

# Seedless Dried Grapes / Sultanas

## Production and Processing



*Aegean Dried Fruits  
Exporters Associations*

*Cevat KOÇ*



# *History*

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Dried fruit sector of Turkey is one of the most prominent Turkish export sectors, with a past exceeding more than 150 years.

The main three crops of this sector are Sultanas (seedless dried grapes), dried figs and dried apricots.

With a significant place in domestic consumption and commercial activities in Turkey, these crops are identified with Turkish cities: Manisa, İzmir, Aydın and Malatya,

These crops are accepted as heritage to be turned over to future generations.

# *History*

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Turkey is the leader in the production and export of Sultanas due to high adaptability of the Seedless grape variety to the prevailing ecological conditions.

Turkey is gene center of Sultana (=Sultanina, Thompson seedless) variety.

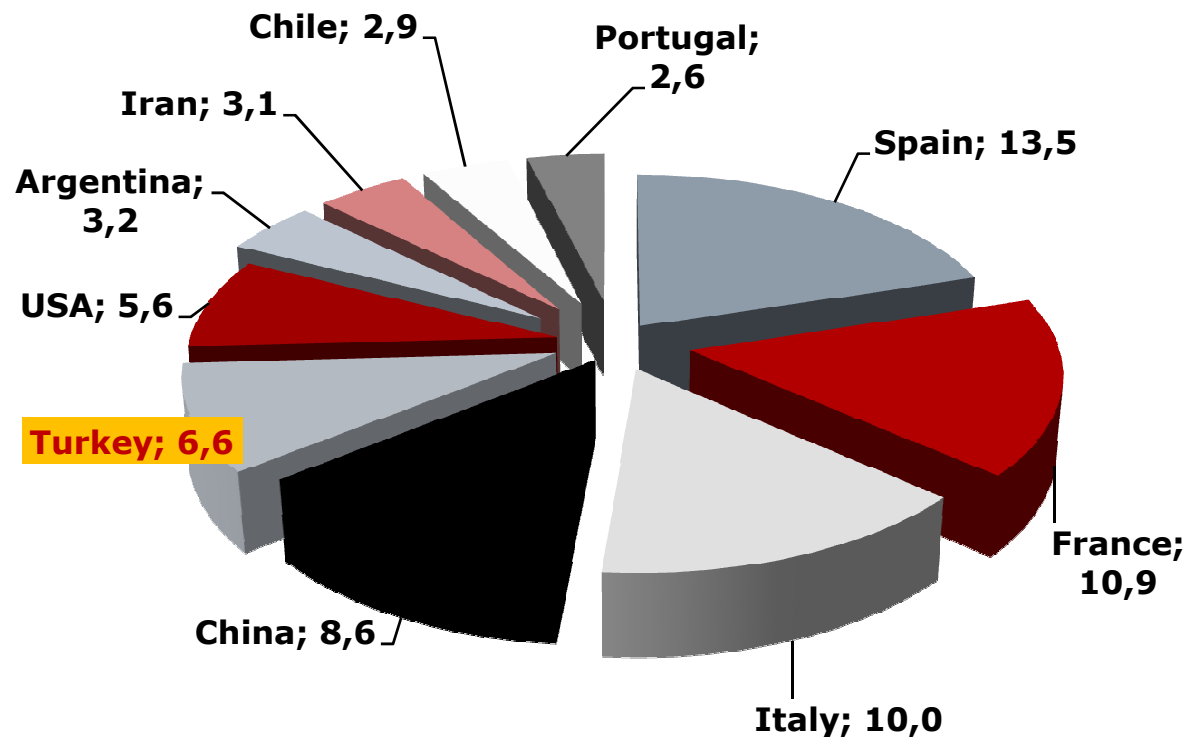
Viticulture has been one of the main sources of income in Anatolia for centuries and commercial drying is developed particularly in the Aegean region where major part is exported.

