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Influence of normative requirements on the quality table olives in box metal can of a food unit in Morocco

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ABSTRACT

Table Olives are considered among the most used and most preferred products in various dishes in Morocco and external Morocco, however, find time and the phase of globalization and the competition to win other external markets and in our treated here at number 5 customer case, successive customer complaints that sometimes happens to 75% per year due to poor application settings packaging the product in question and which are normative requirements, regulatory or customers or business. However, the application of these parameters in a rigorous manner by qualified or have undergone training and supervised by responsible operators result in a quality product in a remarkable manner minimizing customer complaints and at the same time fills their satisfaction.

KEYWORDS

Table olives;
Competitions;
Complaints;
Packaging requirements.

INTRODUCTION

The table olive is the fruit of certain varieties of the cultivated olive (Olea europea L)[1] particularly clean recognized in this destination.

The olives are considered the fifth basic product in Morocco, the latter product 1315794 MT of table olives and so he takes the fifth position worldwide behind Turkey with 1820000 MT and to the Syrian Arab Republic with 1049761 MT[2] Table olives are becoming popular worldwide, monounsaturated fatty acids. Approximately 75% of the lipids of the olive and its oil are in the form of monounsaturated fatty acids (MUFA). The AGM consumption is associated with a decreased risk of cardiovascular disease[3]. The AGM are known to lower blood total cholesterol and LDL ("bad") cholesterol in the blood, when they replace saturated fats in the diet[4] fatty acids In addition, they could also increase the level of HDL cholesterol ("good") cholesterol blood when replacing some carbohydrate food[5].

Finally, the AGM protect LDL cholesterol ("bad") cholesterol oxidation to help prevent atherosclerosis[6]. FYI, 100g of olives provide 8g to 12g of AGM, while 100 g of olive oil provide six to

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eight times.

Antioxidants. Antioxidants are compounds that protect body cells from damage caused by free radicals. These are highly reactive molecules that are involved in the development of cardiovascular disease, some cancers and other age-related[7] disease, several studies have clearly identify the phenolic compounds of olive oil and to verify the effects on health. We know a little less antioxidant profile of the olive and the benefits that its consumption could provide. It is known that the variety, maturity and storage of olives are factors that influence their antioxidant content[8].

In general, black olives contain three to four times more phenolic compounds and olive green and possess greater antioxidant capacity in vitro[9], hydroxytyrosol is the main phenolic compound of green and black olives[10]. At equivalent weight, they contain four and ten times that of hydroxytyrosol in olive oil[11].

Due to the antioxidant content of olives, it is possible to assume that regular consumption could bring similar to those observed with the benefits of olive oil[12].

However, in case of need in the short year, table olives must be contained in a manner that allows them to retain their organoleptic characteristics and in hygienic conditions.

Some organizations transformations of food products for export, receive continuously customer complaints due to poor product applications, business, regulatory and customer requirements.

In our work we will try to apply different requirements requested in a processing table olives in Morocco receipt of the product to the shipping and to make adequate and effective for all non-conformities encountered corrective actions.

MATERIALS AND METHODS

The application was made in a Moroccan company processing food products including table olives for export.

As the company is trying to have the ISO22000 certificate, it shall ensure the implementation of all requirements of the management system for the safety of food products according to the requirements of ISO 22000 and all International Code of Practice - [13,14] and other relevant Codex texts such as codes of practice hygiene.

The company is spread over an area of 500 m^2, with a number of 200 operators including 100 working a permanant way and 100 on a temporary basis for the companion.

Equipped with material handling and processing of table olives in food stainless receipt to shipment, in a manner tailored to meet the requirements of a management system for the safety of food products according to the requirements of ISO 22000.

The company receives daily up to 100 tonnes of fresh olives tables in ventilated plastic crates of about 25kg each, arranged on top of each other in trucks designed for this operation.

The manufacturing steps of table olives are:

Reception

It happens internally the company, before moving to balance weighbridge to be weighed, a visual inspection must be performed over taking a sample to be analyzed to see the percentage deviations, color and size dominat, if the product is consistent and it will be accepted in this case it happens to balance once weighed it on an area reserved for unloading, this operation is carried out by workers who pay cash in bulk bins stainless identified and transported by a forklift inside the company to be calibrated.

Calibration

The operation is done in-house business in a place reserved for this work, bulk bins containing stainless steel table olives are poured into a tank containing water and renewable treaty to pass through calibration of an elevator.

Two controls is realized, one morning and one in the evening to ensure compliance caliber, that is to say to take 100 g of fruit and checked by a simple count if you are in the reserved for each size range is:

16/18 for class 1 fruit
19/21 for class 2 fruit
22/25 for class 3 fruit
26/29 fruit for 4 gauge
30/33 fruit for Grade 5

34/37 fruit to size 6
38/42 fruit for 7 gauge
43/50 fruit to 8 gauge

Chemical treatment

Chemical treatment is an operation that takes place just after calibration in tanks intended for the operation of 14 tonnes each, the caustic soda solution must be prepared 48 hours ahead to avoid any risk of skin defects.

