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## AMERICA'S TOP-SELLING ALL-NATURAL, NO-SUGAR ADDED DRIED FRUIT

California raisins are mostly dried grapes of the "Vitis vinifera" Natural Seedless varietal type and are typically dried by the sun, whether it is on paper trays or dried on the vine. Natural (sun-dried) seedless raisins include the Thompson seedless and other newer cultivars such as Selma Pete, Fiesta and DOVine. Golden Seedless and Dipped Seedless raisins are mechanically dried and processed. Other raisin varietal types include Zante Currant, Muscat, Monnuka, Sultana and Other Seedless.

Dried fruits have been grown and dried from fresh fruits for thousands of years. Originally used in place of fresh fruits when fresh was out-of-season, dried fruits were actively traded to those countries where growing and drying conditions made these products a rare and desired commodity, especially in northern Europe.

Grapes have always been at the top of the list of fruits most suitable for drying and raisins continue as the number one dried fruit today. All natural, no sugar-added dried fruits, such as California Raisins have been proven to have the same nutrient value as fresh fruit as only the water is taken out in the drying process.

Additionally, in recent years there has been some controversy swirling around processed foods with added sugar and there are dried fruits which would not be palatable without the addition of processed sugar. Whether you are a food manufacturer, an artisan baker or home cook seeking to provide your family with the most wholesome foods, please carefully read all ingredient labels. California raisins are proud to say, "Our ingredient statement says it all – RAISINS!"

Did you know that it takes more than 1.8 billion pounds of fresh grapes to produce the 400 million pounds of raisins typically grown in California each year? 100,000 acres in the Central San Joaquin Valley are carefully tended by 1,500 growers, many of whom continue to tend vines that can be traced back several generations. Unlike typical vegetable crops that must be replanted each year, raisin grape vines that are carefully tended and harvested, can be productive for 80-100 years.

Raisin grape vines are typically planted in rows that run east to west so grapes drying into raisins can achieve maximum exposure to the sun.

California raisin grape growers are true stewards of the land. Most California raisins are grown within a 60 mile radius of Fresno and all are managed under the watchful eye of state inspectors. If pesticides are used, they are strictly regulated and reported at the local county level.

## SUSTAINABLE VINEYARDS, SUSTAINABLE FRUIT

### **GROWING PRACTICES**

California raisins are labor-intensive from their initial planting but the results are sweet. It takes at least three full years to produce a single raisin, from the time a grape vine is planted to its first yield.

In a typical season during the months of December and January, farmers prune and tie-up their vines to get them ready for the next growing season.

Late February to early March, vines start their annual growth cycle with bud burst and the formation of tiny bunches on the new shoots, followed by the flowering cycle. By the end of May to early June clusters of grapes are well formed on the vines and the grapes are starting to develop the sugars needed to achieve peak taste.

Grapes are harvested in August and September once they reach a sweetness level of 18° to 24° brix\* depending on the growing year. Since vines need large amounts of water to bear fruit, farmers irrigate to soak the roots to a depth of three to five feet throughou growing season. Miles and miles of irrigation pipes and pumps provide ample water to the vines in temperatures that can reach over 100 degrees Fahrenheit.

\*Brix is a scale of measurement used to determine grape sugar content.



These vines, having been cut and neatly tied to wire during the winter are just starting their growing season.



Buds first appear in early spring

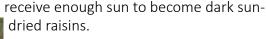


Grapes grow into luscious bunches bursting with sugar that are ready for harvest

## HARVEST METHODOLOGY

### TRADITIONAL - HAND HARVEST METHOD

Skilled farm workers gently hand-pick the grape clusters and lay them on clean paper trays between the rows of vines. During the two to three week drying period, the grapes are turned to make sure they





When the moisture content is about 15%, the trays are carefully rolled into bundles for protection from the weather. After drying for several more days the bundles are opened and emptied into field bins.

Up until the 1990's, nearly all raisin grapes were hand-harvested by guest laborers, traveling to

California from their native land of Mexico. It took nearly 60,000 laborers six to eight weeks to bring in the harvest of 400,000 tons of all varieties of raisin grapes. Competition for laborers by other industries and strict enforcement of labor laws by State and Federal Immigration officials helped to forge a significant change in raisin grape harvest methods.