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# Distribution of Grape Growing Area in the World

## World Total 6.969.373 ha

No	Country	Area (ha) 2012	%
1	Spain	943.000	13,5
2	France	760.805	10,9
3	Italy	696.756	10,0
4	China	600.000	8,6
5	<b>Turkey</b>	<b>462.296</b>	<b>6,6</b>
6	USA	389.349	5,6
7	Argentina	220.000	3,2
8	Iran	215.000	3,1
9	Chile	204.000	2,9
10	Portugal	179.500	2,6
WORLD TOTAL		6.969.373	

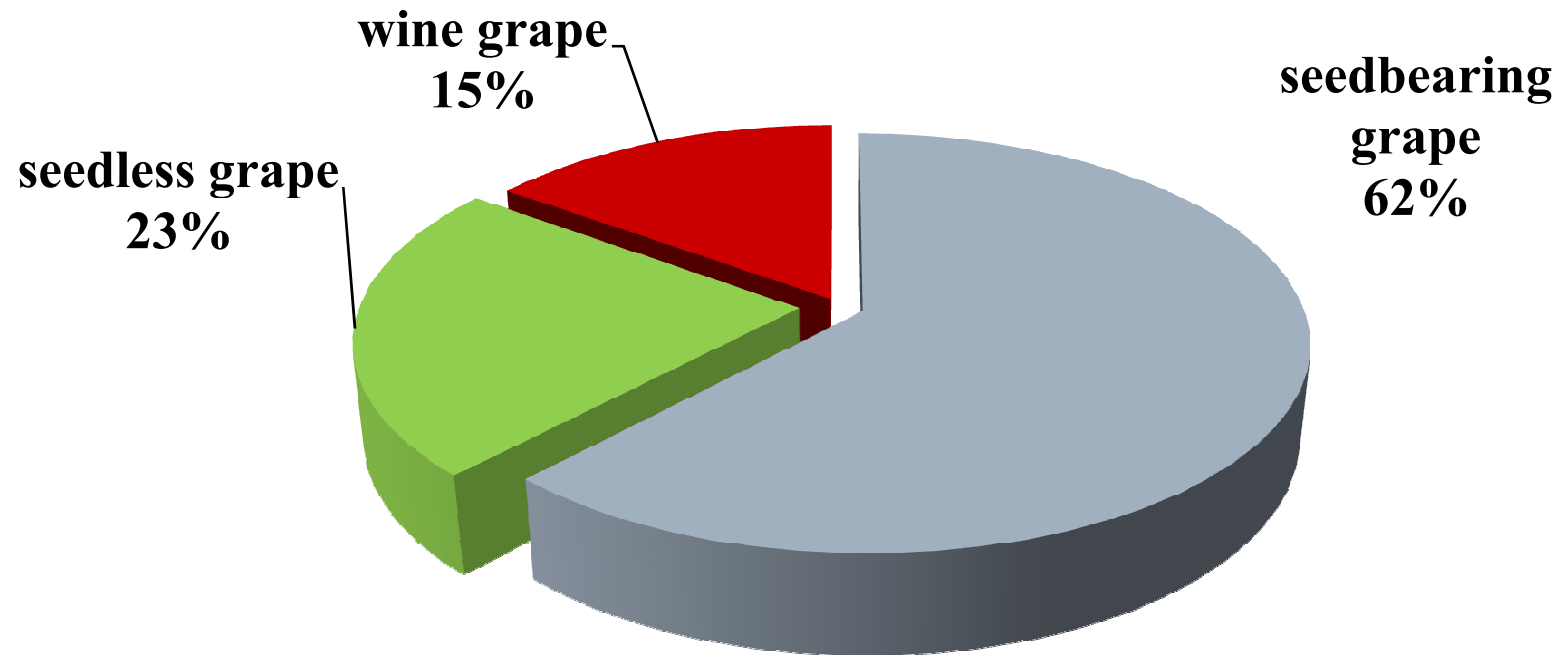


