



WEBINAR



**Calculating PDCAAS for %DV Protein
Genesis R&D®**



Presented by ESHA Research

Wednesday, August 14, 2019

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

Top Genesis R&D User Q&A's | September 25, 2019

Taken from user feedback, this session covers the most common questions we get from users about working with the software. In addition we will cover questions you ask during registration and during the live session.

Menu Labeling Practical Applications and Best Practices in Genesis R&D | October 23, 2019

Genesis R&D takes the hassle out of complying with the FDA's menu labeling regulations. During this webinar, we will walk you through using the Menu Label Module to evaluate and display calories and nutrition content for your menu items. We will also discuss best practices for meeting the regulatory requirements.

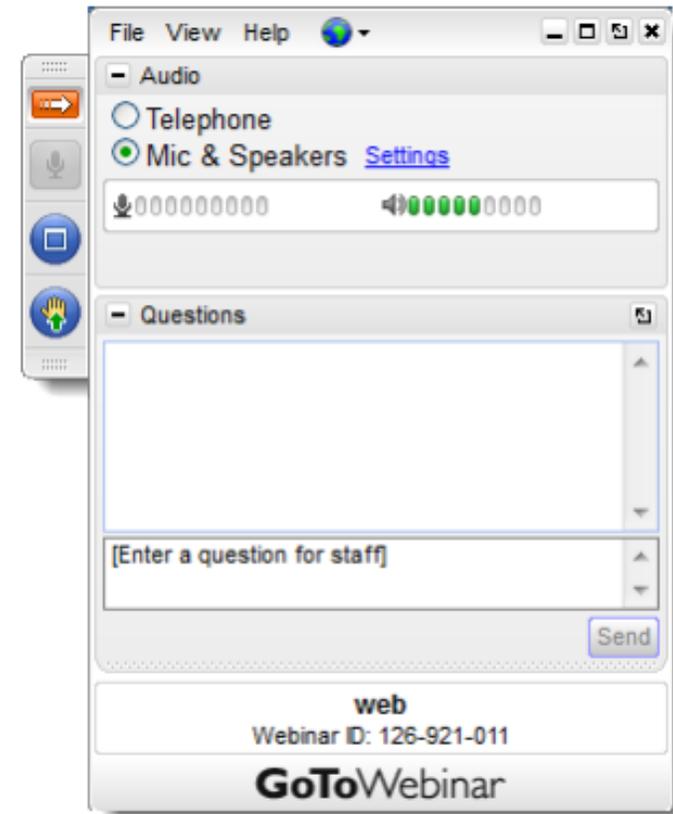
To register or view archived webinars please visit: www.esha.com/news-events/webinars



Please Note!

- ✓ The webinar is being recorded
- ✓ All webinars available on our website
- ✓ Submit your questions in the GoToWebinar control panel

WEBINAR



What we'll cover today

- %DV Protein on Nutrition Facts Label
- U.S. Labeling Regulations for Protein
- Protein and Amino Acids
- Calculating PDCAAS
- How to Display %DV on Nutrition Facts Label in Genesis R&D
- Q&A



ATTENDEE POLL



What method do you *primarily* use to determine PDCAAS?

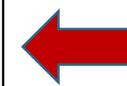


%DV Protein on U.S. Nutrition Facts Label



Nutrition Facts	
Serving size	10 fl oz (300 mL)
Amount per serving	
Calories	70
	% Daily Value*
Total Fat 1.5g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 9g	3%
Dietary Fiber 2g	7%
Total Sugars 7g	
Includes 4g Added Sugars	8%
Protein 5g	6%
Vitamin D 0mcg	0%
Calcium 18mg	2%
Iron 1mg	6%
Potassium 66mg	2%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.



