users manage processes, overcome industry challenges, and meet federal requirements. Industry professionals use Genesis R&D for quick and accurate nutrient evaluation, virtual product development, nutrition labeling, and regulatory compliance.

- Product Development
- Formulation Analysis
- Menu Analysis
- Reporting
- Regulatory Compliance
Upcoming Webinars

February 17, 2021 | Genesis R&D Foods 101 – Part 2: Recipes
During this webinar, we walk through the process of entering recipe data in Genesis R&D, how to set the serving sizes, and identify how you can review your recipes for errors, using reports and other features.

During this webinar, we will provide an overview of the FDA’s ingredient statement requirements and demonstrate how to modify the automatically generated ingredient list in Genesis R&D. We will also discuss best practices and common mistakes.

April 14, 2021 | Genesis R&D Foods 101 – Part 4: Allergens
During this webinar, we will demonstrate how to modify your allergen statement and discuss best practices for compliance when working with the Allergen features in Genesis R&D.

To view archived webinars or sign up to receive notifications, visit: www.esha.com/news-events/webinars
Please Note!

✓ The webinar is being recorded
✓ All webinars available on our website
✓ Submit your questions in the GoToWebinar control panel
✓ We’ll email a copy of the recording and the slides following the webinar
What We’ll Cover Today

• Naming Conventions
• Nutrients to Consider and Data Entry
• Nutrient Calculator
• Check Data
• Groups, Attributes, and Designations
• Composite Ingredients
• Reports and Exporting
Nutrients of Note*

- Calories
- Fat
- Saturated Fat
- Trans Fat
- Cholesterol
- Sodium
- Total Carbohydrate
- Dietary Fiber – by FDA definition
- Total Sugars
- Added Sugars
- Protein
- Vitamin D
- Calcium
- Iron
- Potassium

*Be aware of the nutrients that you must report based on the country or countries for which you prepare labels.

**Nutrition Facts**

<table>
<thead>
<tr>
<th>Amount per serving</th>
<th>Serving size</th>
<th>1 slice (59g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>% Daily Value*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fat</td>
<td>6g</td>
<td>8%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>4g</td>
<td>20%</td>
</tr>
<tr>
<td>Trans Fat</td>
<td>0g</td>
<td>0%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>25mg</td>
<td>8%</td>
</tr>
<tr>
<td>Sodium</td>
<td>190mg</td>
<td>8%</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>30g</td>
<td>11%</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>1g</td>
<td>4%</td>
</tr>
<tr>
<td>Total Sugars</td>
<td>15g</td>
<td></td>
</tr>
<tr>
<td>Includes 14g Added Sugars</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>3g</td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
<td>0mcg</td>
<td>0%</td>
</tr>
<tr>
<td>Calcium</td>
<td>55mg</td>
<td>4%</td>
</tr>
<tr>
<td>Iron</td>
<td>2mg</td>
<td>10%</td>
</tr>
<tr>
<td>Potassium</td>
<td>1750mg</td>
<td>35%</td>
</tr>
</tbody>
</table>

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet.
Nutrients to View

• Sets of nutrients pertinent to your reports or needed for labels
• Genesis R&D includes several predetermined sets of nutrients
• Create as many new sets as you need
• Switch between the sets at any time
Nutrient Calculator

Assists in converting nutrients from one unit to another

- Carbohydrates
- U.S. Dietary Fiber fields
- Vitamin A
- Vitamin B3/Niacin, Tryptophan
- Vitamin D
- Vitamin E
- Folate/Folic Acid
- Salt, Sodium

How would you like to Calculate Vitamin A - RAE?