Source; Faostat, 2012

# Distribution of Grape Growing Area in Turkey

Total 467.092 ha

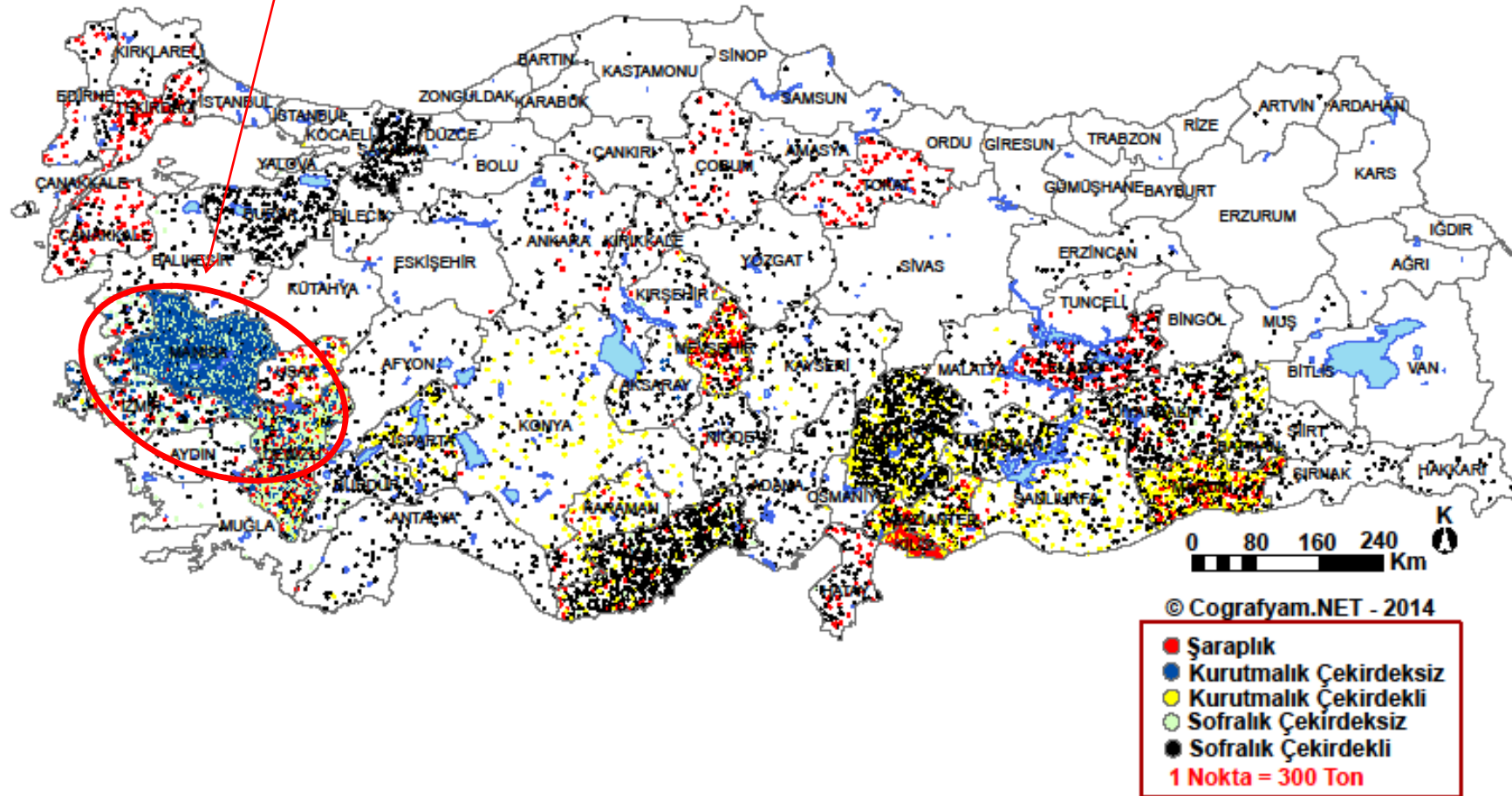
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*Source; TÜİK, 2014*

*Seedless Grape Production Area; 101.143 ha (TUIK, 2014)*

*Manisa, Izmir and Denizli*





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Turkey has achieved the world leadership in Sultana world trade with an annual export volume reaching to 250,000 tons.

