



INGREDIENTS



BETTER-FOR-YOU BARS

HOW TO LOWER SUGAR, IMPROVE TEXTURE, AND
BOOST THE OVERALL HEALTH PROFILE OF BARS

THE
Amazing[™]
PLUM

THE SUNSWEET® ADVANTAGE

Sunsweet® Ingredients are functional ingredients made out of real food. Derived from prune plums and packed with sorbitol, fiber, and antioxidants, Sunsweet® Ingredients are naturally sweet yet lower in sugar than other varieties of dried fruit. They not only help lower overall sugar levels of bars but also enhance flavors of spices and chocolate, aid in moisture retention, and promote caramelization.

Sunsweet® Ingredients come in a variety of forms— from pastes and concentrate to powders— helping to turn dried plums into functional and versatile solutions for better-for-you bars.



CONTENTS

I. Sunsweet Ingredients at Work	3
II. Benchmark Comparisons	5
Chewy Granola Bars	5
Crunchy Granola Bars	7
Bakery Bars	9
Protein Bars	12
Fruit/Nut Bar	15
III. Sunsweet Ingredient Product Descriptions	17
Dried Plum Puree	17
Prune Juice Concentrate	18
Dried Plum Powder	18
Plum Amazins	19
IV. General Formulation Guidelines	20

I. SUNSWEET INGREDIENTS AT WORK

To show the effectiveness of plums in bar recipes, we performed benchmark tests comparing commercial bars with recipes modified to include Sunsweet® Ingredients. The results show the variety of ways that plums can boost flavor and health in bars.

This chart summarizes ways that these ingredients can improve bars. Meanwhile, the following comparison recipes demonstrate how Sunsweet® Ingredients can be used to modify classic bars. All of the ingredients contain some naturally occurring sugar and will aid in sweetening, but Prune Juice Concentrate has the highest sugar content.

See the back of the manual starting on page 17 for more information on Sunsweet® Ingredients.

INGREDIENT	ADHESION/ BINDING	FLAVOR ENHANCING	COLOR/ BROWNING	GLOSS/ COATING	ADDED MOISTURE	CRYSTAL- LIZATION CONTROL
Dried Plum Puree	●	●	●		●	●
Prune Juice Concentrate	●	●	●	●	●	●
Dried Plum Powder	●	●	●			
Plum Amazins		●				

SUNSWEEP INGREDIENT FLAVOR AFFINITIES IN BARS

Whole-wheat and gluten-free grains: buckwheat, cornmeal, oats and oat flour, sorghum, teff, wheat berries, whole wheat

Sweeteners: brown sugar, honey, maple syrup, molasses, sorghum syrup

Fruit: apples, bananas, pears, oranges

Dried fruits: apricots, blueberries, cherries, cranberries, currants, dates, figs

Nuts and seeds: almonds, chestnuts, hazelnuts, pistachios, poppy seeds, millet, walnuts

Chocolate: dark chocolate, cocoa, cocoa nibs

Dairy: brown butter, cream cheese, goat cheese, fontina, pecorino, yogurt

Beverages: black tea, coffee, port

Spices: allspice, black pepper, cinnamon, cloves, ginger, nutmeg

II. BENCHMARK COMPARISONS

CHEWY GRANOLA BARS

This benchmark sample is the Quaker® Chewy Granola Bar, an oat-based bar with a chewy/sticky texture.

FINDINGS: Using Plum Juice Concentrate in place of some of the brown rice syrup gives the bar a better overall flavor with lower total sugar. The color of the bar is slightly darker, making it ideal for bars with chocolate and/or dark fruit, like cranberries, raisins, or blueberries. Replacing some or all of the dried fruit with Plum Amazins gives the bars a more subdued, jammy flavor while further lowering sugar.

