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# Harvest, manipulation and commercialisation systems of pomegranate (*Punica granatum L.*)

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**SUMMARY** – The aim of the present work is to illustrate from a personal viewpoint (as manager of an agricultural processing firm) a pomegranate elaboration process from harvest to the national and international market distribution.

**Key words:** Pomegranate, harvest, elaboration, commercialisation.

**RESUME** – "Systèmes de récolte, manipulation et commercialisation de la grenade (*Punica granatum L.*)". Le propos du présent travail est d'illustrer sous un point de vue personnel (comme directeur d'une firme agricole de transformation) le processus d'élaboration des grenades depuis la récolte jusqu'à la distribution sur le marché national et international.

**Mots-clés :** Grenade, récolte, élaboration, commercialisation.

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## Introduction

This article presents a scheme of the harvest, processing and commercialisation before the pomegranate reaches the consumer:

- (i) Harvest system.
  - Handling in the field.
  - Cutting.
  - Transport and collection systems.
- (ii) Handling and packing in the storehouse.
  - Handling and packing lines.
  - Different types of packing and grading.
- (iii) Pomegranate commercialization.
  - Main consumer countries.
  - Pomegranate market distribution systems.

## Harvest systems

### Handling in the field

To the contrary of what the consumer and anyone who has not worked with the pomegranate believe, the skin is just as delicate as that of any other fruit. A bruise or scratch would cause a dark blemish on the shiny rind that does not actually damage the inside of the fruit but harms its external appearance and hence its commercial value.

### Cutting

For the reason mentioned in the previous paragraph, shears should be used to cut the fruit off, keeping it free from sharp twigs and placing it carefully at the bottom of the box to avoid bruising. Likewise, the crown (calyx) should be kept intact for a better appearance. Groups of workers are

distributed among different sectors so that each group cuts several times within their own sector thus ensuring the same degree of colour and hence ripeness.

The pomegranate is cut, according to colour, from mid-September onwards until the end of October. In the town of Albaterra (Alicante), the Jativa or Valenciana variety is harvested during August and up to the beginning of September. This variety is grown in approximately 5% of the total number of plantations, the rest growing the Mollar variety population (Melgarejo and Martínez, 1992). The Valenciana variety, which is also a variety population, is redder on the outside than the Mollar, paler inside and not as sweet. As the ripening period is very short and as rainfall in October can split the pomegranates, they are harvested as soon as the fruit has a high enough sugar content (14°Brix) even though the outside and inside colours are still not as red as the consumer would like.

## Transport and collection systems

Lorries and tractors and trailers are used. Due to the orography of the area, vehicles should be small, to make manoeuvre within the lanes and plots easier, avoiding unnecessary effort and loss of time.

## Handling and packing in the storehouse

### Handling and packing lines

The classical fruit conveyors are used. They size well by weight or by diameter. Bruising is to be avoided wherever possible.

### Different types of packing and sizing

Once the fruit has been sized, either on the conveyors or the packing tables, it is boxed, according to where it will be sold. Fruit is packed in boxes of 5 or 10 kg, made either of cardboard or wood. The sizes and types of boxes vary according to the different markets where they are sold.

### Sizes and types of boxes

Wooden, holding 10 kg:  
30x50x18 cm  
40x36x8 cm

Cardboard, holding 10 kg:  
30x50x18 cm  
60x40x11 cm

Wooden holding 5 kg:  
30x50x11 cm  
40x36x11 cm

Cardboard, holding 5 kg:  
30x50x11 cm

Sizes in 10 kg boxes:  
20-24-30-40-50-60

Sizes in 5 kg boxes:  
10-12-15-20-25-30

Sizes are determined by the number of pieces that fit in each box with net weights of 5 or 10 kg.

Pomegranates are packed in trays or in shavings and sometimes, when they are to be stored for a long period, they are also packed in 10-kg wooden boxes in sawdust.

## Pomegranate commercialisation

The sales channels of the pomegranate are currently directed all over the world. Due to their origin, they are mostly consumed in the Middle and Far East as well as in Mediterranean countries and the United Kingdom. Consumption is disperse and slow to take off, as western consumers consider it exotic and difficult to eat.

The Mollar pomegranate is sold in the following countries:

(i) England: to date this is possibly the most important country for the commercialization of the pomegranate. England is the main consumer of medium and small sizes, as in the past England had a large number of mining companies and due to its cleansing properties, miners consumed small pomegranates in rations. For several years and due to the reconversion of the mining sector, the sale of these small sizes is increasingly difficult in this country.

(ii) Holland: as with the rest of the fruit and vegetable products, Holland distributes to the rest of Europe and therefore we are faced with double competition.

(iii) Sweden, Finland, Germany, France, Switzerland and Italy – are consumers of bigger sizes: 10-12-15, mainly in 5-kg boxes.

(iv) Eastern countries consume medium and small sizes (20 and 25, in 5-kg boxes) and in increasingly larger volumes.

(v) United Arab Emirates and Malaysia. Normally about 30% production is destined to these countries. Boxes of 10 kg are normally made up and packed up with shavings and sawdust as the journey is by boat, by freight lasting for 12-14 days to the Emirates and 24-26 days to Malaysia. They are mostly large sizes; 24-30 with a small percentage of 40 and 50, in 10-kg boxes.

(vi) USA and Canada. Several shipments have been sent to these countries which produce varieties with a very red skin, similar to the Valenciana but with a non-palatable seed. The fact that these countries have their own market means that our pomegranate has a slower introduction, but in 2 or 3 years' time the sales will hopefully become more consolidated.

(vii) Spain. The sizes sold are mostly large, distributed through the traditional market in 10-kg boxes with shavings and through the superstores in single layer boxes, in 5 or 10 kg with trays.

At the beginning of the season certain quantities are distributed to all points of sale of all countries. These quantities are maintained according to demand and when sales cease, the product is held in cold storage until the markets clear. In this way the supply can be maintained until the beginning of January. Some businesses keep the product on sale until the end of February or even later.

For several years, trials have been conducted with pomegranate kernels that are presented to the consumer in a package with an attractive form of conservation as a minimally processed product that would be the definitive form of sale of fresh pomegranates.

## References

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