



WEBINAR



Genesis R&D 101

Part 2: Working with Recipes

Presented by **ESHA Research**

Wednesday, February 17, 2021

11:00 AM PDT | 1:00 PM CDT | 2:00 PM EDT



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



March 10, 2021 | Genesis R&D Foods 101 – Part 3: Ingredient Statements

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.

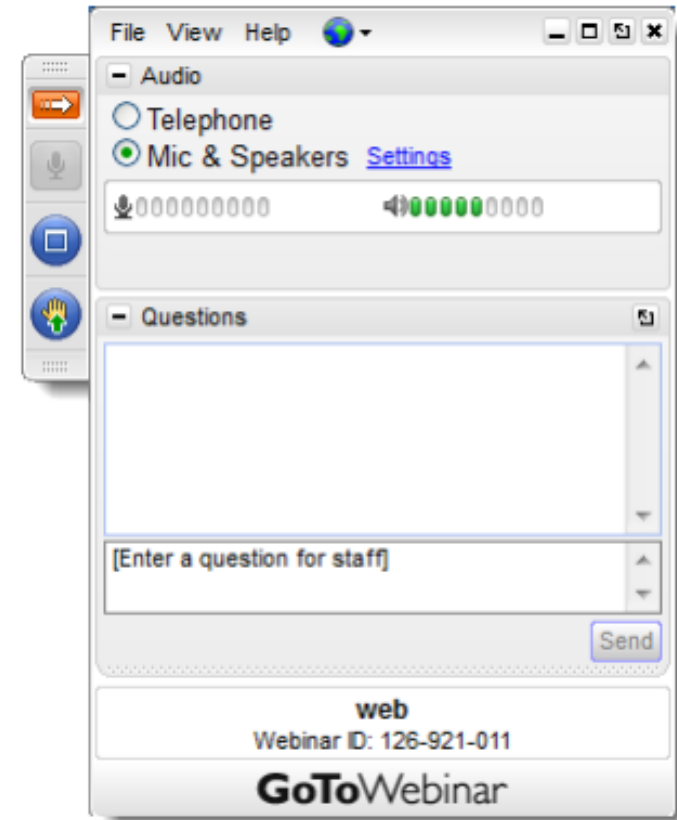
To view archived webinars or sign up to receive notifications, visit: www.esha.com/news-events/webinars



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

WEBINAR



What We'll Cover Today

- Entering Recipes in Genesis R&D
- Setting Serving Size and RACC
- Reviewing Recipes
- Take a Look at the Label
- Best Practices for Organizing and Documenting your Recipes
- Q&A





Recipes

Working with Recipes is one of the foundational functions of Genesis R&D

- Build Recipes from Ingredients
- Entering serving size
- View analyses in various reports and formats
- Create Nutrition Facts labels





Recipe Analysis

- Enter your supplier ingredients or use ESHA Database items
- Select ingredients that most accurately represent your finished product
- Consider processes in the preparation of the food that might affect the nutritional content of the finished product
- Batch size – any size, large or small
 - Standard batch per your manufacturing
 - Per serving
 - By Percent of ingredients: 100g = 100%

Nutrition Facts

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

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





Serving Size & RACC

- Reference Amounts Customarily Consumed
- 21 CFR 101.12
- Updated for 2016 labeling
- Identify the RACC Product Category that best describes your product
- Use the RACC as the basis to determine your serving size
- Your serving size may or may not exactly match the RACC

TABLE 2—REFERENCE AMOUNTS CUSTOMARILY CONSUMED PER EATING OCCASION: GENERAL FOOD SUPPLY¹²³

Product category	Reference amount	Label statement ⁴
Bakery Products:		
Bagels, toaster pastries, muffins (excluding English muffins)	110 g	_piece(s) (_g)
Biscuits, croissants, tortillas, soft bread sticks, soft pretzels, corn bread, hush puppies, scones, crumpets, English muffins	55 g	_piece(s) (_g)
Breads (excluding sweet quick type), rolls	50 g	_piece(s) (_g) for sliced bread and distinct pieces (e.g., rolls); 2 oz (56 g/ _inch slice) for unsliced bread
Bread sticks—see crackers		
Toaster pastries—see bagels, toaster pastries, muffins (excluding English muffins)		
Brownies	40 g	_piece(s) (_g) for distinct pieces; fractional slice (_g) for bulk
Cakes, heavyweight (cheese cake; pineapple upside-down cake; fruit, nut, and vegetable cakes with more than or equal to 35 percent of the finished weight as fruit, nuts, or vegetables or any of these combinations) ⁵	125 g	_piece(s) (_g) for distinct pieces (e.g., sliced or individually packaged products); _fractional slice (_g) for large discrete units
Cakes, mediumweight (chemically leavened cake with or without icing or filling except those classified as light weight cake; fruit, nut, and vegetable cake with less than 35 percent of the	80 g	_piece(s) (_g) for distinct pieces (e.g., cupcake); _fractional slice (_g) for large discrete units



