



DON PEROLETE

Hay momentos que se
merecen la mejor patata



"El rey Federico II examinando un cultivo de papas. König"



"Vincent van Gogh: Cesto con papas (1885)."

Nº1 CULTURAL HISTORY OF POTATOES

Potatoes were first grown between 8000 and 5000 BC in an area that would be Peru and the north west of Bolivia today. Since then it has spread around the world and has become a basic food in a lot of countries.

From America to Europe

Native people from the Andes grew different varieties of potatoes for centuries. The Cayambi calendar ended years with the harvest of this tuber. Its growing was so developed that the different types and their properties were very different from the original plant naturally evolved. For these peoples, potatoes were their primary available sustenance.

Potato flower

Europeans found it very tasty and tried to have great amounts of them for their trips. Back to its origin, at first it was considered a botanical rara avis, that clergymen and noble people alike grew in small pots, but they were considered too valuable for food.

Introduction of potatoes in Europe

A lot of generations went by until this botanical marvel became a main source of food for Europeans. In the European conditions, with longer summer days, the plant produced smaller tubers than in its original area, nearer the Ecuador. This problem was first identified, and later solved by adapting the conditions of farming. Last, the potato preparation was much simpler than cereal: potatoes didn't have to be treshed, ground, and needn't be boiled, all those necessary for bread. Back then, Ireland was the English colony that had to export cattle and cereal to the city. In these conditions, potatoes were very often the only source of food for farmers. The island of Ireland was so isolated from Europe that a century would go by before the noblemen and kings of Europe moved this botanical marvel from gardens to orchards.

“The first time potatoes were grown in Germany was in 1647 in Pilgramsreuth, next to Rehau, ruled by the Hohenzollern dynasty,



and in 1649 in Listgarten, Berlin”

Elshotz called the potato, in his book *Flora marchica*, when it was still considered a decorative plant, “Holländische Tartuffeln” (Irish truffle). In Prussia, Ferdinand II the Great tried to grow potatoes extensively. His try for this is not as well known as his war actions, but in both the Prussian army played an important role. He is believed to have grown the first potato fields in Berlin and made his soldiers look after them. Then, farmers, as the king wished, stole and tried this “earth appl
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It is certain that Ferdinand II helped accept potatoes as an order, as on 24 March 1756 he issued an order to grow potatoes. Also in Switzerland it was introduced as an exotic decorative plant. One hundred years later.

At the beginning of XVIII century, it began to be grown as food. Its farming conditions were similar to those in Peru. However it was not grown at 4000 m of height, as in Peru, but at 2000 m. Potatoes became a popular food very quickly.

From the beginning of the Industrial Revolution in England and later in the rest of Europe, feeding the ever growing city population became a major issue. On the other hand, rural population fed on what they themselves produced. People living in the country had a little orchard where they grew their own vegetables and didn't have to buy them. For city dwellers, fruit and vegetables were inaccessible. Potatoes gave them, besides the necessary calories, trace elements and vitamins, something no other food at their reach could give. In Spain the areas where potatoes were grown set up in coastal cities which received ships from the New World. So Andalusia and Galicia were first, before the Basque Country.





Nº2 POTATOE

Belonging to Solenaceae family, whose scientific name is **Solanum tuberosum**..

“It is a herbaceous plant, lively, dicotyledonae, with an outside system and an subterranean system of a rhizomatous nature from which tubers come from.”

Roots

Branchy, with a lot of fiber, long and thin. Roots have a weak penetration power and can only develop in a soft soil.

Stems

Thick, strong and spiky, at first straight and later bent to the ground. Stems are produced from the inside of the tuber, being its height from 0,5 to 1 metre. They are green because of their chlorophyll all along its length.

Tubers

It is the edible part. Each plant produces from 5 to 10 tubers. Our variety is characterized by its high content in dry matter, its yellow colour and exquisite flavor. Today, on of the best kinds for frying the popular “chips” potatoes.

Leaves

They are complex, imparipinnate and with primary, secondary and at intervals follicles. The leaf nerve is reticular, with a higher density on nerves and in the middle



Nº3 FROM THE FIELDS TO THE SACS

1. Soil Preparation

The soil preparation's goal is to improve its structure to make stems get out more easily, facilitate the reticular development and the tubers. When preparing the soil herbs are eliminated and fertilizers are added. Although this may vary according to the type of soil and its state, the process consists basically of:

Raising labour.

Of about 20/30 cm of depth, made to eliminate the remnants of the previous harvest. Also one of its goals is burying the stubble of the previous crops, improving the structure of the soil and making water filter through it more easily, also incorporating fertilizers if necessary.

This is a labour with many different variations according to the type of soil, time of year, etc... These tools are commonly used:

- **Dumping plough.** It makes the soil wavy, what makes oxygenating and watering easier. This is recommended for hard soils or those with an excess of water. Also if it is very soon before seeding. Its disadvantages are an excessive moving of the earth and the creation of a labour sole.