%DV for Protein mandatory in some cases, voluntary in others

An additional factor is required to calculate %DV



U.S. Labeling Regulations for Protein

U.S. labeling regulations

Per the CFR you must report %DV for Protein:

- On product labels for infants (age 0 – 12 months)
- On product labels for children (age 1 – 3 years)
- On products that make a claim about protein – includes adult labels (ages 4+)





Protein Daily Reference Value & %DV

- Protein Dietary Reference Value (DRV) for U.S. adults = **50g**
- %DV is *not necessarily*: Protein g / DRV for protein
- The %DV for protein on the U.S. label factors in the digestibility of the protein
- Protein digestibility essentially means how our bodies access and use the protein provided by the foods we consume



PER vs PDCAAS

The CFR indicates that we use a PER or PDCAAS to report the %DV for Protein on the label

- **PER (Protein Efficiency Ratio)**
 - Lab determined value
 - Used for infant labels (age 0 – 12 months)
 - Value of 0 – 2.5
- **PDCAAS (Protein Digestibility Corrected Amino Acid Score)**
 - Lab determined value or can be calculated
 - Used for child (age 1 – 3 years) and adult (age 4+ years) labels
 - Value of 0 – 1

PDCAAS Source from the CFR 101.9(c)(7)(ii): *The protein digestibility-corrected amino acid score shall be determined by methods given in sections 5.4.1, 7.2.1, and 8.00 in "Protein Quality Evaluation, Report of the Joint FAO/WHO Expert Consultation on Protein Quality Evaluation," Rome, 1990* http://apps.who.int/iris/bitstream/10665/38133/1/9251030979_eng.pdf

Protein

- Energy
- Necessary for creating, supporting, and maintaining structure within cells
- Necessary for building and repairing tissue
- Hormone production
- Enzymes



Sources of Protein

Protein comes from a variety of animal- and plant-based sources

- Meat, poultry, fish, eggs, milk, soybeans, quinoa
- Combinations of plant protein sources



Amino Acids

- Referred to as the “building blocks” of protein
- Our bodies can make/synthesize some amino acids
- Amino acids that our bodies cannot make must be obtained from outside sources, e.g. by eating food
 - Known as Essential Amino Acids aka indispensable
 - 9 essential amino acids
 - Cystine and Tyrosine also get special billing as complementary and considered necessary in some conditions and for some age groups





Complete vs. Incomplete Protein

- A complete protein contains all nine essential amino acids in the correct proportions our bodies need
- An incomplete protein does not have enough of one or more of the essential amino acids
- A food can contain complete protein (all amino acids meet or exceed their respective ratios), but due to digestibility factor(s), it can still have a PDCAAS of <1



