

MANGO



Mango

Origin: The dry tropics of northern Peru allow the production of a fruit with unbeatable color and flavor characteristics without the health problems generated by tropical rains. These environmental benefits favor the obtaining of an exquisite mango that is widely accepted both locally and internationally. Farmers with great experience produce this delicious fruit for export in the valleys of the Peruvian north coast.

This delicious fruit is produced and exported following strict sanitation measures so that consumers can enjoy it safely. Compliance with quality controls and standards, as well as phytosanitary requirements both in plantations and in packing plants have contributed to the increase in their consumption in destination markets. Thus, the Peruvian mango production season, which occurs between December and January, is one of the most anticipated by those who know this fruit.

The Peruvian mango is produced within the so-called "tropical and subtropical belt", in areas close to the Equator, between southern longitude 5 and 9, in exceptionally desert areas irrigated with water from rivers that flow down from the Andes and the Peruvian moors.

These exceptional drought conditions in a subtropical area are caused by the Humboldt Current, which is caused by the rise of deep and therefore very cold waters that occur on the western coasts of South America. Its arid effects are noticeably felt throughout the Peruvian coasts.

In addition to the weather conditions, Peruvian producers use modern production, packaging and refrigeration technologies and have adequate logistics to reach the table of the most demanding consumers in the best conditions.

Varieties grown in Peru: In Peru, two types of mango are cultivated: frank plants (not grafted and polyembryonic), such as Criollo de Chulucanas, Chato de Ica, Rosado de Ica, which are mainly oriented to the production of pulp and concentrated juices and exported to Europe; and improved varieties (grafted and mono-embryonic), such as Haden, Kent, Tommy Atkins and Edward, which are exported fresh.

- **Chulucanas Creole Mango:** In the northern part of Peru, in the Chulucanas Valley, this variety of mango is grown along the coast. This variety of mango grows among cocoa, banana and avocado trees, and is for family use and commercialization within the same area. The most adaptable environment for its cultivation are low altitudes, in deep clay soils; the ideal temperature is around 15 degrees Celsius. It has an elongated shape, a smooth yellow surface. The pulp is the same color, very juicy in consistency and quite sweet in taste. Its harvest time is from November to March. Its size varies between 5cm to 10cm. It is the one with the lowest proportion of pulp, since they have a relatively thick skin and a medium seed.



- **Haden handle:** It has a firm pulp due to its fine fibers. Bright red with green and yellow hues and white spots. Oval to round in shape. The green areas of the mango turn yellow as it ripens. Its weight fluctuates between 380gr to 700gr each. The peel is thick and represents an average of 7% to 15% of the weight of the fruit. The pulp represents 70% to 85% of the weight of the fruit and the seed can vary between 10% to 12% of the total weight. Its harvest time begins in the second half of November until the end of January (the harvest varies according to the region of the cultivars).



- **Kent handle:** Kent mango skins have a yellow background color and a red coating. Taking into account the load of the trees, the average weight of these fruits is 450 to 560 grams. The shape of the fruit is usually ovoid. The pulp is yellow or orange, very juicy. The seed coat is thick and woody, with an outer layer of fiber that can extend into the pulp.



- **Tommy Atkins handle:** It is a fruit that is produced in the Ancash and Piura regions. It is medium to large in size, up to 14cm long and 680g in weight. Oval or rounded, it has a bright yellow color with purplish spots, with numerous white lenticels. It has a firm pulp, with few fibers, fine, mainly around the seed, which is easily separated from the pulp.



- **Mango Edward:** The fruit is oval, oblong in shape with a wavy surface, usually weighing between 16 and 22 oz. The skin has little wax and is bright yellow with a pinkish to reddish tinge with small white flecks. The pulp of the fruit is tender, without fibers, juicy and of an intense yellow to orange color. The pulp has a rich, sweet flavor with a mild, pleasant aroma.



Characteristics and percentage composition of the fruit: the handle can be ovoid or oblong in shape. It has a large, flattened central seed with a woody body. Its size ranges between 4cm and 25cm in length and its weight varies between 150 grams or more per unit. Its color can be green, yellow, red-violet or orange and it has a smooth, glossy or matte surface. The pulp can be orange or yellow. Its flavor is aromatic and sweet at any stage of maturation.

Component	%
Peel and pulp	85
Seed	15

Production areas: The main mango producing region in said season was Piura with 434,105 tons, concentrating 81.3% of the total. It is followed by Lambayeque with 52,504 tons, Cajamarca with 11,028 tons, Lima with 7,875 tons, Ica with 7,496 tons..

The 2019/2020 mango campaign has reached a volume of 535,000 tons, of which 41.6% (222,664,468 kilos) have been exported as fresh mango.

Peru had 29,000 hectares of mango in 2019, of which 20,000 hectares were located in Piura and 4,000 hectares in Lambayeque, with the rest of the area being divided between Áncash, Lima and Ica, among others.



Nutritional value: Mango stands out for the set of nutrients and antioxidant substances found in its composition. A single piece of 200 g provides the recommended daily amount of vitamin C (about 60 mg) and 60% of vitamin A, in the form of beta-carotene. Mango is one of the most important sources of this nutrient. In addition to nutrients, mango provides other substances with beneficial effects on health. Tartaric and malic acids help counteract the effect of acidic metabolic residues.