- Animal Source
  Vitamin A RAE (mcg) = Vitamin A IU (IU) / 3.33

- Plant Source
  Vitamin A RAE (mcg) = Vitamin A IU (IU) / 20

- Animal Source
  Vitamin A RAE (mcg) = Vitamin A RE (mcg)

- Plant Source
  Vitamin A RAE (mcg) = Vitamin A RE (mcg) / 2
Available Carbohydrates

• Available Carbohydrates is used to report Carbohydrates on EU and Mexico Labels
• Available Carbohydrates = Total Carbohydrates – Total Dietary Fiber
• ESHA Database items report Available Carbohydrates if the Total Dietary Fiber field is populated
  • FDA 2016 Dietary Fiber definition affects the reporting of Total Dietary Fiber
  • If a food or ingredient only reports Dietary Fiber (2016) per the 2016 definition and Total Dietary Fiber cannot be determined, then the Total Dietary Fiber field is blank

• When entering ingredients in your Genesis R&D, use the Nutrient Calculator tool to populate the Available Carbohydrates field
Ingredient – Spec Sheet Report

- Per 100g by default
- You can change that to a different amount
- Nutrients, ingredients, and allergen information per the Ingredient record
- Date, comments, and signature lines
- Print hard copy or to pdf for electronic copy

```
Nutrients Per:  100 gram

1 Cup = 244 g
```

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
<th>Unit</th>
<th>Nutrient</th>
<th>Amount</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>50.00</td>
<td>kcal</td>
<td>Folate, DFE</td>
<td>5.00</td>
<td>mcg</td>
</tr>
<tr>
<td>Calories from SatFat</td>
<td>11.31</td>
<td>kcal</td>
<td>Folic Acid</td>
<td>0</td>
<td>mcg</td>
</tr>
<tr>
<td>Fat</td>
<td>1.98</td>
<td>g</td>
<td>Vitamin B12</td>
<td>0.53</td>
<td>mcg</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>1.33</td>
<td>g</td>
<td>Biotin</td>
<td>2.00</td>
<td>mcg</td>
</tr>
<tr>
<td>Trans Fatty Acid</td>
<td>0.08</td>
<td>g</td>
<td>Pantothenic Acid</td>
<td>0.36</td>
<td>mg</td>
</tr>
<tr>
<td>Poly Fat</td>
<td>0.07</td>
<td>g</td>
<td>Sodium</td>
<td>47.00</td>
<td>mg</td>
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<tr>
<td>Mono Fat</td>
<td>0.56</td>
<td>g</td>
<td>Fluoride</td>
<td>0.00</td>
<td>mg</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>8.00</td>
<td>mg</td>
<td>Calcium</td>
<td>120.00</td>
<td>mg</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>4.80</td>
<td>g</td>
<td>Iron</td>
<td>0.02</td>
<td>mg</td>
</tr>
<tr>
<td>Dietary Fiber (2016)</td>
<td>0</td>
<td>g</td>
<td>Potassium</td>
<td>140.00</td>
<td>mg</td>
</tr>
<tr>
<td>Soluble Fiber (2016)</td>
<td>0</td>
<td>g</td>
<td>Phosphorus</td>
<td>92.00</td>
<td>mg</td>
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<tr>
<td>Insoluble Fiber (2016)</td>
<td>0</td>
<td>g</td>
<td>Iodine</td>
<td>24.00</td>
<td>mcg</td>
</tr>
<tr>
<td>Total Sugars</td>
<td>4.80</td>
<td>g</td>
<td>Magnesium</td>
<td>11.00</td>
<td>mg</td>
</tr>
<tr>
<td>Added Sugar</td>
<td>0</td>
<td>g</td>
<td>Zinc</td>
<td>0.48</td>
<td>mg</td>
</tr>
<tr>
<td>Protein</td>
<td>3.30</td>
<td>g</td>
<td>Selenium</td>
<td>2.50</td>
<td>mcg</td>
</tr>
</tbody>
</table>
Spreadsheet for Recipes

Complete and correct entry of Ingredients contributes to accurate and compliant recipe analysis and labels. Review the Spreadsheet report for ALL Recipes to ensure that required information is reported.