INGREDIENT	USED IN PLACE OF:	% REPLACED	COLOR	SWEETNESS	TEXTURE	FLAVOR
Prune Juice Concentrate	brown rice syrup	25%	slightly darker	sweeter	slightly softer, more moist	a little tart, more fruit-forward
Prune Juice Concentrate	brown rice syrup	50%	much darker	sweeter	softer, more moist	more tart, more fruit-forward
Plum Amazins	cranberries	50%	shiny/dark	sweeter	somewhat more firm	less tart, subdued
Plum Amazins	cranberries	100%	shiny/dark	sweeter	somewhat more firm	jammy

CHEWY GRANOLA BARS

(Original)

INGREDIENTS	% BY WEIGHT
Rolled oats	21
Crisp rice cereal	12
Cranberries	10
Walnuts	5.25
Flaxseed meal	2.5
Brown rice syrup	34
Nut butter (unsweetened)	7.5
Vanilla extract	1
Salt	.25
Brown sugar	4
Canola oil	2.5
Total	100

CHEWY GRANOLA BARS

(Replacing 50% Brown Rice Syrup with Prune Juice Concentrate)

INGREDIENTS	% BY WEIGHT
Rolled oats	21
Crisp rice cereal	12
Cranberries	10
Walnuts	5.25
Flaxseed meal	2.5
Brown rice syrup	17
Prune Juice Concentrate	17
Nut butter (unsweetened)	7.5
Vanilla extract	1
Salt	.25
Brown sugar	4
Canola oil	2.5
Total	100

METHOD:

Line sheet tray with parchment paper and coat with cooking spray. Heat oven to 200°F. Stir together oats, rice, dried fruit, nuts, and flaxseed meal. Whisk syrup (and prune juice concentrate), nut butter, brown sugar, oil, vanilla and salt over double boiler until smooth. Pour syrup mixture over dry mixture. Pour into pan and press to flatten. Bake for up to 15 minutes or until golden on top and firm on edges. Let cool completely. Cut into bars.

ANOTHER OPTION:

Replace 50% cranberries with Plum Amazins for a less-tart bar with more jammy fruit flavors.

CRUNCHY GRANOLA BARS

The benchmark for this sample is the Nature Valley® Crunchy Granola Bar (apple-flavor), a crunchy oat bar sweetened with honey.

FINDINGS: Replacing some of the honey with Prune Juice Concentrate rounds out the flavors of the bar with lower total sugar. However, it decreases the apple flavor and may be more suited for a bar with a cherry, cranberry, berry, or nut flavor profile. Adding Dried Plum Powder at a high percentage (5%) darkens the bar significantly and gives it a toasted fruit flavor.

INGREDIENT	USED IN PLACE OF:	% REPLACED	COLOR	SWEETNESS	TEXTURE	FLAVOR
Prune Juice Concentrate	honey	15%	slightly darker	slightly less sweet	slightly more brittle	a little tart, more fruit-forward
Prune Juice Concentrate	brown rice syrup	50%	slightly darker	slightly less sweet	slightly more brittle	more fruit forward, more tart with slight bitterness
Dried Plum Powder	in addition to other ingredients	5% (added)	much darker	no change	no change	fruit-forward, with toasted fruit flavor
Plum Amazins	in addition to other ingredients	100%	slightly darker, with less shine	no change	slightly crunchy exterior with chewy interior	Slightly cooked, toasted fruit flavor

CRUNCHY GRANOLA BARS

(Original)

INGREDIENTS	% BY WEIGHT
Rolled oats	21
Crisp rice cereal	12
Dried apples	10
Brown sugar	5.25
Honey	2.5
Water	34
Canola oil	7.5
Vanilla extract	1
Salt	.25
Cinnamon	4
Total	100

CRUNCHY GRANOLA BARS

(Replacing 50% Honey with 50% Prune Juice Concentrate)

INGREDIENTS	% BY WEIGHT
Rolled oats	41.18
Crisp rice cereal	12.39
Dried apples	7.88
Brown sugar	12.84
Honey	7.19
Prune Juice Concentrate	7.19
Water	4.31
Canola oil	5.88
Vanilla extract	.46
Salt	.49
Cinnamon	.19
Total	100

METHOD:

Line sheet tray with parchment paper and spray with cooking spray. Heat oven to 350°F. Toast oats on a sheet pan for 10 to 12 minutes or until golden and fragrant. Combine toasted oats, rice, and dried apples.