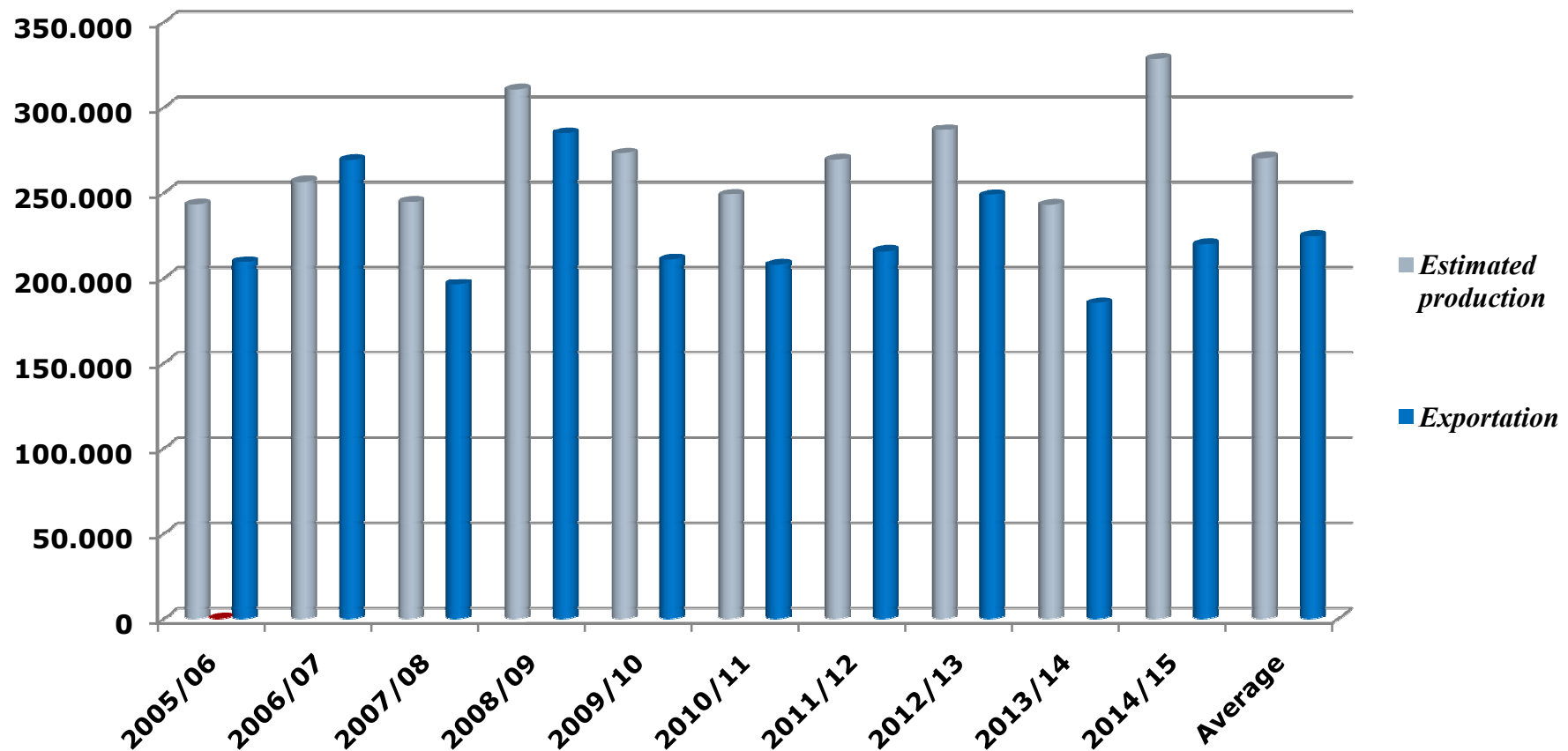
Turkey's share in global exports is 85-90 percent and Sultanas are exported to more than 80 countries.