Today, traditional harvest method now occupies about 30-50% of the harvest and available laborers have dropped below 30,000 per year in the Central San Joaquin Valley where nearly 100% of the raisin crop is grown.

### MECHANICAL HARVEST - CONTINUOUS TRAY METHOD

In the 1990's mechanical harvesters began to appear. Farmers began to heighten the vines and add drip irrigation to increase productivity per acre



and to allow for mechanical picking devices to travel the rows.

The machines have "fingers" that gently pull the individual grapes from the vines, then convey and transfer them in single layers onto paper trays that are as long as 800 feet.

These grapes then lay in the sun between the rows of vines where temperatures reach well over 100 degrees Fahrenheit, and dry into

raisins in the same fashion as the hand-picked bunches did in previous years. Approximately 30-50% of the raisin crop is mechanically harvested and dried by the continuous tray method.









## HARVEST METHODOLOGY CONTINUED

### MECHANICAL HARVEST - DRIED ON THE VINE (DOV) METHOD

A third harvest method that has been developed since the 1990's also in response to reduced labor availability, as well as a desire by farmers to find increased productivity. Dried-on-the-vine (DOV) raisin grapes are those grown mostly on overhead trellis-systems and when the grapes reach maturity the vine canes are cut to stop nutrients and water from flowing to the grapes. The grapes then dry on the vine, with heat provided by the sun for a period up to 8 weeks in order to reach desired harvest



raisins are ultimately put into wooden bins that help equalize the moisture between the raisins. The bins are stacked and covered to warm the raisins and allow the drier raisins to draw moisture from the juicier raisins. The bins of raisins are then trucked to

various packing plants throughout the Central San Joaquin Valley.

### **GOLDEN RAISINS**

California also produces golden raisins by harvesting fresh grapes and taking them to dehydrating facilities where they are thoroughly washed, placed on wooden trays and sent into drying tunnels with temperatures reaching up to 500 degrees Fahrenheit. The fresh grapes are treated with sulphur dioxide

(SO2), which when dried leaves the raisins with the bright golden color desired by bakers, confectioners and snack food manufacturers. Of the approximately 250,000 tons of raisins annually produced in California, approximately 6-9% are golden raisins depending on the demand by manufacturers and consumers.



## **PROCESSING CALIFORNIA RAISINS**

Quality control plays an important part once the raisins are at the plant. Before the raisins are taken from their bins, government inspectors use long prods to take samples from the middle of each box. Strict standards must be met to ensure each box of raisins is free of imperfections.

Next, the raisins are "processed". They are poured into a hopper which feeds onto a series of conveyor belts and drums that remove any remaining stems, chaff or light weight fruit.

From this point, the raisins are sent through a brisk vacuum air stream to catch any undesirable material that may have been missed. Then they are size-graded and thoroughly washed.

The raisins then move past a sophisticated laser sorter that uses light beams and a computer to determine if anything other than raisins is passing through the stream. If the computer determines something isn't a raisin, it instantly sends a small burst of air to knock the material out of the stream into a trough below, all at incredibly high speeds!

Hand inspections are done throughout the packaging process by quality control technicians to make California raisins the cleanest, highest quality in the world.

After final quality inspections, the raisins are automatically weighed and packed in a variety of convenient sizes from consumer snack packs to huge cartons for bakers and cereal companies. From California's Central San Joaquin Valley, raisins are shipped around the world to meet market demands for this tasty, dried fruit.



## WORLD CLASS RAISIN GROWERS

California raisin grape growers are indeed world class in that there is a constant effort made industry-wide to develop newer raisin grape cultivars and strains of existing grapes that mature earlier and are more disease resistant.

Each processor has one or more field men who work with their growers to provide the latest information regarding chemical usage, pest control, best practices for irrigation, newest raisin grape cultivars and the latest in harvesting machinery.

Additionally, USDA is doing research on new raisin grape cultivars and as improved grapes are brought forward from test plots to nursery stock providers, farm extension field staffers will also work with farmers to assure proper planting, nutrition and irrigation in order to maximize the potential yield per acre.



Raisin growers are members of Sun Maid Growers of California, Raisin Bargaining Association or are independent (not a member of a cooperative).