Adjustments

- Fine-tune analyses
- Moisture Adjustment
 - Loss or Target
- Nutrient Override
 - From lab analysis or known factors

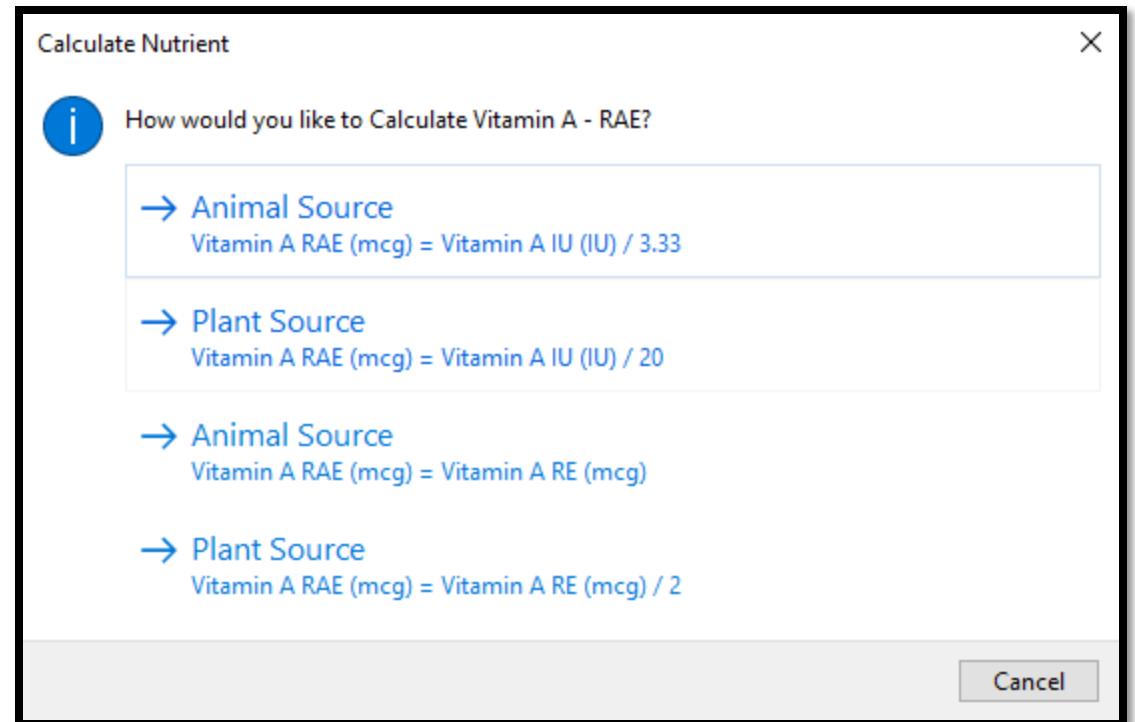




Nutrient Calculator

Assists in converting nutrients from one unit to another

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





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





Dietary Fiber

Total Dietary Fiber

- Used for general entry of dietary fiber
- Used to calculate Available Carbohydrates
- Used on labels that are not U.S. 2016

Dietary Fiber (2016)

- Used specifically for U.S. 2016 label per FDA beneficial dietary fiber definition

Recipe Information

Selected Nutrients to View: Label - US 2016 Mandatory
*%DV based on US Label 2016 standards.
Nutrient values based on 56.00 grams

Nutrients	Value	% DV*	Override
Carbohydrates (g)	43.80	15.93	
Carbohydrate (Available) (g)	42.09		
Starch (g)	0		
Total Dietary Fiber (g)	1.71		
Total Soluble Fiber (g)	0.51		
Total Insoluble Fiber (g)	0.82		
Dietary Fiber (2016) (g)	1.71	6.10	
Soluble Fiber (2016) (g)	0.51		
Insoluble Fiber (2016) (g)	0.82		
Non-digestible Carbohydrate (g)	0		
Soluble Non-digestible Carbohydrate (g)	0		
Insoluble Non-digestible Carbohydrate (g)	0		
Total Sugars (g)	5.75		
Added Sugar (g)	5.62	11.24	