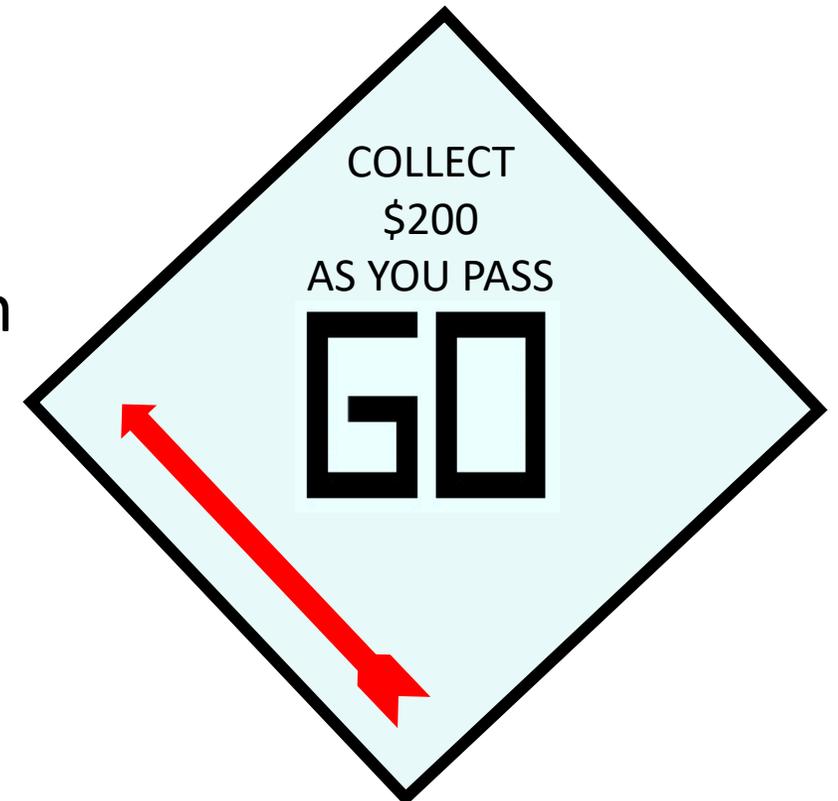
Protein Digestibility Factors

- Referred to as a percent or as value: 79% = .79 factor
- For a plain ingredient use one protein digestibility factor
- When calculating PDCAAS for a combination food, must account for the various digestibility factors of the individual ingredients



Determining PDCAAS

- If all your protein comes from one ingredient or from one source (e.g. pea protein in multiple ingredients), and you have the PDCAAS for your protein, enter the PDCAAS in Genesis R&D.
- If your protein comes from multiple ingredients and multiple sources of protein, determine PDCAAS from:
 - Lab analysis
 - Calculation





Calculations Needed for PDCAAS

PDCAAS = (amino acid score X recipe protein digestibility)

Recipe Protein Digestibility = [(percent ingredient1 protein in recipe x ingredient1 protein digestibility) + (percent ingredient2 protein in recipe x ingredient2 protein digestibility) + ...]

Recipe Protein Digestibility: weighted protein digestibility, factoring in the contributions of each ingredient to the total protein and each ingredient's individual protein digestibility

Calculate PDCAAS – Gather this Information



1. Amino acid data
2. Percent Protein for each ingredient
3. Protein Digestibility Factors
4. Amino Acid Score
5. Recipe Protein Digestibility

Amino Acids - View the Spreadsheet Report



Item Name	Quantity	Measure	Wgt (g)	Cals (kcal)	Prot (g)	Ala (g)	Arg (g)	Asp (g)	Cys (g)	Glu (g)	Gly (g)	His (g)	Iso (g)	Leu (g)	Lys (g)	Met (g)	Phe (g)	Pro (g)	Ser (g)	Thr (g)	Trp (g)	Tyr (g)	Val (g)				
PDCAAS Example Apple Cinnamon Protein Bars	1 Serving		40.00	113.51	9.54	0.45	0.68	0.99	0.17	1.86	0.41	0.23	0.45	0.74	0.52	0.18	0.51	0.49	0.50	0.35	0.12	0.34	0.50				
oats, rolled, dry	15.9509	Gram	15.95	62.05	2.69	0.14	0.19	0.23	0.07	0.59	0.13	0.06	0.11	0.20	0.11	0.05	0.14	0.15	0.12	0.09	0.04	0.09	0.15				
protein isolate, soy	4.90798	Gram	4.91	16.44	4.33	0.18	0.33	0.50	0.05	0.86	0.18	0.11	0.21	0.33	0.26	0.06	0.23	0.24	0.23	0.15	0.05	0.16	0.20				
baking powder, double acting, straight phosphate	0.408998	Gram	0.41	0.21	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
brown rice syrup	2.04499	Gram	2.04	6.97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
egg white, dried	2.45399	Gram	2.45	9.37	1.99	0.11	0.11	0.20	0.05	0.26	0.07	0.04	0.11	0.17	0.14	0.07	0.12	0.08	0.14	0.09	0.02	0.08	0.13				
water, distilled	4.08998	Gram	4.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
cinnamon, ground SPM	0.327198	Gram	0.33	1.16	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
almonds, slivered	2.45399	Gram	2.45	14.21	0.52	0.02	0.06	0.06	0.00	0.14	0.03	0.01	0.02	0.03	0.01	0.00	0.03	0.02	0.02	0.01	0.00	0.01	0.02				
applesauce, unsweetened	7.36196	Gram	7.36	3.09	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Total	1 Serving		40.00	113.51	9.54	0.45	0.68	0.99	0.17	1.86	0.41	0.23	0.45	0.74	0.52	0.18	0.51	0.49	0.50	0.35	0.12	0.34	0.50				
% Recommendation (US Label Adult (2016))					19.08																						