In a saucepan, heat brown sugar, honey, (prune juice concentrate), water, and oil. Gently simmer 5-6 minutes, or until sugar has dissolved and the mixture is smooth. Add vanilla, salt, and cinnamon and pour over dry ingredients. Mix well, spread into prepared pan, and press into pan. Bake 20-22 minutes or until deep golden brown. Let cool completely. Cut into bars.

ANOTHER OPTION:

Replace dried apples with Plum Amazins for a bar with a molasses-like, spiced flavor profile.

BAKERY BARS

The benchmark for this sample is the Quaker® Protein Baked Bars (oatmeal raisin nut flavor), an oat-based bar with a chewy and sticky texture.

FINDINGS: Using Prune Juice Concentrate in place of brown rice syrup makes the bar slightly tart but gives it a more balanced flavor with lower total sugar. Using Dried Plum Powder in place of flaxseed meal helps with binding while offering notes of caramel and toffee. The bar color becomes slightly darker, making the powder addition better for bars with chocolate or dark fruit, like cranberries, raisins, or blueberries.

INGREDIENT	USED IN PLACE OF	% REPLACED	COLOR	SWEETNESS	TEXTURE	FLAVOR
Prune Juice Concentrate	brown rice syrup	50%	darker	nearly the same	slightly more moist, slightly crumbly	jammy, slightly more tart
Prune Juice Concentrate	brown rice syrup	100%	much darker	nearly the same	slightly more moist, slightly crumbly	slightly bitter/astringent
Dried Plum Powder	flaxseed meal	100%	darker	sweeter	slightly more firm	caramel/toffee
Plum Amazins	raisins	50%	no change	slightly less sweet	slightly pasty	fruit-forward, not identifiably prune
Plum Amazins	raisins	100%	no change	slightly less sweet	slightly pasty	fruit-forward, with prune flavor coming through

BAKERY BARS

(Original)

INGREDIENTS	% BY WEIGHT
Brown sugar (light)	7
Brown rice syrup	14
Canola oil	5
Water	20
Peanut butter (unsweetened)	8.5
Vanilla extract	.5
Quick cooking oats	17.2
Whey protein concentrate	5
Whole wheat flour	3
Flaxseed meal	3
Oat flour	6
Salt	.2
Baking powder	.6
Raisins	10
Total	100

METHOD:

Line sheet tray with parchment paper and spray with cooking spray. Heat oven to 300°F. Whisk together brown sugar, brown rice syrup, (prune juice concentrate), oil, water, peanut butter, and vanilla until the mixture is smooth. Combine the oats, whey protein concentrate, whole wheat flour, flaxseed meal, oat flour, salt, and baking powder. Mix the wet and dry ingredients and fold in the raisins. Spread into prepared pan and smooth out the top. Bake with convection using a low fan for 35 minutes.

BAKERY BARS

(Replacing 100% Brown Rice Syrup with Prune Juice Concentrate)

INGREDIENTS	% BY WEIGHT
Brown sugar (light)	7
Prune Juice Concentrate	14
Canola oil	5
Water	20
Peanut butter (unsweetened)	8.5
Vanilla extract	.5
Quick cooking oats	17.2
Whey protein concentrate	5
Whole wheat flour	3
Flaxseed meal	3
Oat flour	6
Salt	.2
Baking powder	.6
Raisins	10
Total	100

BAKERY BARS

(Replacing 100% Flaxseed Meal with Dried Plum Powder)