## WORLD CLASS RAISIN PROCESSORS

California has 16 processors of raisins who process and package raisin products. About 35% of California raisins are processed and packaged for the domestic retail market in consumer-sized packs ranging from ½ ounce snack packs to canister and box packs up to 2 pounds in weight.

Nearly 65% of the California raisin crop is processed for industrial and/or ingredient use. California's processors are not only subject to continuous U.S.D.A. inspections for both incoming raw material from the growers, but also must meet the outgoing standards set for finished products. These raisins destined for industrial ingredient applications and the consumer packed products are also subject to independent third-party audits by retailers eager to show their customers that their food safety interests are protected.

- Boghosian Raisin Packing Co., Inc. Caruthers Raisin Packing Co., Inc. Central Calif. Raisin Packing Co., Inc. Chooljian Bros. Packing Co., Inc. Chooljian Holding Co., Inc. Del Rey Packing Co. Dish Raisins Lion Raisins
- Mariani Packing Co. National Raisin Co. River Ranch Raisins, Inc. Sun Valley Raisins, Inc. Sun-Beam Raisin Co., Inc. Sun-Maid Growers of Calif. Sunview Dried Fruit & Nut Co. Victor Packing, Inc.

## WATER, A PRECIOUS RESOURCE

One of the richest agricultural areas in the world, the San Joaquin Valley measures about 220 miles in length and 40 to 60 miles in width, extending from around Stockton south to Bakersfield. Well-suited for farming, the Valley is hot and dry in the summer with long, sunny days. Winters are cool and often a heavy fog blankets the Valley floor. The San Joaquin Valley is bordered by the Coast Range on the west and the Sierra Nevada Mountains on the east, a rugged range with peaks reaching well over 14,000 feet above sea level.

> Irrigation is essential to California raisin farmers. The central San Joaquin Valley is an arid environment receiving only an average of 11 inches of rainfall during a normal season and often enduring long droughts. Farmers receive their water from a network of

irrigation canals and groundwater that are fed by snowmelt from the Sierra Nevada Mountains. The snowmelt is captured in a series of large reservoirs (lakes) that starts in the high country and winds its way downriver to the lower foothill elevations. These lakes also provide drinking water for city residents, recreational activities, enhance local tourism and generate power through a series of hydroelectric projects. With California's historic dry spells, these reservoirs are essential for survival in the central Joaquin Valley.

The wet season runs from fall through spring, with accumulations of snowpack at the higher elevations that can last through the summer months providing the reservoirs a constant source of water. April is considered "peak-flow" for the rivers fed by the Sierra snowmelt and generally it's during this time the reservoirs receive the greatest amount of water supply. Snow surveys are conducted periodically in winter and spring to test for water content. These results along with information provided by a series of stream gaging systems and reservoir capacities help determine how much water the farmers will be allocated in the upcoming growing season.

With little to no rainfall during the hot summer months, it is imperative that grapevines are properly irrigated to ensure the health of the plant and its crop. This is accomplished by either furrow or drip irrigation systems.







## **RAISIN VARIETAL INFORMATION**

Raisin Varietal	Parent Grape Cultivar	Description	Uses	
NATURAL SEEDLESS RAISINS				
Thompson Seedless	Thompson Seedless Selma Pete Fiesta DOVine			
Selma Pete		<ul> <li>Dried by the sun</li> <li>Natural Seedless</li> <li>Not chemically treated</li> <li>Dark brown in color</li> <li>Average size</li> </ul>	Most popular for: • Cooking • Baking • Salads • Desserts • Trail mix	
DOVine	Green or Yellowish green flesh colored grapes		• Eating out of hand	
Zante Currant	Black Corinth	<ul> <li>Dried by the sun</li> <li>Seedless</li> <li>Not chemically treated</li> <li>Very dark color</li> <li>Tart, tangy flavor</li> <li>Very small size</li> </ul>	Popular for baking; especially for scones & biscotti because of its small size.	
Golden Seedless	The same grapes that are used to make Natural Seedless Raisins	Mechanically dehydrated. Treated with sulfur dioxide to preserve golden color.	Used the same as Natural Seedless Raisins except wherever a light colored raisin is desired.	
<ul> <li>Other raisin varietal types include Muscat, Monukka, Sultanas, Flame Seedless and Other Seedless.</li> <li>Dipped Seedless Paicing are sup ripered, bathed in bet water and mechanically debydrated</li> </ul>				

• Dipped Seedless Raisins are sun ripened, bathed in hot water and mechanically dehydrated. No chemical treatment used.