# ***Turkey, Seedless Dried Grape***

## ***Estimated Production and Exportation***

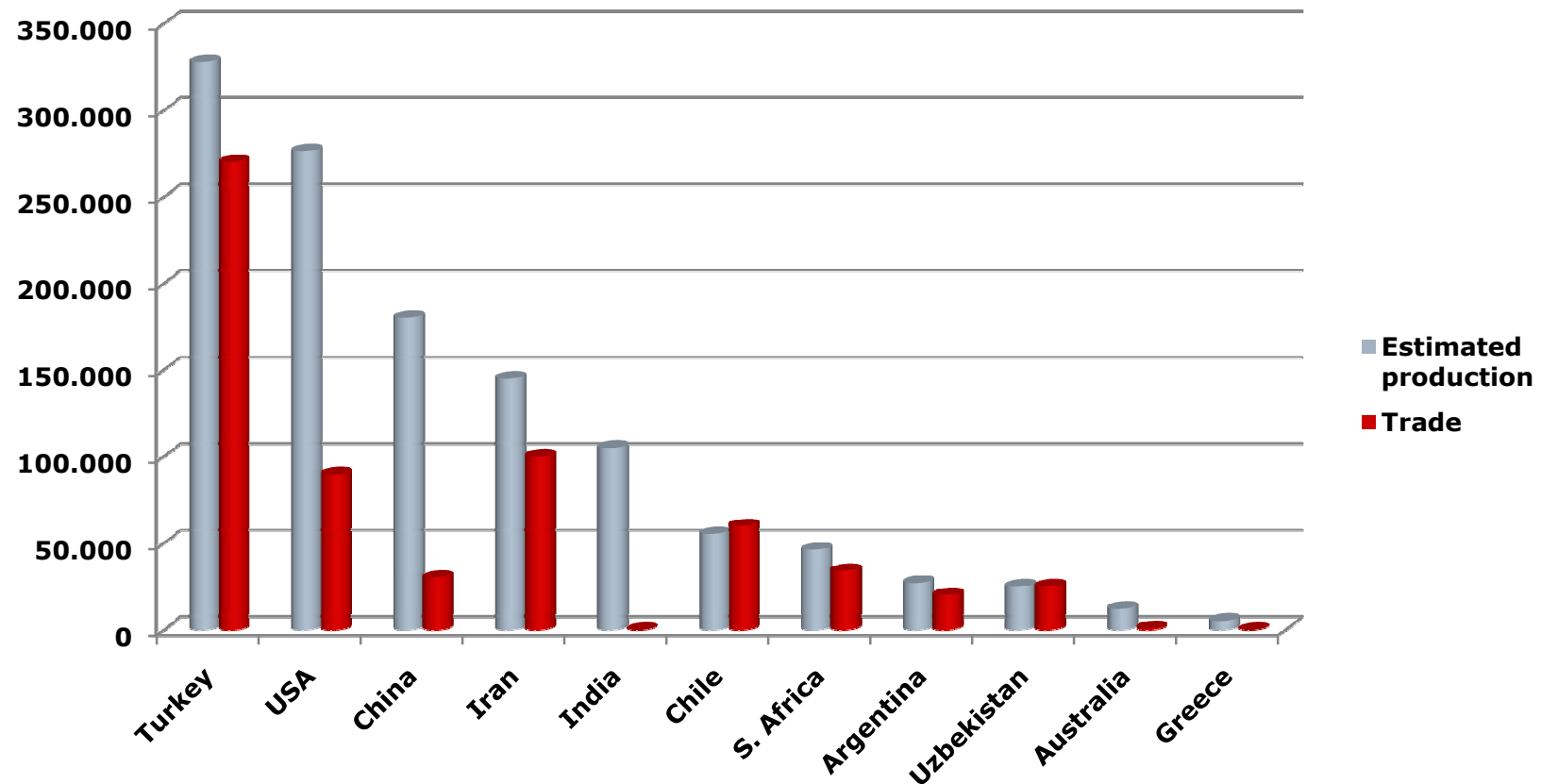
*(the past 10 season / metric tonnes)*



Source; Aegean Exporters' Associations and İzmir Commodity Exchange



# *World Seedless Dried Grape Estimated Production and Trade (2014-2015 / metric tonnes)*



Source; 2014 International Seedless Dried Grape Producing Countries Conference Statistics

# Production

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- The vineyard area of Sultana is not increasing,
- Quality is becoming more important,
- Quality assurance systems as Good Agricultural Practices, Integrated Product Management, Integrated Pest Management with a “farm to fork” approach is becoming more and more important in Turkey as in all over the world.