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Quantity</th>
<th>Measure</th>
<th>TransFat</th>
<th>Chol (mg)</th>
<th>Vit D-mcg (mcg)</th>
<th>Calc (mg)</th>
<th>Iron (mg)</th>
<th>Pot (mg)</th>
<th>Sod (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webinar Sodium Override</td>
<td>1 Serving</td>
<td></td>
<td>0</td>
<td>62.82</td>
<td>0</td>
<td>15.77</td>
<td>1.09</td>
<td>571.53</td>
<td>350.00</td>
</tr>
<tr>
<td>Sockeye salmon, wild, wild, wild,</td>
<td>3.12104</td>
<td>Ounce</td>
<td>0</td>
<td>62.82</td>
<td>0</td>
<td>13.27</td>
<td>0.91</td>
<td>555.56</td>
<td>49.56</td>
</tr>
<tr>
<td>Webinar Marinade</td>
<td>31.2104 Gram</td>
<td></td>
<td>0</td>
<td>0</td>
<td>2.50</td>
<td>0.18</td>
<td>15.87</td>
<td>356.72</td>
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</tr>
<tr>
<td>Soy sauce, tamari</td>
<td>0.022122 Cup</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.27</td>
<td>0.15</td>
<td>13.51</td>
<td>355.90</td>
</tr>
<tr>
<td>Water, municipal tap</td>
<td>0.08848 Cup</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0.63</td>
<td>0.21</td>
<td>0.63</td>
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<td></td>
</tr>
<tr>
<td>Sugar, brown</td>
<td>0.17698 Tablespoon</td>
<td></td>
<td>0</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td>--</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Ginger, ground</td>
<td>0.044246 Teaspoon</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0.09</td>
<td>0.02</td>
<td>1.05</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Garlic cloves, fresh</td>
<td>0.08849 Each</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0.48</td>
<td>0.00</td>
<td>1.06</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Starch, corn</td>
<td>0.17698 Tablespoon</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0.03</td>
<td>0.01</td>
<td>0.04</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Moisture Adjustment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.00%</td>
<td></td>
</tr>
<tr>
<td>Loss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Serving</td>
<td></td>
<td>0</td>
<td>62.82</td>
<td>0</td>
<td>15.77</td>
<td>1.09</td>
<td>571.53</td>
<td>350.00</td>
</tr>
</tbody>
</table>
Naming Conventions

- **Naturally Ordered Elements**: from general to specific detail of importance, e.g. Vanilla Extract Pure 2X

- **Upper vs Lower Case**: be consistent

- **Location**: ingredients/recipes intended for a specific region, should include a region code or abbreviation in the name to help you differentiate

- **Numbering**: use at least two-digits rather than one in order to maintain the numeric order. Include the zero for numbers 0-9 (e.g. 01, 02, 03)

- **Dates**: best practice, state dates beginning with the year: e.g. YYYYMMDD, YYYYMM, or YYYYQ1 - be consistent

- **User-Code**: use the User-Code field to help identify records
Audit Trail

• Turned off by default
• When enabled and a file is saved, records the date and user that made the save
• Useful piece of documentation as Ingredients and Recipes are modified
• Comment box to enter additional notes
Genesis R&D Training - Online

2-day Professional Training
This 2-day training session covers the fundamentals of the Genesis R&D Food program: creating ingredients, building recipes/formulas, nutrition analysis and reporting, labeling, and best practices. In addition, this session covers a comprehensive regulatory review.

1-day Advanced Training
This session covers advanced topics such as Advanced Labels, PDCAAS (protein digestibility score), range formulas, international labels, and much more. This session also covers a comprehensive regulatory review.

<table>
<thead>
<tr>
<th>2-day Professional Dates</th>
<th>1-day Advanced Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 23-24, 2021</td>
<td>February 25, 2021</td>
</tr>
<tr>
<td>March 23-24, 2021</td>
<td>March 26, 2021</td>
</tr>
</tbody>
</table>

Contact training@esha.com with any questions or to inquire about personalized training for your organization.
See the Training Schedule at: https://esha.com/news-events/training-schedule/
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