- **Earth crumpling.** It is a surface labour, of about 15 cm, made from 1 to 4 weeks before seeding, with the goal of crumpling the earth for labour. It is advised to do it once with some time to go and a second time days before the seeding.



2 Fertilizing

Nutrition needs

Nitrogen, Phosphorus, Potassium, Magnesium and Calcium, are the major elements which feed the potato. Other important elements, although not as much are Sulphur, Zinc and Boron.

- **Nitrogen.**

It is essential in the growing of the crop, as it favours the leaf development and enlargement of tubers, but if there is too much of it, it slows down the process, reducing the crop.

- **Phosphorus.**

It favours root growing, quickens tuber formation and induces the formation of a higher number of tubers, improving its quality.

- **Potassium.**

This is a quality factor. It favours starch formation a gives the plant a high frost & drought resilience. It also helps with fungus-related illnesses. It also helps tubers to be bigger (it increases the percentage of big ones) and improves its preservation. Potassium needs are estimated in 9 kg of K2O per tuber ton.

- **Magnesium and Calcium.**

Potatoes can't survive the lack of these. You have to be especially careful with Magnesium in soils that are light or rich in Potassium, and with Calcium in the case of acid pH soils. The needs are about 1 kg of MgO and 4 kg of CaO per ton.



FERTILIZING NEEDS

It is risky to advise on generic fertilizing needs. For an average harvest of about 40 tons per hectare, the basic global needs would be:

N	175 – 200 kg
P205	70 – 100 kg
K20	300 – 350 kg
MgO	140 – 160 kg
CaO	35 – 40 kg

Organic Fertilizing. Potatoes are a crop which improves the physical conditions of the soil and tuber development.

3. Seeding

Seeding materials

Potatoes clone themselves, through complete tubers.

The amount of tubers harvested (and consequently the kilos) doesn't depend entirely on the number of plants in the field, but also on the number of stems.

“On average, each stem has between two and four commercially valid potatoes, depending on variety”

Seed preparation for planting.

It is advisable to disinfect the seed, through the application of some fungicide (as Flutalonil 50%, Mancozeb 43% or Metiltiofanato 45%) to avoid fungus related failures to grow.

Time of seeding

Depending on variety, and, above all, area of production, the time of year for seeding in Andalusia can go from mid December until the end of January, for harvest from mid May to end of June.

Position of seeding

This is the distance between seeding furrows and the distance between tubers in each furrow (45000 plants per hectare)

4 Watering

The normal development of this crop requires constant presence of water in the soil. The most widely spread watering methods are sprinkling or dripping.



5 Harvesting and Storage

· Harvesting:

This is one of the most delicate actions in this crop. It is carried out when the skin is completely formed and the tuber is ripe. Specifically, our variety called "agria" needs level sover 18% of dry matter to be the best variety to be fried.

· Measuring:

The minimum size of our potatoes is 45mm and the maximum is 90-100 mm. All that to get big slices of chips.

· Storage and preservation:

Once measured, it is stored in wooden crates for better preservation, as air circulation improves and, so being able to have the product stored for longer periods of time. All that at a humidity level of 80-85°



Nº4 PRODUCTION PROCESS

The market of fried potatoes (chips) as a 100% natural product, is growing very quickly, positioning itself as a very good option for our company, as we grow, store and produce them until its delivery to the final customer. This being the best version of a handmade flavor.

Stone remover

In this function, all stones and mud are removed.

Potato peeler

This is for the peeling of the potato. This is carried out by abrasive action of the pieces called abrasive group. These pieces have the appropriate porosity.o abrasivo, piezas con porosidad apropiadas a la función.

Inspection belt

On this belt we carry out an visual inspection of all potatoes to discard those that are not up to our standard.

Potato cutter

This is a mechanized process with special blades for this type of chips potatoes.

Frying Pot and Salting

It is a stainless steel machine that fries the potatoes. Chips are salted in a mechanized way with the exact amount.

Cooling belt+ Multihead packer

This is where the product is loaded for cooling and later packing. It allows us, by its weight, to adjust the amount needed for each format.

Metal Detector+ Packing

It detects all kinds of metal (aluminium, Iron, Stainless Steel) and the excess of humidity inside the bags. Then it organises bags in bigger crates and closes them.



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Nº4 ELABORATION PROCESS

1 Pot Loader 2 Potato Frying 3 Oil Draining 4 Weighing 5 Packaging

6 Final Product Package





Nº5 THE PLEASURE OF CHIP POTATOES

You eat them non-stop. For some reason you can't stop eating them until the bag is empty.

"According to research, this type of snack stimulates the brain areas related to pleasure and addiction. There are a lot of fans of this snack as this is something to eat as a pre-lunch nibble, the afternoon bite or at dinner in any household". Another addictive effect is its crispy nature (some are even advertised as triple crispy).

Also its salt "something we don't know or simply the mixture of various factors can be the origin of the pleasure that prevents anyone from stopping eating them". Another attractive element of this product that is an issue these days is the absence of gluten, as its elaboration is completely natural.



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