INGREDIENTS	% BY WEIGHT
Brown sugar (light)	7
Brown rice syrup	14
Canola oil	5
Water	20
Peanut butter (unsweetened)	8.5
Vanilla extract	.5
Quick cooking oats	17.2
Whey protein concentrate	5
Whole wheat flour	3
Dried Plum Powder	3
Oat flour	6
Salt	.2
Baking powder	.6
Raisins	10
Total	100

METHOD:

Line sheet tray with parchment paper and spray with cooking spray. Heat oven to 300°F. Whisk together brown sugar, brown rice syrup, oil, and water until the mixture is smooth. Combine the oats, whey protein concentrate, whole wheat flour, dried plum powder, oat flour, salt, and baking powder. Mix the wet and dry ingredients and fold in the raisins. Spread into prepared pan and smooth out the top. Bake with convection using a low fan for 35 minutes.

ANOTHER OPTION:

Replace 100% raisins with Plum Amazins to enhance the whole-grain flavor.

PROTEIN BARS

The benchmark for this sample is the PowerBar® Performance Energy Bar (peanut butter flavor), which comprises protein powder and a matrix of liquid sweeteners.

FINDINGS: Using Prune Juice Concentrate in place of brown rice syrup helps balance the taste of the bar with less sugar. Swapping Dried Plum Powder in place of the inulin helps the bar hold more moisture while also brightening the flavor. Replacing 50% of oat flour with Dried Plum Powder locks more moisture into the bar and makes the bar taste better.

INGREDIENT	USED IN PLACE OF:	% REPLACED	COLOR	SWEETNESS	TEXTURE	FLAVOR
Prune Juice Concentrate	brown rice syrup	25%	no change	no change	slightly sticky	slightly fruit-forward
Prune Juice Concentrate	brown rice syrup	50%	darker	no change	soft and sticky	more fruit-forward
Dried Plum Powder	inulin	100%	some dark flecks	no change	slightly more stiff	slightly tart, subtle toffee flavors
Dried Plum Powder	oat fiber	50%	darker	no change	no change	more fruit-forward

PROTEIN BARS

(Original)

INGREDIENTS	% BY WEIGHT
Oat flour	6.5
Cocoa powder	4.4
Soy protein #1	8
Soy protein #2	8
Whey protein concentrate	5.5
Inulin powder	4
Salt	.10
Brown rice syrup	46.50
Peanut butter (unsweetened)	12
Brown sugar	5
Total	100

METHOD:

Line sheet tray with parchment paper and spray with cooking spray. Combine oat flour, cocoa powder, soy proteins, whey protein concentrate, inulin powder, and salt. In a double boiler, heat brown rice syrup, peanut butter, (prune juice concentrate), and brown sugar. Gently simmer 5-6 minutes, or until sugar has dissolved and the mixture is smooth. Mix the dry ingredients with the wet ingredients and spread into prepared pan. Press into pan. Refrigerate until firm. Cut into bars.

PROTEIN BARS

(Replacing 50% Brown Rice Syrup with Prune Juice Concentrate)

INGREDIENTS	% BY WEIGHT
Oat flour	6.5
Cocoa powder	4.4
Soy protein #1	8
Soy protein #2	8
Whey protein concentrate	5.5
Inulin powder	4
Salt	.1
Prune Juice Concentrate	23.25
Brown rice syrup	23.25
Peanut butter (unsweetened)	12
Brown sugar	5
Total	100

PROTEIN BARS

(Replacing Inulin with Dried Plum Powder)

INGREDIENTS	% BY WEIGHT
Oat flour	6.5
Cocoa powder	4.4
Soy protein #1	8
Soy protein #2	8
Whey protein concentrate	5.5
Dried Plum Powder	4
Salt	.10
Brown rice syrup	46.50
Peanut butter (unsweetened)	12
Brown sugar	5
Total	100

PROTEIN BARS

(Replacing 50% Oat Flour with Dried Plum Powder)