- Need amino acid data for ingredients that contribute to the total protein of your Recipe
 - Request this from your suppliers or refer to items in the ESHA database that reference the USDA SR database.
 - You do not need amino acid data for ingredients that contain zero protein.
- Nutrients to View – Basic Protein and Amino Acids



Percent Protein from Each Ingredient

Item Name	Quantity	Measure	Prot (g)	Percent	0	25	50
protein isolate, soy	4.90798	Gram	4.33	45.44%	[Red bar]		
oats, rolled, dry	15.9509	Gram	2.69	28.24%	[Red bar]		
egg white, dried	2.45399	Gram	1.99	20.86%	[Red bar]		
almonds, slivered	2.45399	Gram	0.52	5.44%	[Red bar]		
baking powder, double acting, straight phosphate	0.408998	Gram	0.00	0.00%	[No bar]		
applesauce, unsweetened	7.36196	Gram	0.00	0.00%	[No bar]		
brown rice syrup	2.04499	Gram	0	0%	[No bar]		
water, distilled	4.08998	Gram	0	0%	[No bar]		
cinnamon, ground SPM	0.327198	Gram	0	0%	[No bar]		
PDCAAS Example Apple							
Cinnamon Protein Bars			9.54				
Total							

- View the **Single Nutrient report** in Genesis R&D set to Protein to identify the % protein that each ingredient contributes to the total protein
- Some ingredients will contribute zero

Protein Digestibility Factors

- If protein digestibility is not reported by ingredient supplier, then request from the supplier
- If supplier cannot provide protein digestibility, then your organization needs to determine the protocol for filling in blanks
- Obtain general protein digestibility factors from reputable sources and specific research articles
 - FAO/WHO references
 - ESHA maintains a list
- If encountering different factors for one ingredient, consider the form of your ingredient and the source that best supports your ingredients

esha RESEARCH
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PDCAAS & PROTEIN DIGESTIBILITY OF FOODS*

Food	PDCAAS	Protein Digestibility	Source
almonds		0.88	15
amaranth	0.2994	0.721	20
apple	0.52		4
barley		0.9	27
baru almond	0.566	0.7548	5
beans			
beans, black	0.53	0.7	14
beans, black, pressure cooked	0.53	0.72	3
beans, broad		0.87	27
beans, brown, cooked		0.79	27
beans, butter		0.57	27
beans, faba, pressure cooked	0.47	0.86	3
beans, haricot		0.71	27
beans, lima		0.78	27
beans, kidney	0.55	0.786	14
beans, kidney, canned	0.68	0.81	3
beans, kidney, white		0.78	27
beans, navy	0.67	0.8	14
beans, pinto	0.59	0.762	14
beans, pinto, canned	0.69	0.73	3
beans, pinto, pressure cooked	0.62	0.8	3
beans, red		0.78	27
beans, seafarer, pressure cooked	0.7	0.84	3
beans, snap, frozen		0.82	27
beans, sugar		0.69	27
beans, sugar, speckled		0.78	27
beans, sugar, spotted		0.81	27
beans, velvet		0.68	27
beef	0.92	0.98	3
beef, ground, lowfat		0.91	27

A list of PDCAAS and protein digestibility citations is available at www.esha.com/pdcaas-protein-digestibility-list



Amino Acid Score - Protein Quality Report

- Essential (indispensible) Amino Acids
- Score – shows a score for each amino acid
 - The amino acid reporting the lowest score, gives us the amino acid score for the Recipe
 - If there is an amino acid showing <100%, this indicates an incomplete protein
- Actual Ratio
 - Each Amino Acid (mg) per Protein (g)
- Ideal Ratio (for U.S. labeling purposes)
 - 1985 FAO/WHO/UNU suggested pattern of amino acid requirements of a 2- to 5-year-old child

