Seedless Dried Grapes / Sultanas
Production and Processing

Aegean Dried Fruits Exporters Associations

Cevat KOÇ
History

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

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.
Distribution of Grape Growing Area in the World

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

Source: Faostat, 2012
Distribution of Grape Growing Area in Turkey
Total 467.092 ha

- Seedbearing grape: 62%
- Seedless grape: 23%
- Wine grape: 15%

Source: TÜİK, 2014
Seedless Grape Production Area; 101.143 ha (TUİK, 2014)
Manisa, İzmir and Denizli
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 Izmir Commodity Exchange

Source: 2014 International Seedless Dried Grape Producing Countries Conference Statistics
Production

- 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

- 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

“Y” training system

“T” training system
Pruning

Winter pruning

- Winter pruning is balance of the stage arrange in crop quantity 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.

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Soil cultivation

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

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Plant Nutrition

Use of green manure.
- Broad bean
- Vetch
- Barley ext.
Plant Protection

- 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 (Lobesia botrana)

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

- 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

Dipping solution:
- water,
- potassium carbonate,
- olive oil.

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Sun-Drying

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Processing
Processing
Processing
Processing
### 4.3.2. Class Specifications and Tolerances

<table>
<thead>
<tr>
<th>Defects allowed</th>
<th>Ekstra Class</th>
<th>Class I</th>
<th>Class II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capstem attached to berries, by count, max, percent</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Underdeveloped berries, by weight, max, percent</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Damaged berries, by weight, max, percent</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sugared berries by weight, max, percent</td>
<td>8</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Mouldy berries by weight, max, percent</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Berries having seeds in seedless types, by count, max, percent</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
### UNECE / DRIED GRAPE STANDARD

#### A. Quality tolerances

**Seedless**

<table>
<thead>
<tr>
<th>Permitted defects</th>
<th>Percent by weight</th>
<th>by count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extra Class</td>
<td>Class I</td>
</tr>
<tr>
<td>Pieces of stem (per kg)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Capstem (per cent)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Immature and/or undeveloped berries</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Berries having seeds in seedless types (per cent)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mouldy</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Insect damaged</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Damaged</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sugared</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Extraneous vegetable material</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Mineral impurities</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>
Defects
Capstems attached to berries
Undeveloped berries
Damaged by mechanical impact
Sugared berries
Mouldy berries
Thanks for your attention

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Introduced by Cevat KOÇ