Check Data

- Use as part of your standard review of Recipes
- Compares estimated/calculated values to data as entered
- Does not indicate compliance or non-compliance, but serves as helpful feedback

Check Components

Tolerances
5 % Use this percentage when checking if Estimated values exceed Actual values

Calories estimated using 4-4-9-7

Calories Estimated	130.60	Protein	14.55	Carbs	112.64	Fat	3.41	Alcohol	0
Calories Entered	132.23								

%Difference	1.23							<input checked="" type="checkbox"/> Interpret missing values as 0	

Total Fat estimated by summing components

Total Fat	0.26	Saturated	0.06	Mono	0.07	Poly	0.13	Trans	0
Total Fat Entered	0.38								

%Difference	32.59							<input type="checkbox"/> Interpret missing values as 0	

Weight estimated by summing components

Weight Estimated	36.00	Protein	3.64	Carbs	28.16	Fat	0.38	Alcohol	0
Weight Entered	36.00	Water	3.60	Ash	0.23				

%Difference	0.01							<input checked="" type="checkbox"/> Interpret missing values as 0	

Carbohydrate

Carbohydrate Available (27.06) = Carbohydrate (28.16) - Dietary Fiber (1.10)

%Difference	0							<input checked="" type="checkbox"/> Interpret missing values as 0	
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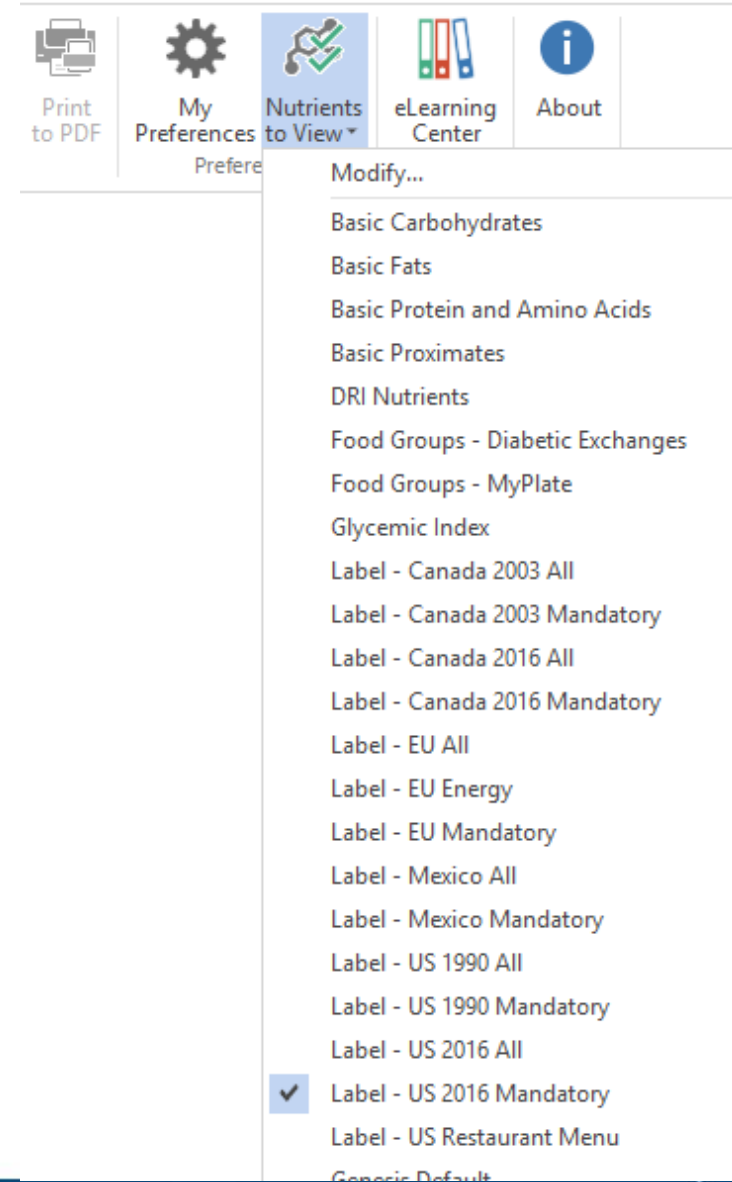
Review the Spreadsheet Report