Number of Servings: 12.22 (40 g per serving)			
Weight: 489 g			
Amino Acid	Actual Ratio	Ideal Ratio	Score
Histidine	24.11 ÷	19	= 126%
Isoleucine	47.17 ÷	28	= 168%
Leucine	77.57 ÷	66	= 117%
Lysine	54.51 ÷	58	= 93%
Methionine + Cystine	36.69 ÷	25	= 146%
Phenylalanine + Tyrosine	89.1 ÷	63	= 141%
Threonine	36.69 ÷	34	= 107%
Tryptophan	12.58 ÷	11	= 114%
Valine	52.41 ÷	35	= 149%



Recipe Protein Digestibility

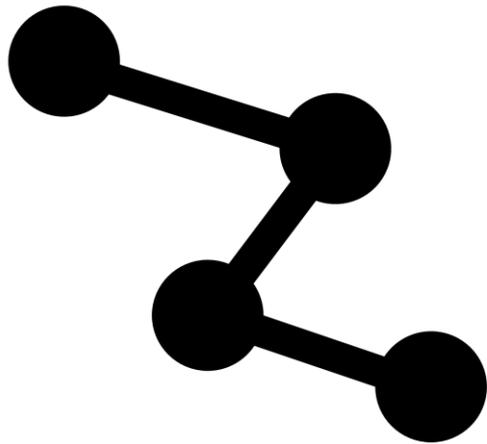
Recipe Protein Digestibility =

(percent ingredient1 protein in recipe X ingredient1 protein digestibility)
+ (percent ingredient2 protein in recipe X ingredient2 protein digestibility)
+ (percent ingredient3 protein in recipe X ingredient3 protein digestibility)
and so on...

For each ingredient:

- **Percent ingredient protein in recipe:** from the Single Nutrient report
- **Ingredient protein digestibility:** from a protein digestibility reference

Example Recipe



Recipe: PDCAAS Example App... x

Recipe: PDCAAS Example Apple Cinnamon Protein Bars

Search [Number of Servings:](#) 12.22 (40 g per serving)
Weight: 489.00 g

[Advanced Search...](#)

Item Name	Quantity	Measure	ESHA Code	% Weight	Gov. Code	Product
oats, rolled, dry	195	Gram		39.88		AmGrains
applesauce, unsweetened	90	Gram		18.40		LFG
protein isolate, soy	60	Gram	7517	12.27	16122	USDA
water, distilled	50	Gram	90073	10.22		Research
egg white, dried	30	Gram	19609	6.13	1173	USDA
almonds, slivered	30	Gram	4503	6.13	12061	USDA
brown rice syrup	25	Gram		5.11		Sweet Stuff
baking powder, double acting, straight phosphate	5	Gram	28046	1.02	18370	USDA
cinnamon, ground SPM	4	Gram		0.82		

