



MEXICAN HASS AVOCADO CERTIFIED GRAFTED PLANTS & SEEDS





What we do Smart Exports

OUR DEPARTMENTS :

1. Logistics & Supply Avocado's Chain
2. Orchard Development Products
3. Mexican Market Sales
4. International Market Sales
5. Packing House & Marketing
6. Orchards Quality Assurance
7. Customs Clearance & Legal
8. Worldwide Shipping
9. In-House Orchard Training
10. Private Label Services

“ Whoever is careless with the truth in small matters cannot be trusted with important matters. ”

Albert Einstein

The most trendy Fruit

WHY MEXICAN HASS AVOCADOS WIN'S WORLWIDE?

Hass avocado trees have high yields compared to other varieties and a mature tree can produce over a million blooms. Most Hass trees bloom twice a year and now with the newest grafted “Flor de Maria” variety there is a third and fourth* bloom. Hass trees start bearing fruit in three to five years and grow from 15 to 30 feet tall. The lifespan of an average tree is several decades.

Unlike other avocados, which have smooth green skin, the Hass avocado fruit has dark green bumpy skin that darkens as it ripens, eventually reaching a very dark shade that is almost black. Like all avocados, Hass avocados ripen only once they are picked from the tree and they can be left on the tree for several months after the fruit has matured.

When it comes to nutritional content, Hass avocados are higher in fat than other varieties, which gives them a richer taste and smoother, creamier texture. 80% of avocados consumed in the world are Hass avocados, meaning all other varieties make up only a small proportion of the remaining 20%. In the US, this number rises to 95%.

95% OF AVOCADOS CONSUMED IN THE UNITED STATES ARE HASS

Welcome to Invertebral. We are flexible.

We have the largest nursery in Mexico to create the best Hass avocado grafted plant for export

Every year we advise hundreds of producers in Mexico and abroad to carry out their avocado plantations and improve those that already have

Unlike many other avocado varieties, Hass avocados are native to California, not Mexico. The growing Hass avocado popularity during the 1950s was so great that producers in Mexico started growing the Hass over other indigenous varieties. In fact, the world's largest producer of Hass avocados is in Mexico and shipped over 1.7 billion pounds of the fruit to the US in 2018.

In Mexico, the climate is particularly suitable to growing avocado trees and Hass trees flourish there. Some of the highest quality avocado trees in Mexico are cultivated by grafting the Hass avocado with other native varieties. In this way, the Mexican Hass avocados are able to grow on trees with strong roots, ideal for the local soil conditions.

The main avocado growing states in Mexico are Michoacán and the State of Mexico, often referred to as the 'Avocado Belt of the Mexican Republic'.

Michoacán accounts for over 92% of Mexico's avocado production and has over 30,000 groves of Hass avocados. Nurtured by the Mexican sun and rain, the trees bloom 365 days a year, and avocados can be harvested every month in the year, depending on the elevation of the orchard (level sea).

Mexican growers developed a unique technique to create the perfect fruit. By manually taking the best of the Pattern avocado plant (seed & branches) and the best of the Criollo avocado plant (the roots), and grafting from one plant to the other one, they literally hand make the most perfect avocado plant in the world: More resistant and productive.

The results: the beauty of the Hass fruit with the strong roots of the Criollo plant. Hand grafting two trees together is a painstaking process, but in three to five years, the small tree will start producing up to 750 pounds of fruit per year, harvested by a team of pickers. You will love our grafted Hass varieties.



Hass Avocado

MEXICAN FRESH PRODUCE EXPORT SERVICES



With a high content of vegetable oils and micronutrients such as vitamins E, A, B1, B2, B3, fatty acids, proteins, minerals, also avocado oil has a high content of antioxidants, so the avocado is considered a super food. Its shape is like of a pear, its skin is green and has a creamy pulp and green color that covers a large inedible brown seed.

Avocado from Michoacan, Mexico is considered the best in the world and the most demanded by the US market with 82% of total annual consumption. It is also exported to the European Union and the Asian market.

We have the ability to provide up to one full cargo load shipment per week (20 tons) in standardized boxes of 25 pounds (11.3Kg) or 10 kilograms. Please, visit us and check our Co-packing house.