# Production

## Vineyard establishment

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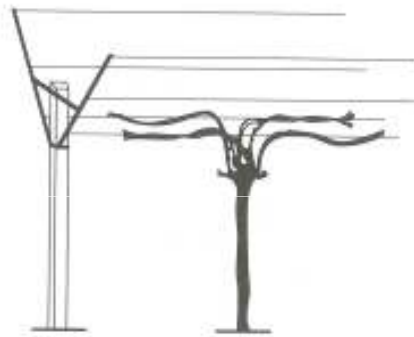
- Planting distance is 3 m x 2 m,
- Sultana is very vigor variety,
- It make big canopy and leaf surface, long summer shoots.



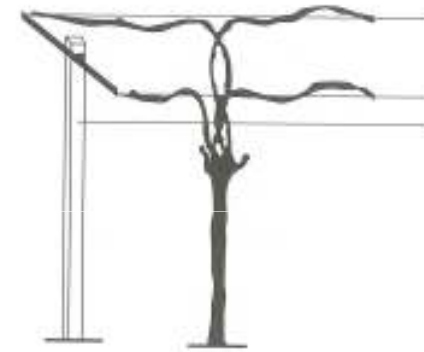
# Training Systems: Mainly on trellis

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“Y” training system



“T” training system



# Pruning

## *Winter pruning*

- ❑ Winter pruning is balance of the stage arrange in crop quantite and leaf area.
- ❑ Type of pruning is mix pruning.
- ❑ After pruning 4 to 8 long cane are left on each tree.
- ❑ Each cane has 12 to 18 buds.





# Soil cultivation

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- ☐ Minimum cultivation,
- ☐ Usually chisel or cultivator are preferred for soil cultivation.



# Irrigation

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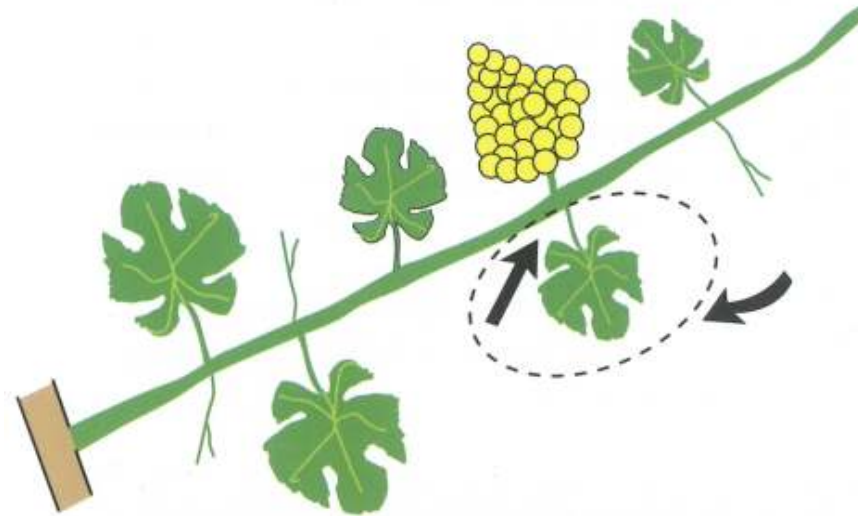
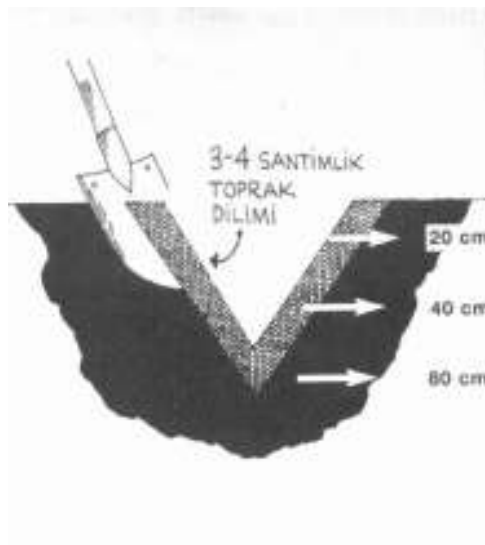
- During the last decade drip irrigation started to replace furrow irrigation.