Example Recipe – Spreadsheet: Amino Acids



Item Name	Quantity	Measure	Wgt (g)	Cals (kcal)	Prot (g)	Ala (g)	Arg (g)	Asp (g)	Cys (g)	Glu (g)	Gly (g)	His (g)	Iso (g)	Leu (g)	Lys (g)	Met (g)	Phe (g)	Pro (g)	Ser (g)	Thr (g)	Trp (g)	Tyr (g)	Val (g)			
PDCAAS Example Apple Cinnamon Protein Bars	1 Serving		40.00	113.51	9.54	0.45	0.68	0.99	0.17	1.86	0.41	0.23	0.45	0.74	0.52	0.18	0.51	0.49	0.50	0.35	0.12	0.34	0.50			
oats, rolled, dry	15.9509	Gram	15.95	62.05	2.69	0.14	0.19	0.23	0.07	0.59	0.13	0.06	0.11	0.20	0.11	0.05	0.14	0.15	0.12	0.09	0.04	0.09	0.15			
protein isolate, soy	4.90798	Gram	4.91	16.44	4.33	0.18	0.33	0.50	0.05	0.86	0.18	0.11	0.21	0.33	0.26	0.06	0.23	0.24	0.23	0.15	0.05	0.16	0.20			
baking powder, double acting, straight phosphate	0.408998	Gram	0.41	0.21	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
brown rice syrup	2.04499	Gram	2.04	6.97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
egg white, dried	2.45399	Gram	2.45	9.37	1.99	0.11	0.11	0.20	0.05	0.26	0.07	0.04	0.11	0.17	0.14	0.07	0.12	0.08	0.14	0.09	0.02	0.08	0.13			
water, distilled	4.08998	Gram	4.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
cinnamon, ground SPM	0.327198	Gram	0.33	1.16	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
almonds, slivered	2.45399	Gram	2.45	14.21	0.52	0.02	0.06	0.06	0.00	0.14	0.03	0.01	0.02	0.03	0.01	0.00	0.03	0.02	0.02	0.01	0.00	0.01	0.02			
applesauce, unsweetened	7.36196	Gram	7.36	3.09	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total	1 Serving		40.00	113.51	9.54	0.45	0.68	0.99	0.17	1.86	0.41	0.23	0.45	0.74	0.52	0.18	0.51	0.49	0.50	0.35	0.12	0.34	0.50			
% Recommendation (US Label Adult (2016))					19.08																					

- Nutrients to View – Basic Protein and Amino Acids
- Review the Spreadsheet to ensure no dashes in essential amino acids



Example Recipe - Percent Protein

Item Name	Quantity	Measure	Prot (g)	Percent	0	25	50
protein isolate, soy	4.90798	Gram	4.33	45.44%			
oats, rolled, dry	15.9509	Gram	2.69	28.24%			
egg white, dried	2.45399	Gram	1.99	20.86%			
almonds, slivered	2.45399	Gram	0.52	5.44%			
baking powder, double acting, straight phosphate	0.408998	Gram	0.00	0.00%			
applesauce, unsweetened	7.36196	Gram	0.00	0.00%			
brown rice syrup	2.04499	Gram	0	0%			
water, distilled	4.08998	Gram	0	0%			
cinnamon, ground SPM	0.327198	Gram	0	0%			
PDCAAS Example Apple							
Cinnamon Protein Bars			9.54				
Total							

- View the **Single Nutrient report** in Genesis R&D set to Protein to identify the % protein that each ingredient contributes to the total protein
- Some ingredients contribute zero percent protein by nature or because the ingredients occur in minimal amounts per serving

Protein Digestibility Factors

Food	PDCAAS	Protein Digestibility	Source
oats, sugared flakes		0.67	27
oat, flakes		0.7	27
oat, extruded oat/wheat		0.76	27
oat cereal		0.89	27
oats, quick		0.82	27
oats, oatmeal		0.9	27
oats, rolled	0.57	0.91	3
pea flour	0.69	0.88	3
pea protein concentrate	0.73	0.92	3
peanut	0.693	0.9114	5
peanut butter		0.98	3
peanut flour		0.93	27
peanut meal	0.52	0.94	3
peas	0.69		4