USDA - Global G.A.P. - Primus GFS - Organic

CALIBRE	CALIBRE	CALIBRE	CALIBRE	CALIBRE	CALIBRE	CALIBRE
32	36	40	48	60	70	80
+ De 330 gr.	300 a 330 gr.	265 a 300 gr.	205 a 265 gr.	170 a 205 gr.	150 a 170 gr.	120 a 150 gr.
Super	Super	Super	Extra	Primera	Mediana	Comercial
22 12 12	26 14 14	40 16 16	24 48 18	30 60 22	70 24 24	84 26 26

Avocado Seeds

HASS SEED PATTERN FOR WORLDWIDE EXPORTS

The Hass-Avocado pattern seeds are selected and treated individually by means of plant safety protocols in our certified orchards and nurseries.

For export purposes, we sanitize the seeds with different chemical processes in accordance with the import standard that regulates each buyer in each country.

The seeds are packed in plastic boxes of 10 kilograms, in which approximately 750 pieces fit.

All of our seeds come from orchards certified by the Mexican federal authority and generally from those that were also verified by the United States Department of Agriculture (USDA), for the purpose of certification of pest and borer free.



International Air Shipment Hass Avocado seeds packing.



Michoacán





Grafted Plants



HASS-MÉNDEZ, MÉNDEZ-MEJORADO, MÉNDEZ-FLOR DE MARÍA AND CREOLE BUDWOODS

The avocado trees we produce start in patterns with a very good genetic heritage. What we achieve from a rigorous selection of Michoacan Creole avocado seeds.

They come from healthy, vigorous trees with a very good fruit load. The seeds are sanitized and treated with friendly and authorized chemicals. The budwoods come from Certified Hass Avocado Orchards. All the budwoods are approved for grafting in Michoacan state.

1.-Hass-Méndez Normal grafted avocado plant variety.

It is the best known and highest demand in the markets. The Creole avocado pattern is grafted with Hass avocado sticks, selected in certified export gardens. This guarantees that they are free of diseases and pests and with adequate nutrition.

Normally it is cultivated in lands with altitudes from the 1200 msnm until the 2500 msnm maximum.

2.- Méndez-Improved selection avocado grafted plant.

It is called Hass Méndez - Improved, because it begins flowering 3 months before the Hass-Méndez Normal. Which also means that it is harvested 3 months before, which benefits the producer in prices and investment recovery. With proper management you will have your first crops after two years of planting.

It has been observed that it responds well in warm terrain with altitudes up to 1800 meters above sea level. You need support water in the dry months. It can be established in poor lands.

In the Mexican states of Michoacán, Veracruz and Jalisco, this Méndez - Improved Avocado is being cultivated a lot, in a system of ridges or ridges (high grooves) and terraces. What helps the plant to have a good drainage, Here poor land is used, but with water. These factors make the tree bear fruit before the normal Hass.

Grafted Plants

EACH BLOOM CYCLE HAS A NAME AND CORRESPONDS TO THE TIME OF YEAR WHEN FARMERS HARVEST AVOCADO

3. Hass - “Flor de María” (Maria’s Flower) grafted variety.

It is a variant of prototyped quality in Michoacán, Mexico derived from the grafted subspecies called “Méndez-Improved”, which intends up to four annual blooms and that depends largely on the planting place, atmospheric conditions, humidity and mainly on the quality of the ground.

In general, the agricultural producers of Aguacate Hass “Flor de María” seek to obtain different fruit productions throughout the year (at least one additional bloom) and which are the following:

a) FLOR LOCA “Crazy Flower” (Full Bloom)

Avocados are ready for picking in orchards located below an elevation of 2,000 meters in June and everywhere in the state from July through September.

b) ADVANTAGED (Advantaged Bloom)

Avocados are ready for picking in orchards located below 1,600 meters from July to August, in orchards from 1,600 to 2,100 meters in August and September, and in orchards above 2,100 meters in October.

c) REGULAR/NORMAL (Normal Bloom)

It's during this bloom when the majority of avocados are produced. The crop is available in lower area orchards (1,100 to 1,600 meters) in September, in orchards below 2,100 meters in October, and in most all of the orchards in the state from November through February.

d) MARCEÑA-MARZENA (Bloom from March)

Avocados are ready for picking in orchards below 1,900 meters in March, from orchards 1,600 to 2,000 meters in April, from 2,000 to 2,300 meters in May, and from orchards at 2,300 to 2,500 meters in June.