### WORLD CLASS RAISIN PRODUCTS - INDUSTRIAL AND CONSUMER MARKETS

All packers make finished products for the industrial/ingredients market and several provide either branded or private label retail products. Those packers selling store-brand (private label) products typically do not reveal their customer lists, but be assured that over 90% of all store-brand labels are supplied by California-based producers.



California raisin quality is recognized around the world. Customers can be assured that according to the Center for Disease control, there has never been a case of a food-borne illness traced back to California raisins. California raisins have been called the "most perfectly safe food". What makes them perfect and safe are several reasons; the PH of raisins is 3.5 to 4.0, they have a low water activity level (between 0.51-0.62), 70% of the content is naturally produced fruit sugars (fructose and glucose) and the finished moisture is only 15% to 17%. It is nearly impossible for harmful bacteria to grow in, or on, a raisin.

With increasing worries about the safety of imported food products, food manufacturers and retailers around the world are increasingly coming to rely on and trust California raisins when seeking a dried fruit supplier.

Did You Know?

- One serving of California Raisins (1/4 cup or 40 grams) contains 7% DV of dietary fiber, 6% DV of potassium and 4% of DV iron.
- Just 1/4 cup of raisins is one serving of fruit.
- California Raisins are naturally dried by the sun and contain no added sugar, preservatives or juice.

California Raisins are a delicious, convenient and affordable addition to recipes, snacks and dishes and has benefits that help maintain a healthy lifestyle.

## **INTERNATIONAL MARKETING PROGRAMS**

International marketing activities are conducted by the Raisin Administrative Committee (RAC) under the Federal Marketing Order 989, and is administrated by the Agricultural Marketing Services (AMS) division of the United States Department of Agriculture (U.S.D.A.)

The Raisin Administrative Committee contracts with representatives in Mexico, Korea, Canada, SE Asia, China, Japan, Scandinavia, Taiwan, Germany and the United Kingdom. RAC international representatives have over 100 years of collective experience educating California raisin customers.

#### International Representatives

- Mexico
- Korea
- Canada
- SE Asia
- China
- Japan
- Scandinavia
- Taiwan
- Germany
- United Kingdom



As of 2019, the RAC added Canada to the list of supported countries, bringing the total to 18 active countries where promotional programs are conducted to encourage sales of California raisins. The RAC's mission is to identify new markets, encourage demand via advertising, sales promotion and public relations. Lastly, the RAC's overseas offices work with the local government and importers to help resolve and revise as necessary any barriers to trade, whether they be unfair tariffs, incorrect applications of regulations, or standardization of pesticide residue regulations.



## **RAISINS ARE A PART OF HISTORY**

History indicates that raisins were discovered for the first time by accident when they were found in the



dried form on vines as early as 2000 BC. Wall paintings from ancient times show that dried fruits were consumed and used as decorations in the Mediterranean regions of Europe.

Historians tell us the ancient Phoenicians and Armenians took the first steps in perfecting viticulture, the process of grape growing and selection.

Between 120-900 BC, the Phoenicians started colonial vineyards in the areas of Malaga and Valencia (Spain), and in Corinth (Greece). About this same time, the Armenians founded their vineyards in Persia (Turkey, Iran, Iraq). These bountiful growing areas had the perfect climate for making raisins and were also close to Greece and Rome, the first markets for raisins. Muscat raisins, oversized with seeds

and a fruity full flavor, were the primary crop in Malaga and Valencia. Currants, tiny seedless, tangy raisins were planted in Corinth, Greece, where historians believe they got their name.

The Phoenicians and Armenians then began to trade raisins with the Greeks and the Romans who consumed them in large quantities. As the popularity of the raisins grew, so did their value. They were given as prizes in sporting events, used as barter to trade, and how about raisins as a cure for what

ails you? Ancient physicians prescribed raisins as potions that could cure everything from mushroom poisoning to old age.