And depending on the maturity, the caliber and the climate conditions that are suitable concentration which penetrates more or less up to 2/3 of the skin of the fruit to remove the bitterness of the fruit applied, followed by appropriate washes to remove if there's traces of caustic soda.

Put in barrels or tanks

Once properly washed and a suitable brine is added, the olives are pumped into barrels or tanks or clean and identified it triggers fermentation. Monitoring is realized long fermentation cycle to see the evolution of fermentation parameters and are pH, acidity, total coliforms, faecal lactic acid and yeast. The estimated completed fermentation pH below 4.5. And that takes a period of time between 40j and 90j. After it there's phase conservation returns.

Storage

In the case of excess proceeds to the company store olives in brine in barrels of 180kg plastic or in tanks in fields 24 tonnes each, until needed.

Packaging

In case of need for producing a command, the stored olives are fed by means of a particular pump to the running strips for sorting

Triage

Is to remove the foreign body, noncompliant olives (fruit showing decay, crush, another color or another odor)

The operation is carried out by operators equipped with a light work consistent, uniform and have undergone training on good manufacturing practices and good hygiene practices. And follow the warnings and instructions of a qualified corporal.

Similarly, a quality control officer who is undergoing training by the quality manager, monitors, controls and noted a definite frequency range settings and information about the activities suffered the product at this stage on a specific record.

Whitening

Reduce the microbial load of the semi finished product laundering aims and represents an adjunctive

Getting cans or jars

All material is in contact olives shall comply with regulations relating to packaging in contact with food[15] changes relating to materials and articles intended to come into contact with foodstuffs, products and beverages for human or animal).

Metal cans or glass jars that are already compliant, come by a conveyor to be filled by an adjustable filler that works by means of trans-rotation movements, the container should be well filled with the product (including packing medium cover) which should occupy not less than 90% (minus any necessary head space according to good manufacturing practices) of the water capacity of the container[16].

Once the jar or box will be filled, they then go through a balance.

Weighing

It is realized with the aid of a reliable scale, valid and calibrated by a national or international organization recognized and calibrated before each use and whenever possible[17]

Juicing

The brine must be clean, free from foreign matter, have a color, flavor, odor and must meet hygiene

Crimping or capping

After crimping metal cans, vacuum measurement and decortication of the box is carried out at a specific frequency to measure and verify if the hooks of the body and background meet the requirements.

Similarly, a control is made to measure the pressure and the set of the capsule relative to the jar.

Pasteurization

Once the cans or glass jars are filled with prod-

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uct and sealed, they will be passed through a pasteurizer all that is black olives in dry salt or black olives ways checking and green olives, or through a sterilizer all that is candied black olives

Marking

Marking involves passing jars or cans on a rolling strip equipped with a photocell connected to a printer, once the jar or box is detected it will be marked by a specific code that shows in most cases date of manufacture, date end consumer, the product, the size and the code identifying the company.

Labelling

The product covered by the provisions of this Standard shall be labeled in accordance with Codex General Standard for the Labelling of Prepackaged Foods[18].

In addition, the following specific provisions apply:

Cartoner

Cans and jars already marked and labeled, are put in boxes and identified specific cartons

Palletization

The boxes are arranged in an appropriate manner on a suitable range, respecting the required weight.

Expedition

Once the order, the number of pallets or the amount requested is suitable it will be loaded on a centennial to be sent to the intended destination.

RESULTS AND DISCUSSION

Reception

In addition we must ask the supplier sheets chemical treatment of olives to be used if it has approved the product, use the DAR (date of harvest) and MRL (maximum residue limit), you must identify the travel a lot number, must take samples for microbiological and physicochemical analyzes must establish control cards at the reception to save the parameters and criteria for each of the activities and preserved.

Calibration

The control template is a definite frequency Depond state calibrator, cable and variety calibrated, and so you always have fruit uniform size for the same caliber. And the results are entered in the records are kept.

In case of abnormality in the size of the product, the calibrator will be set, and the product in question must be re-calibrated for a second time, must complete a form of nonconforming product and corrective actions and the retained

Chemical treatment

Basins chemical treatment must be completed within 1/3 water to avoid the clash of olives against the bottom of the pool, once filled with olives of the same caliber and drain the water, sodium hydroxide solution caustic must be emptied quickly to avoid all risk of heterogeneity, and every time you must complete a checklist in which to record all information such as: date, time, number of the basin, the concentration of caustic soda, olive type, provenance, size, duration of treatment and the number and duration of washing, and the kept.