Item Name	Quantity	Measure	Cals (kcal)	Prot (g)	Carb (g)	TotFib (g)	Fib(16) (g)	Sugar (g)	SugAdd (g)	Fat (g)	Sa
Gluten Free Bread	1	Serving	217.88	4.79	35.96	1.55	0.19	4.35	3.24	5.96	
flour, baking, gluten free	38.1807	Gram	134.15	2.06	30.96	1.03	-	0	0	0	
water, distilled	15.2865	Gram	0	0	0	0	0	0	0	0	
egg, raw	12.8928	Gram	18.44	1.62	0.09	0	0	0.05	0	1.23	
butter, unsalted	4.8822	Gram	35.01	0.04	0.00	0	0	0.00	0	3.96	
sugar, white, granulated	3.2469	Gram	12.57	0	3.25	0	0	3.24	3.24	0	
powdered milk, whole	2.7492	Gram	13.64	0.72	1.06	0	0	1.06	0	0.73	
yeast, dry, instant, food service	0.6873	Gram	2.65	0.31	0.27	0.19	0.19	0	0	0.04	
salt, table	0.6478	Gram	0	0	0	0	0	0	0	0	
gum, xanthan, Novaxan, 200 granular	0.4266	Gram	1.43	0.03	0.33	0.33	-	0	0	0.00	
Total	1	Serving	217.88	4.79	35.96	1.55	0.19	4.35	3.24	5.96	

- 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.
- Identify missing values (indicated by dashes) and populate the nutrient field(s) in the **Ingredient record** to fill in the blanks.

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





Groups in Genesis R&D

- Help organize data
- Select from existing Groups or create your own
- Can assign an ingredient or a recipe to multiple Groups
- MyPreferences: to always assign new items to Group(s)

Recipe Information

Recipe

Nutrients

Measures

Brix Calculation

Cost

Groups

Attributes

Compare To

Preparation Method

Reference Amount

Nutrient Content Claims

Notes

HACCP

Attachments

Characteristics

- Dairy Free
- Gluten Free
- Kosher
- Organic
- Vegan
- Vegetarian/Lactovo

Databases

- Alcoholic Drinks
- Asian
- Baking Ingredients
- Beverages
- Bread & Bakery
- Breakfast Foods
- Candy
- Canned Foods
- Children's
- Condiments & Sauces
- Dairy Products & Subs
- Desserts
- Dishes & Prepared Foods
- Dried Foods
- Dry Mixes
- Egg Products & Subs
- Ethnic Foods

Reports



Single Nutrient: Bread *

Item Name	Quantity	Measure	Cals (kcal)	Percent
flour, all purpose, white, unbleached, enriched	19.6	Gram	71.34	87.18%
sugar, white, granulated	2.24	Gram	8.67	10.59%
yeast, bakers, dry	0.56	Gram	1.82	2.22%
	23.5832	Gram	0	0%

Multi Column: Bread *

Nutrients	Per Serving	Per 100g	Rcmd	%Rec
Calories (kcal)	205.69	367.30		
Calories from SatFat (kcal)	0.81	1.45		
Fat (g)	0.59	1.05	78.00	0.76%
Saturated Fat (g)	0.09	0.16	20.00	0.45%
Trans Fatty Acid (g)	0	0		
Mono Fat (g)	0.20	0.36		
Cholesterol (mg)	0.10	0.18		
Carbohydrates (g)				
Dietary Fiber (2016) (g)				
Soluble Fiber (g)				
Inse				

Nutrients

Nutrients	Per Serving	Per 100g	Rcmd	%Rec
Folate, DFE (mcg DFE)	176.30	314.82	400.00	44.07%
Folic Acid (mcg)	75.87	135.48		
Vitamin B12 (mcg)	0.00	0.00	2.40	0.04%
Biotin (mcg)	0.50	0.90	30.00	1.68%
	0.41	0.72	5.00	8.12%
	18.13	0.00	2300.00	0.79%
	0.00	32.37		
	7.88	14.07	1300.00	0.61%
	2.32	4.14	18.00	12.89%
	6.27	118.34	4700.00	1.41%
	17	111.02	1250.00	4.97%
	0	0	150.00	0%
	20.71	420.00		
	0.82	11.00	2.76%	
	30.08	55.00	30.63%	
	0.14	0.90	8.61%	
	0.61	2.30		

ESHA Research, Inc.
Bread *

Date: 2021.02.08
Nutrients Per: 100 gram
Measure: 1 Serving = 56 g, 1 Slice = 28 g

Nutrient	Amount	Unit	Nutrient	Amount	Unit
Calories	367.30	kcal	Folate, DFE	314.82	mcg DFE
Calories from SatFat	1.45	kcal	Folic Acid	135.48	mcg

Bread
02/08/2021

Nutrition Facts
12 servings per container
Serving size 2 slices (56g)

Amount per serving	% Daily Value*
Calories 210	
Total Fat 0.5g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 20mg	1%
Total Carbohydrate 44g	16%
Dietary Fiber 2g	7%
Total Sugars 6g	
Includes 6g Added Sugars	12%
Protein 6g	
Vitamin D 0mcg	0%

INGREDIENTS: Water, All Purpose Unbleached Flour (Wheat Flour, Malted Barley Flour, Niacin (Vitamin B3), Iron, Thiamin (Vitamin B1), Riboflavin (Vitamin B2), Folic Acid), Sugar, Yeast, Salt.