Emperor Augustus feasted on small birds stuffed with raisins. Even Hannibal had raisins in his troops' rations when he crossed the Alps.

For all their popularity, though, raisins were not exported to the rest of Europe. Shipping methods were too poor to maintain the quality of the raisins for long travel. All of that changed in the 11th century. Knights

returning from the crusades brought raisins back to Europe with them. They had sampled the dried fruit during their travels through the Mediterranean and Persia.

When the knights went home and began to crave raisins, a huge demand was created. Fortunately, packing and shipping techniques had improved enough for raisins to be sent all over Northern Europe.

By the middle of the 14th century, currants and raisins were an important part of English cuisine. In 1374, prices in England skyrocketed to two pence and three farthings per pounds, which was very expensive at that time.

After a period of time, viticulture spread to France and Germany. Even the English tried to grow currants in the 16th century – but realized their climate was too cold for drying raisins.

Grapes and raisins had become an important part of European cuisine by the time European nations started to colonize the Americas. In Spain, where viticulture had been perfected, grapes were being used to make products such as dry table wine,

sweet dessert wines and Muscat raisins. It was only natural that when the conquistadors colonized Mexico, wine and raisins were soon to follow.





## HISTORY OF CALIFORNIA RAISINS

#### RAISINS IN THE NEW WORLD

Grape growing flourished in the climate of the new world areas of Mexico and what is now California. Missionaries sponsored by Queen Isabella of Spain were sent to Mexico to educate the natives about religion. By the 18th century these influential and powerful padres had established 21 missions as far

north as what is now Sonoma, California.

The Padres used the majority of their grapes to make sacramental wines, though they also grew muscat raisins. In 1834, when the missions dismantled after Spain turned over the colonial government to the people of Mexico, the art of viticulture was almost lost. Had it not been for innovative farmers, California might not have become one of the world's leading grape growers.

### THE CALIFORNIA RAISIN INDUSTRY IS BORN

Even though the missions had closed, the padres still had a tremendous influence on the development of California's agriculture. Farmers used the missionaries' tremendous knowledge to grow grapes profitably for wine.

> But it wasn't until 1851 that a marketable muscat raisin was grown near San Diego. However, it turned out that San Diego wasn't ideal for raisin grape growing. Although blessed with lots of sunshine during the summer months, there wasn't enough water to support large vineyards.

Farmers looked north for a perfect spot to grow raisins. They found their place in the sun near Fresno in the San Joaquin Valley, one of the most fertile valleys in the world. Plenty of sunshine, a long, hot growing season and a plentiful water supply from the nearby Sierra Nevada Mountains would soon make the San Joaquin Valley the center of the raisin industry in California.

As word of potential farming profits spread, land in the San Joaquin Valley became an attractive investment for developers, land speculators and others. Land values in the 1870's ranged from \$3 -\$20 per acre, so large "spreads" could be bought inexpensively.



**Mission San Diego** 

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### IMMIGRANTS NURTURE MUSCAT RAISINS

Many different people began to move into the Valley to reap from the land what they sowed. In the late 1800's many Armenians, recognized as some of the world's most experienced viticulturists, came to the Valley. Today, many raisin growers in California are of Armenian descent.

Also, many farmers from the country of India began migrating to the Valley in the 1950's. They found great success and today these Asian Indians are a substantial part of the raisin industry.



Today, most California raisins are natural seedless. But why did the industry switch to a seedless varietal type when Muscats were just beginning to be popular everywhere?

It was no secret that consumers didn't like raisins with seeds. When the seeds were taken out – forced through the skin of the grapes – the raisins became sticky. People who tried to use the raisins for

baking or as a snack had to first "unstick" the Muscats by hand.

Since farmers grew these seeded Muscats almost exclusively in the early 1870's, their sales were limited to people who were willing to take the time to hand-separate these sticky muscat raisins. What these growers needed was the perfect seedless raisin grape to go into full-scale production.