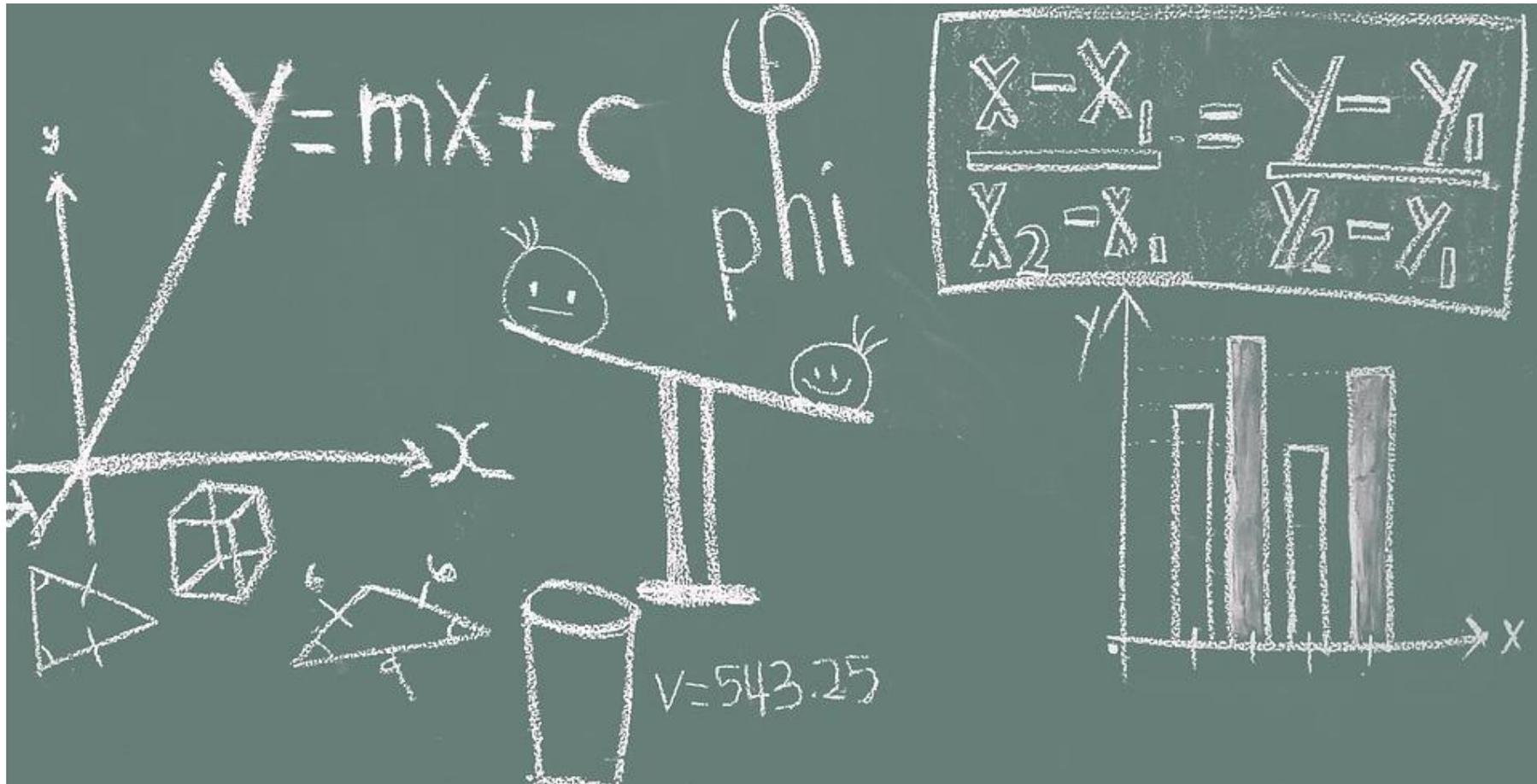


Example Recipe - Record Percent Total Protein and Digestibility Factors

Identify the percent that each ingredient contributes to the total protein (Single Nutrient report) and the Protein Digestibility factor for each ingredient that contributes to total protein (from a reliable source)

Ingredient	Percent Protein	Digestibility Factor
Soy Protein Isolate	45.44	.98
Oats	28.24	.91
Egg White	20.86	1
Almonds	5.44	.88

Let's Do Some Math!!!