Nutritional Value	Per 100g
Components	Per serving
Caloric value	202 kcal 844 kJ
Fats	1,3 g
- Saturated fats	0,3 g
- Monounsaturated fats	0,5 g
- Polyunsaturated fats	0,2 g
Carbohydrates	50,3 g
- Sugars	45,9 g
Protein	2,8 g
Dietary fiber	5,4 g
Cholesterol	0,0 mg
Sodium	< 0,1 g
Water	280,4 g
Vitamins	
-Vitamin A	0,0 mg
-Vitamin B1	< 0,1 mg
-Vitamin B11	0,1 mg
-Vitamin B12	0,0 mg
-Vitamin B2	0,1 mg
-Vitamin B3	2,2 mg
-Vitamin B5	0,7 mg
-Vitamin B6	0,4 mg
-Vitamin C	122,3 mg
-Vitamin D	0,0 mg
-Vitamin E	3,0 mg
-Vitamin K	< 0,1 mg
Minerals	
Calcium	37,0 mg
Copper	0,4 mg
Iron	0,5 mg
Magnesium	33,6 mg
Manganese	0,2 mg
Phosphorus	47,0 mg
Potassium	564,5 mg
Selenium	< 0,1 mg
Zinc	0,3 mg

Properties:

Protects the skin and mucous membranes

Due to its beta-carotene content, it is useful to protect the skin, mucous membranes, eyes and heart against the action of free radicals.

Alkalize and thin the blood

The weak organic acids that mango provides, once assimilated in the body, combine with minerals and give rise to salts that have the ability to fluidize and alkalize the blood.

Promotes the assimilation of nutrients

Mango has enzymes with properties similar to those of papains from papaya and bromelain from pineapples. These enzymes promote the assimilation of macronutrients and are partly responsible for making mango easy to digest.

Stimulates defenses

Antioxidant minerals and vitamins, along with phenolic compounds, help the immune system prevent and fight disease. Mango has quercetin, isoquercetin, astragalin, fisetin, gallic acid and methylgalate that have antioxidant effects.

Provides fiber

Mango, like all fruits in general, also provides a significant dose of fiber, which helps prevent constipation and lowers bad cholesterol, which protects the heart and circulatory system.

Harvest time: Peru produces mangoes during the first and last quarter of the year. This makes it possible to take advantage of the periods in which the main generators in the market do not produce, supplying the international market in those months.

HARVEST SEASON ACCORDING TO MANGO VARIETY

Variety	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Haden												
Kent												
Tommy Atkins												
Edwards												

Exportable Offer: During the last five years, Peruvian mango exports had an average growth of 14% each year, reaching US \$ 356 million in 2019. The good performance achieved was the result of two factors: the good reception of the fruit in the main markets and the strategic productive window of the country. In addition, in the last five years, the international demand for mango had a sustained growth, which was reflected in the increase in imports of the fruit, which increased by an average 12% each year. The higher growth rate of Peruvian exports over international demand was explained, in large part, because the Peruvian season runs between October and March, months in which the supply of other global suppliers is reduced.

Peru has managed to position itself as the third global supplier of mango -and the second in America-, with a 10% share.

The Ministry of Agrarian Development and Irrigation (Midagri), through the National Agrarian Health Service (Senasa), reported that Peruvian mango exports, during the 2020-2021 campaign, reached 232,683 tons, despite the health emergency caused by the covid-19 pandemic. In this 200-2021 campaign, Peruvian mango shipments were destined for 34 international markets.

**EXPORTABLE SUPPLY OF MANGO IN TONS
(2019-JUN2021)**

MONTH	2019	2020	2021
January	20,702	20,469	20,962
February	17,468	19,525	17,634
March	24,256	19,265	18,063
April	21,389	19,192	19,358
May	18,122	20,257	19,106
June	19,955	15,965	17,175
July	17,039	15,350	-
August	14,581	16,888	-
September	17,319	15,529	-
October	16,403	16,154	-
November	15,093	15,269	-
December	19,969	17,164	-
TOTAL	222,296	211,027	112,298

Source: SUNAT

Preparation: The Commercial Intelligence Unit-SSE

Consultation date: September 2021

Presentations and uses: export forms can be fresh mango, preserved mango, juices and pulps

Fresh mango: Packed in corrugated cardboard boxes and waxed with the brand specified by the customer. The presentation in terms of weight is 4 kg per palletized box in pallets of 240, 252, 264 boxes (standard). Corrugated cardboard boxes with Internal measurement 27.0 x 30.5 x 10.0 cm, 5,280 cartons, per container. For their commercialization they are packed in thin and ventilated layers of special cardboard or wood whose bottom has a spongy material, so that the fruit does not suffer any blow to avoid deterioration. The fresh mango is exported with and without hydrothermal treatment according to the demands of the markets.

**MINIMUM AND MAXIMUM
DIAMETERS AND WEIGHT FOR
MANGO EXPORT**

Diameter	Average unit weight (g)	Weigth (gr)
Diameter 4	100	900-1100
Diameter 5	800	720-880
Diameter 6	667	600-730
Diameter 7	571	515-625
Diameter 8	500	450-550
Diameter 9	444	400-485
Diameter 10	400	360-440
Diameter 12	333	300-365
Diameter 14	286	260-315
Diameter 16	250	225-275
Diameter 18	222	200-240
Diameter 20	200	180-220

Canned mango: It is exported in pieces and frozen cubes, packed in corrugated cardboard boxes with polyethylene bags.

Mango juice or pulp: Simple pulp with 14 to 16° Brix and concentrated with 28 to 30° Brix. 200 kg metal drums and double inner polyethylene bag. 5-20 kg plastic drums and 18 kg metal buckets

Presentations and uses: In its presentations, whether as pulp, frozen, natural, canned, in juices and others, the mango is used in the cereal industry, energy bars, pastries (ice cream, mousse, cakes, brownies, etc.), chocolate, etc. juices and derivatives.