#### WILLIAM THOMPSON AND HIS GRAPES

In 1875 their answer came from William Thompson and his son, George. The family, having immigrated from Yorkshire, England, eventually settled in Marysville, California. In 1872 William Thompson received three cultivars of the grape "Lady de Coverly" from Ellewanger & Barry, of Rochester, N.Y., and grafted



them on the roots of one of their grapevines. That spring the vineyard was flooded and only one of the three sprouts grew. From this sprout the seedless raisin grape was developed, and in 1875 William and his son, George exhibited at the Marysville Fair several branches with grapes that were thin-skinned, seedless, sweet and very tasty. In order to have an entry name, this grape was given the name "Thompson Seedless". From this first vine all the seedless grapes of California were propagated.



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Thompson Seedless Grapes are still used for making California raisins. They have been joined in the Natural Seedless varietal category by DoVine, Fiesta and Selma Pete. These light-colored grapes, when dried-by-the-sun, become the familiar dark raisins we've grown to love. When oven-dried and cured with sulfur, they become golden raisins. Either way, they're delicious.

## THE VERSATILE RAISIN

Few foods are as easy to use as natural California Raisins. Nutritious, sweet and delicious, raisins are a great snack just as they are or can add flavor to almost any favorite recipe.

Try mixing these delicious sun-dried nuggets with nuts and other dried fruits for a naturally good trail mix. California raisins also have earned their place in sweet and savory comfort foods such as chili, turkey sliders, french toast, ice cream, sauces, as well as with oatmeal and dry cereals.

Raisins are also a natural addition to your baked favorites. Can you imagine a cinnamon roll with raisins? Raisins add a touch of sunshine to muffins, cookies, cakes, pies, tarts, puddings, artisan and whole grain breads.

Here are some cooking tips for you:

Raisins can be chopped easily when they have a thin coating of vegetable oil put on them. For easy grinding, you can freeze the raisins first, then use vegetable oil to coat the blades of your blender or food processor.

Raisins are also great in a variety of dishes. They add a piquant flavor to beef, chicken, pork, ham, lamb and even veal when cooked right alongside the meat or poultry. Or you can blend them with your favorite meat sauces for an international flavor. For hundreds of recipes and ideas on how to use California raisins, go to www.calraisins.org

# RAISINS, RAISINS, EVERYWHERE

Have you noticed that raisins seem to be everywhere in your grocery store? They are! In a typical supermarket, well over 100 processed food items contain raisins from granola bars to yogurt, marinades and barbeque sauces. Even tortillas are made with raisins. Manufacturers like raisins because they can utilize them in many products naturally without the use of preservatives due to the low moisture levels and phyto-nutrients found naturally in raisins. Manufacturers also use raisins as a substitute for sugar since they contain their own natural sugar.

So next time you're in the grocery store, check your favorite products for raisins and you'll probably find them on the ingredient label!



California Raisin Bacon Brussel Sprouts



California Nuggets of Gold Raisin Pie



Turkey and Smoked Gouda Sandwich with Blueberry Raisin Chutney



Fruit Salsa Salad



## **INDUSTRY OVERSIGHT**

### RAISIN ADMINISTRATIVE COMMITTEE

Oversight for the Federal Marketing Order No. 989 is as follows:

- The RAC regulates the handling of raisins produced from grapes grown in California.
- Federal Marketing Orders are established under the authority of the Agricultural Marketing Agreement Act of 1937 and allow producers in an area to group together to promote the orderly marketing of their commodity and reduce extreme fluctuations in supplies and prices. By establishing stability, both the producer and the industry benefit. The Act allows the group flexibility within certain anti-trust laws as long as they operate under the provisions and terms established specifically by the Act in their Order.
- The RAC was made effective in 1949 and established a 47 member Committee consisting of 35 producers, 10 handlers, 1 bargaining association executive and 1 public representative.
- The RAC administers, monitors and recommends changes to the terms and provisions of the Order as needed. The Committee utilizes a President/General Manager with support staff for the administration and monitoring functions.
- Included in the Order are provisions for minimum grade and condition standards for natural condition and processed raisins, volume control regulations, voluntary diversion, export replacement and merchandising incentives. The minimum grade and condition regulations were established to ensure a wholesome, high quality product would be made available to the consumer. Raisins, which cannot be conditioned to meet these standards, are disposed of in eligible non-normal outlets.
- RAC activities are funded by handler assessments.

More information about the Raisin Administrative Committee may be found at: www.raisins.org