INGREDIENTS	% BY WEIGHT
Oat flour	3.25
Dried Plum Powder	3.25
Cocoa powder	4.4
Soy protein #1	8
Soy protein #2	8
Whey protein concentrate	5.5
Inulin powder	4
Salt	.10
Brown rice syrup	46.50
Peanut butter (unsweetened)	12
Brown sugar	5
Total	100

METHOD:

Line sheet tray with parchment paper and spray with cooking spray. Combine oat flour, dried plum powder, cocoa powder, soy proteins, whey protein concentrate, (inulin powder), and salt. In a double boiler, heat brown rice syrup, peanut butter, and brown sugar. Gently simmer 5-6 minutes, or until sugar has dissolved and the mixture is smooth. Mix the dry ingredients with the wet ingredients and spread into prepared pan. Press into pan. Refrigerate until firm. Cut into bars.

FRUIT/NUT BARS

The benchmark for this sample is the Larabar® Pecan Pie Flavor bar, a grain-free bar made with nuts and seeds but no grains.

FINDINGS: Replacing some date paste with Dried Plum Puree yields a fruit-forward flavor with lower overall sugar content. Sweetness and overall flavor are enhanced when the plum puree is used at 25%. Adding 5% Dried Plum Powder to the recipe makes the bar slightly more fruit-forward while adding subtle toffee flavor.

INGREDIENT	USED IN PLACE OF:	% REPLACED	COLOR	SWEETNESS	TEXTURE	FLAVOR
Dried Plum Puree	date paste	25%	no change	sweeter	slightly sticky	Fruit/nut flavor enhanced and more balanced
Dried Plum Puree	date paste	50%	no change	sweetness curbed with tart edge	sticky	brighter, more tart but still balanced
Dried Plum Powder	used in addition to	5%	slightly darker	no change	slightly sticky	subtle toffee flavors

FRUIT/NUT BARS

(Original)

INGREDIENTS	% BY WEIGHT
Dates, pitted	62.55
Raw almonds	12.17
Raw pecans	25.28
Total	100

FRUIT/NUT BARS (Replacing 50% Dates with Dried Plum Puree)

INGREDIENTS	% BY WEIGHT
Dates, pitted	31.27
Dried Plum Puree	31.28
Raw almonds	12.17
Raw pecans	25.28
Total	100

FRUIT/NUT BARS

(Adding Dried Plum Powder)

INGREDIENTS	% BY WEIGHT
Dates, pitted	57.45
Dried Plum Powder	5.1
Raw almonds	12.17
Raw pecans	25.28
Total	100

METHOD:

Line loaf pan with plastic wrap. Combine nuts in a food processor until finely chopped (but not a paste). Add dates (and dried plum puree/dried plum powder) and pulse until fruit is finely chopped and the mixture starts to stick to the sides of the bowl. Transfer to the prepared loaf pan and use a piece of parchment paper to flatten the mixture into the pan. Refrigerate until set, 30 minutes. Cut into bars.

III. SUNSWEET INGREDIENT PRODUCT DESCRIPTIONS

DRIED PLUM PUREE

Made from a blend of dried plums and prune juice concentrate, this puree is high in sorbitol, a natural humectant. Alone, the dark purple paste has a tangy flavor similar to molasses. Used in recipes, it enhances other flavors, especially spices and chocolate.

Applications: Dried Plum Puree can increase moisture levels and enhance flavor. It also can help bind ingredients in gluten-free formulas. In fruit-and-nut bars, it can take the place of date paste, lowering total sugar levels.

PRODUCT SPECIFICATIONS

Fiber: 4.53% soluble; 1.17% insoluble
Titratable acidity: 1.5 to 2.2% (as malic acid)
Brix: 68°
pH: 3.7-4.2
Sugars:
Glucose: 21.18%
Fructose: 13.18%
Sucrose: .25%
Sorbitol: 14.7%



PRUNE JUICE CONCENTRATE

Made by extracting juice from dried plums and then concentrating it to a sugar level of 70° Brix, prune juice concentrate is a sweet and tangy syrup the color of molasses. It is stable at room temperature.