Example Recipe - Recipe Protein Digestibility

- Recipe Protein Digestibility

Multiply each ingredient's % total protein X its respective digestibility factor

Ingredient	Percent Protein expressed as decimal		Digestibility Factor	Ingredient Digestibility
Soy Protein Isolate	.4544	X	.98	= .4453
Oats	.2824	X	.91	= .2570
Egg Whites	.2086	X	1	= .2086
Almonds	.0544	X	.88	= .0479

- Add the ingredient digestibilities:

$$.4453 + .2570 + .2086 + .0479 = .9588$$

$$\text{Recipe Protein Digestibility} = .9588$$

Recipe Protein Digestibility can be >1



Example Recipe - Amino Acid Score

- Limiting amino acid (from Protein Quality report) for this recipe is Lysine at 93% or .93

Number of Servings: 12.22 (40 g per serving) Weight: 489 g			
Amino Acid	Actual Ratio	Ideal Ratio	Score
Histidine	24.11	19	126%
Isoleucine	47.17	28	168%
Leucine	77.57	66	117%
Lysine	54.51	58	93%
Methionine + Cystine	36.69	25	146%
Phenylalanine + Tyrosine	89.1	63	141%
Threonine	36.69	34	107%
Tryptophan	12.58	11	114%
Valine	52.41	35	149%



Example Recipe - Calculating PDCAAS

- PDCAAS = Amino Acid Score X Recipe Protein Digestibility
- Amino Acid Score = .93 from Lysine
 - From Protein Quality report
- Recipe Protein Digestibility = .9588
- $.93 \times .9588 =$
- PDCAAS = $.93 \times .9588 = .8917$
 - Enter this in Genesis R&D 
 - If PDCAAS calculates to >1 , enter 1





How to Display %DV on Label in Genesis R&D

- Open Recipe
- View Label
- Edit Label
 - Nutrient Options
 - Protein
 - Enter PDCAAS
 - Show Percent DV Protein

The screenshot shows the 'Edit Label' window in the Genesis R&D software. The 'Label Settings' panel is open, and the 'Nutrient Options' tab is selected. The 'Protein' nutrient is highlighted in blue. The 'Show Percent DV Protein' checkbox is checked, and the 'Protein Quality Score PDCAA' is set to .89. The 'Round to nearest gram' dropdown is also visible.

Nutrient	Value	Unit
Iron		
Magnesium		
Manganese		
Molybdenum		
Mono Fat		
Pantothenic Acid		
Phosphorus		
Poly Fat		
Potassium		
Protein		
Protein is < 1 gram		Round to nearest gram
Protein Quality Score PDCAA	.89	
Protein Quality Score PER		
Show Percent DV Protein	<input checked="" type="checkbox"/>	
Show "not a significant source of protein" when insignificant	<input type="checkbox"/>	



Label with %DV Protein

- View Label
- %DV calculates using the unrounded Protein g
- $(\text{Protein g} \times \text{PDCAAS}) / 50 \text{ g}$

Nutrition Facts	
6 servings per container	
Serving size	1 bar (40g)
Amount per serving	
Calories	110
% Daily Value*	
Total Fat 2.5g	3%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 115mg	5%
Total Carbohydrate 14g	5%
Dietary Fiber 2g	7%
Total Sugars 2g	
Includes 1g Added Sugars	2%
Protein 10g	17%
Vitamin D 0mcg	0%
Calcium 62mg	4%
Iron 2mg	10%
Potassium 124mg	2%
<small>*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.</small>	



Genesis R&D Training

Genesis R&D Training | August 20-22, 2019 | Oak Brook, IL

Professional *and/or* Advanced training session. The first two days cover the fundamentals of the Genesis R&D Food program: creating ingredients, building recipes/formulas, nutrition analysis and reporting, labeling, and best practices. In addition, you can attend a third day of Advanced instruction, or just attend the Advanced session as a single day. Advanced training presents more complex scenarios and more comprehensive regulatory issues.

Genesis R&D Training | October 8-10, 2019 | Oak Brook, IL

Professional, *and/or* Advanced training session. See description above.

Genesis R&D Training | November 5-7, 2019 | Oak Brook, IL

Professional, *and/or* Advanced training session. See description above.

Genesis R&D Training: Professional + Menu Label | December 4-5, 2019 | MicroTek, Miami, FL

Instruction 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, the class includes direction and discussion on the 2018 Menu Labeling requirements and Menu Label features in Genesis R&D.

See the Full Schedule: <https://www.esha.com/news-events/training-schedule/>

QUESTIONS?



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