# Plant Nutrition

- ❑ Government provides financial support for farmers for soil and leaf analysis,
- ❑ Type, quantity and timing of fertilizer application is determine according to result of analysis.



# Plant Nutrition

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Use of green manure.

- Broad bean
- Vetch
- Barley ext.



# Plant Protection

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- The MoFAL support and control registered pesticides use in vineyards,
- The MoFAL asks that all farmers have record keeping related to all practices and inputs used.





# Control of European Grapevine Moth

(*Lobessia botrana*)

- ❑ Is being use “Mating Disruption Technique”,
- ❑ Early warning system for downy mildew and European grapevine moth,
- ❑ Sending SMS to farmers.



03.07.2015

**İsonet-L**



**Exo**



**Rak 2 Pro**

# Harvest



Refractometer



- ❑ Harvest time - when sugar content reach,
- ❑ % 22-24 (brix) refractometer is used to determine the sugar content,
- ❑ Harvest is done by hand without any damage on berries.





# Pre-treatment with an alkaline solution

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Dipping solution;  
water,  
potassium carbonate,  
olive oil.



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# Sun-Drying

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# Processing

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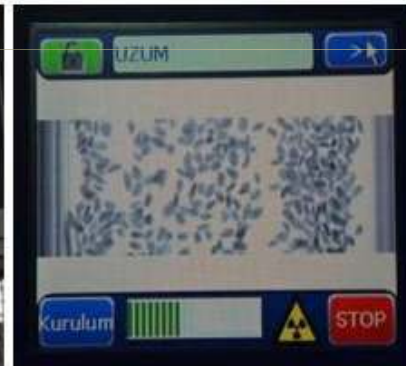


# Processing

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# Processing





# Processing



# TURKEY

## TS 3411, SEEDLESS DRIED GRAPE STANDARD

### 4.3.2. Class Specifications and Tolerances

Defects allowed	Ekstra Class	Class I	Class II
Capstem attached to berries, by count, max, percent	1	2	3
Underdeveloped berries, by weight, max, percent	1	2	3
Damaged berries, by weight, max, percent	1	2	3
Sugared berries by weight, max, percent	8	12	15
Mouldy berries by weight, max, percent	0,5	1	1,5
Berries having seeds in seedless types, by count, max, percent	2	2	2

# UNECE / DRIED GRAPE STANDARD

## A. Quality tolerances

### Seedless

Permitted defects <sup>3</sup>	Tolerances for defective fruit					
	Percent by weight			by count		
	Extra Class	Class I	Class II	Extra Class	Class I	Class II
Pieces of stem (per kg)	-	-	-	1	2	2
Capstem (per cent)	-	-	-	4	5	5
Immature and/or undeveloped berries	2	3	4	-	-	-
Berries having seeds in seedless types (per cent)	-	-	-	0.1	0.5	1.0
Mouldy <sup>4</sup>	2	3	4	-	-	-
Insect damaged <sup>4</sup>	0.5	0.5	1	-	-	-
Damaged	3	4	5	-	-	-
Sugared	8	12	15	-	-	-
Extraneous vegetable material	0.01	0.02	0.03	-	-	-
Mineral impurities	0.01	0.01	0.01	-	-	-