Applications: When used in smaller concentrations than Dried Plum Puree in bar recipes, Prune Juice Concentrate can increase moisture levels and decrease total sugar levels. It also brings a natural caramel color to products. Use Prune Juice Concentrate to replace up to 50% honey, 40% brown rice syrup, 40% agave syrup, 40% tapioca syrup, 30% corn syrup, 30% invert sugar, or 30% maltitol.

PRODUCT SPECIFICATIONS

Fiber: 5.14% soluble; .53% insoluble
Titratable Acidity: 1.5-2.2% (as malic acid)

Brix: 70°

pH: 3.5-4.2

Sugars:

Glucose: 33.53%
Fructose: 13.44%
Sucrose: .42%
Sorbitol: 16.96%



DRIED PLUM POWDER

Ground from whole prunes, this reddish-brown plum powder is extremely hygroscopic. Dried Plum Powder is slightly tacky, with mild, subtle toffee flavor.

Applications: Dried Plum Powder can enhance browning and increase moisture levels in bars. When used with light-colored gluten-free rice and/or corn flour blends, it gives products a wholesome, whole-grain appearance. Use Dried Plum Powder to replace up to 100%



flaxseed meal, rice bran, or citrus fiber or replace up to 50% inulin, fructooligosaccharides, maltodextrin, or oat fiber.

PRODUCT SPECIFICATIONS

Fiber: 7.3% soluble; 4.5% insoluble

Trace acidity

Sugars:

Glucose: 22.28%

Fructose: 13.53%

Sucrose: 1.34%

Sorbitol: 17.65%

PLUM AMAZINS

Description: Made by dicing pitted dried plums, Plum Amazins are free-flowing and low in water content. They are higher in fiber and lower in sugar than raisins, dates, and cranberries. Using them in place of other dried fruits brings a more roasted, caramelized flavor to bars.

Applications: Plum Amazins can be mixed into recipes in place of or along with other dried fruit and nuts. If used in a pre-soak, they will hold their shape as long as the liquid is no warmer than room temperature. When baked, Plum Amazins will crisp up around the edges. Use Plum Amazins to replace up to 50% raisins, dried cherries, dried cranberries, or dried apples.



PRODUCT SPECIFICATIONS

Fiber (total): 7.1%

Acidity: 1.7-2.8%

pH: 3.5-4.2

Sugars:

Glucose: 19.81%

Fructose: 11.59%

Sucrose: .82%

Sorbitol: 14.72%

IV. GENERAL FORMULATION GUIDELINES

How to use Sunsweet Ingredients in place of other common bar ingredients.

FOR SWEETENING

SUNSWET INGREDIENT	BROWN RICE SYRUP	HONEY	AGAVE/TAPIOCA SYRUP	CORN SYRUP	INVERT SUGAR	MALTITOL
Prune Juice Concentrate	<40% improves flavor	<50% improves flavor in berry or nut bars	<40% improves flavor	<30% improves flavor	<30% improves flavor	<30% improves flavor

FOR FIBER AND FRUIT ADDITIONS

INGREDIENT	FLAXSEED/RICE BRAN/CITRUS FIBER	INULIN/FRUCTOOLIGOSACCHARIDES/MALTODEXTRIN	OAT FLOUR/FIBER	RAISINS	DRIED CHERRIES, APPLES, APRICOTS	DATE PASTE
Dried Plum Powder	100% improves flavor	<50% improves flavor	<50% improves flavor			
Plum Amazins				<50% improves flavor	<50% improves cost	
Dried Plum Puree						<25% improves flavor

NOTES

NOTES



THE
Amazing[™]
PLUM

SUNSWEET[®]
INGREDIENTS

Sunsweetingredients.com
925.271.9312 · sales@sunsweetingredients.com