Contains Wheat.

OU-D

Spreadsheet: Bread *

Item Name	Quantity	Measure	Cals (kcal)	SatCals (kcal)	Fat (g)	SatFat (g)	TransFat (g)	PolyFat (g)
Bread	1	Serving	205.69	0.81	0.59	0.09	0	0
flour, all purpose, white, unbleached, enriched	49.265	Gram	179.32	0.69	0.48	0.08	0	0
Water	84.4121	Gram	0	0	0	0	0	0
sugar, white, granulated	5.63029	Gram	21.79	0	0	0	0	0
yeast, bakers, active, dry	1.40757	Gram	4.57	0.13	0.11	0.01	0	0
salt, table	0.042227	Gram	0	0	0	0	0	0



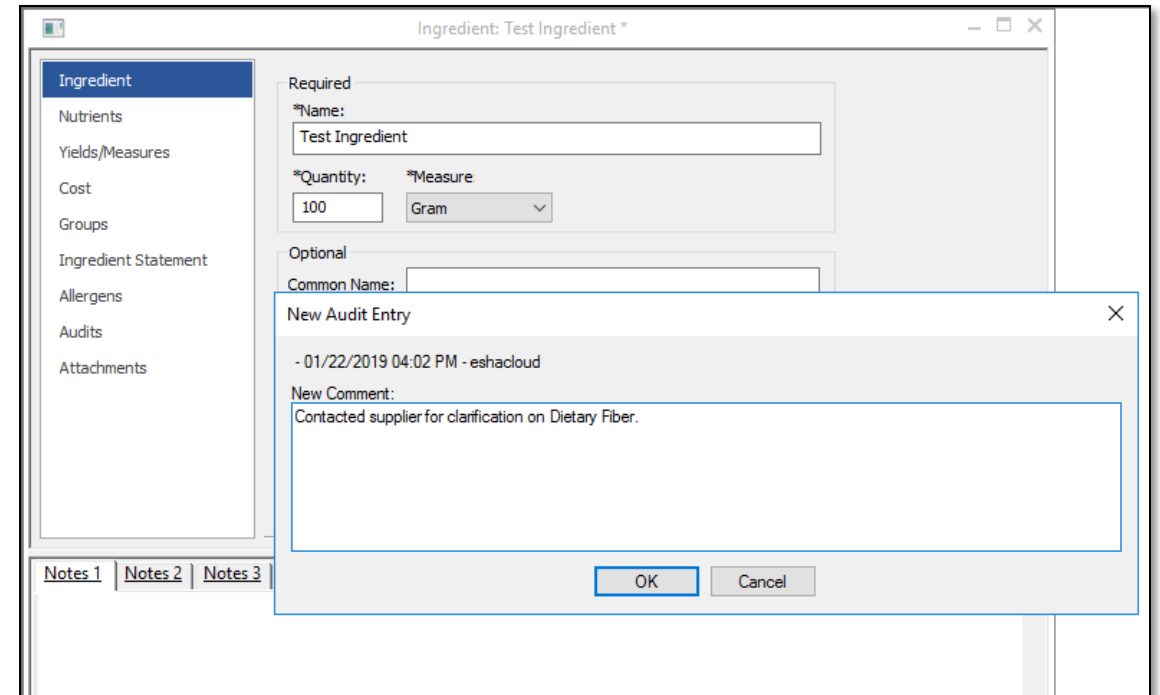
Best Practices for Documentation

- Take a snapshot in time
- Keep records of final recipe, analysis, and label used on packaging
 - Recipe
 - Spreadsheet with minimum of label nutrients – additional may be desirable
 - Label
- Use Groups to save and sort versions of Recipes
- Print to pdf in Genesis R&D to capture records
- Save pdf and attach to your Recipe



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.

2-day Professional Dates	1-day Advanced Dates
February 23-24, 2021	February 25, 2021
March 23-24, 2021	March 26, 2021
April 20-21 – USDA Focused	n/a
May 11-12, 2021	May 13, 2021

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/>

QUESTIONS?



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