Put in barrels or tanks

The barrels and tanks shall be identified and be of food grade sheets, Brine shall be composed of drinking water or treated, and salt must be accompanied by a record food Food grade, this requires strict adherence BPH.

Monitoring for even the Baume degree, pH, state, color and odor is mandatory.

Similarly, a brine recirculation with removal of part of the starter is required then inoculated by the mother brine consistent drums or tanks with brine shows a problem of fermentation. The activity must be registered and preserved.

Storage

Storage must be done in a specific place and containers identified and appropriate for each type of product in accordance with good hygiene practices, a proper brine watering should be done once a day and as much as possible. The activity must be recorded and retained.

Packaging

The pump and the accessories should be well washed with a qualified team and approved cleaning products,

Sorting

This is considered mandatory for it removes leaves, differentiate between colors and eliminates all physical dangers, however it there's little solid physical body (iron) that can escape this operation and subsequently causes of serious consumer health problems.

However in addition to the manual sorting operators must install sucking machines leaves and sorter machines colors, a metal detector or fix magnets, All these machines need to be calibrated and adjusted before each starting work and whenever possible, all activities must be registered and preserved beings.

Whitening

This is a step that reduces the microbial load of the product, either with steam or water at a specific temperature, so it is a step that requires hardware and highly clean conditions, is say must validate the cleaning and disinfection[19]. it must therefore control both temperature and time parameters and even the type and condition of the product. All activities are recorded and stored beings.

Getting canister or jar

For each batch of visually consistent packaging that comes into contact with food must fit a proof or certificate of food, which must be preserved.

Each box or jar before placing the filling operation must be rinsed with a jet of steam and well drained.

Weighing

This is a step that requires working with a scale calibrated and certified by a certified organization 17025, adjust the balance before the start of each work, a control to a definite frequency to check the weight found with the weight requested is mandatory.

Similarly, it should be noted on a separate sheet all information regarding this transaction, such as date, time, batch number, peas requested, found the weight, size of the box, the template, the client and retained.

Juicing

This is an operation that requires a good control of the parameters of the juice as pH, temperature, Baume degree in the case of a brine or brix case of a syrup, Water or juice liquid packing must be potable, and salt to prepare the brine or sugar to make the syrup must be edible and are subject to a certificate of food that must be kept from even all information and activities at this stage should be recorded and preserved.

Crimping or capping

Caps and lids should be fitted with an integrated gasket to ensure etanchieté container by crimping or capping[20] Any deviation monitoring at this stage to lead to corrective actions will reduce contamination to acceptable levels and thereby protect the health of consumers.

Pasteurization

This is a required heat treatment to inactivate pathogenic microorganisms all[21], it should be used during pasteurization for olives prepared in a brine having a pH d" 4.5. And sterilization for olives in brine prepared with a pH e" 4.5 considered a medium or may develop Clostridium botulinum strain, So we must control parameters, pH, temperature, time and pressure. For each type of olive, and record various information and activities and preserves.

Marking

The marking is to provide a code carrying all the information about the product in question as the batch number, the company code, caliber, type of product, date of manufacture and expiry date,

The control is done by sampling to verify readability and code compliance

Labelling

The labeling must be clear, legible and bears the name of the product and the list of ingredients must be listed in descending order of ingoing weight (m / m) at the time of manufacture of the product[22].

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Cartoner

The carton must be consistent and demonstrated a certificate of food and all cardboard damaged, wet or stained should be removed from the lot[23], a glued on cardboard label must bear the type of product, brand, item number per carton, carton number, weight and a code consisting of batch number and other information.

Palletization

This is an operation which consists in putting the boxes containing the product in metal cans or jars in a manner well arranged on a pallet and treated appropriately,[24] must respect the number of boxes per pallet and the total weight, then use straps and stretch film to secure the product.

It is therefore necessary to monitor and verify certain parameter as the number of carton, pallet number, the state of the palette, type of product and save these settings and keep.

Expedition

This is the final step, is to place the pallets in the container truck, it must be clean and destine this operation, it happens internally the company by means of a forklift. Two samples will be taken, one for microbiological and physicochemical analysis and the other to validate life.

Prior to the load must check the condition and cleanliness of the container must conform.

And to have a traceability system[25]

All information at this stage as: truck number, the number and size of the container, the number of pallets, the type of product, date of manufacture and consumption, the destination, the total weight of the product, date shipping, and the names of those responsible for the load. They must be recorded and preserved,

CONCLUSION

With the application of the requirements of quality standards for food products

Companies take advantage of having qualified and well-trained operators, system cleaning and disinfection although effective, adequate traceability system, and of course it gives a finished quality product that satisfies customers of the company and requested by other customers like that the customer complaint rate decreased to reach 5% and a gain of 15 new external market in a year.

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