# Defects



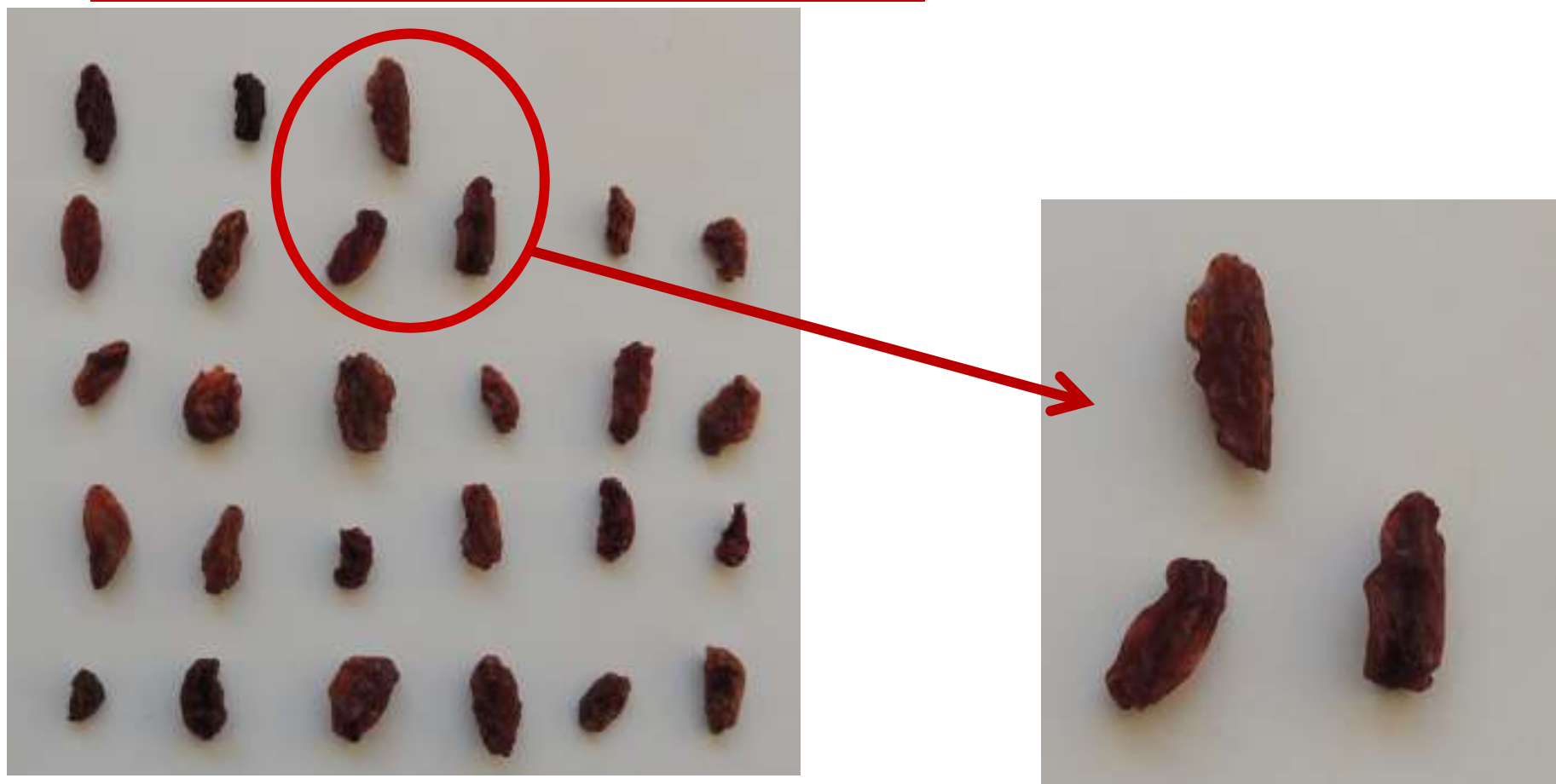
## Capstems attached to berries

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## Undeveloped berries

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## Damaged by mechanical impact

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## Sugared berries

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## Mouldy berries

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# Thanks for your attention

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**Introduced by Cevat KOÇ**