2019 Pictures from an 5 years old Méndez-Improved “Flor de María” avocado orchard. Fruit average diameter 76.2 milimeters. Average Fruit Weight 287.2 Grams. Location: Capula, Michoacan, México. It is located at 2100 meters above sea level at coordinates 101 ° 23'36 “east longitude and 19 ° 40'25” north latitude.

4.- Aguacate Criollo. (Creole Avocado Pattern Seedling)

It is mainly used in poor land without water. As it is also more resistant to cold and drought, some producers begin planting with seedlings of Creole avocado and after one or two years they graft it with Hass Avocado. This is a NON-Grafted plant.





Our world exports sales procedures are based on the INCOTERMS 2020: EXW - CIF - FOB - DDP

Logistics

FREIGHT FORWARDING PROCEDURES FOR PLANTS



Our Invertebral Logistics office has the ability to send your product to any destination in the world, in less time and at competitive prices.

We have a lot of experience in air cargo shipment for your grafted plants, seedlings and pattern seeds.

In the subject of insurance, we fine-tune strategies so that your merchandise reaches its destination, as you require it.

Invertebral maintains alliances with the main lines of international merchandise freight forwarders in Mexico and abroad.

With Us you have no borders.

Orchard tips

SETUP FOR THE NEW HASS AVOCADO PLANTATION

1. Sowing Field Selection

Avocado can be grown in a wide variety of soils, from loam to clay, depending on the rainfall and the cultivation practices used. The characteristic that should prevail in an avocado orchard is that the soil has good drainage to avoid rotting problems in the roots, to which this fruit is susceptible.

Prior to planting the land must be cleaned. Then comes the disinfection.

2. The best time for the establishment of the new avocado plantation

As long as water is available and the weather allows it, planting can be done at any time, and otherwise it must be done in the rainy season, so that the plants have the opportunity to take root well and do not suffer in the dry season.

3. Avocado plantation systems and densities

There are various systems for planting, the most common are the picture, the tresbolillo, the quincuncio and rectangle. In the case of steep terrain, it can be done following contours.

4. Types or planting configurations

a) - *The Real Frame configuration.* In this type of planting the distances between plants and between lines are equal (5x5, 8x8). It is used on flat or low slope terrain. The real frame can be a square where the trees are located in the vertices or in a rectangle (6x9, 5x7).

The distance will be conditioned to the management system to which the plantation will be subject, to the type of soil, topography and other factors.

Density of avocado trees per hectare (For two planting systems)

Distance between trees (mts)	"Real Frame"	"Tresbolillo"
5 X 5	400	462
6 X 6	277	321
7 X 7	204	237
10 X 10	100	115

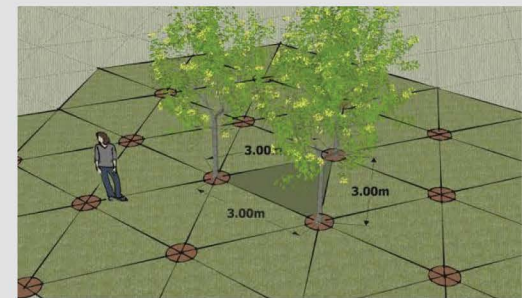


Fig 1. "Tresbolillo configuration".

In *High Density* it is being sown, especially the Hass Mèndez (Improved-Flor de María) at a distance between plants of 3 m and between lines of 6 mts. So the density is 500-600 plants / ha. It is important to have an irrigation system.

b) - *The Tresbolillo configuration.* (Fig 1) With this type of plantation, the planting density per hectare is increased by 15% compared to that of the actual frame.

c) - *The Terrace Method configuration.* It is applied in areas with a lot of slope. Planting is done based on the contours drawn in the lot. The terraces can be



Invertebral Fresh Produce México, S.A. de C.V.

**Address: Camino de los Gatos 145 - 3
Colonia Vista Bella. CP. 58090
Morelia, Michoacán, México.**

**Mexico Nursery
Giovanni Fuentes**

**Email: giovanni.fuentes@invertebral.mx
Whatsapp: +52 1 443 3778150**

**International Sales & Advising
Ariel Muñoz**

**Email: ariel.munoz@invertebral.mx
Whatsapp: +52 1 452 2693414**

Russia Sales

**Anna Berezhnaya
anna@invertebral.mx**

Whatsapp +52 1 55 78447049

Website: <https://www.invertebral.mx>