



## Extension Toolkit Notes

Roots of Peace • University of California—Davis  
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Kenneth R. Tourjee

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### Raisin Quality Standards

Notes Compiled from—

Christensen, L.P. 2000. Raisin production manual. Publication 3393. Univ. California, Agric. & Nat. Resources—Communication Services, Oakland, CA

Mahratta Chamber of Commerce, Industries and Agriculture. 2004. Raisins.

<http://www.foodindia.org/raisin.asp>

#### 1. Introduction

Raisin quality is judged in terms of factors related to appearance, texture, flavor, food value, and cleanliness.

Characteristics such as seedlessness, size, and flavor are variety dependent.

Characteristics that are influenced during harvest are mold, insect damage, mechanical damage, juicing (stickiness), embedded sand, caramelization, and moisture content.

#### 2. Maturity

Fruit maturity is the characteristic that receives the most attention. It is mostly determined by the soluble solids content. Fruit maturity has a direct affect on the first four factors listed: appearance, texture, flavor, and food value.

#### Characteristics of Raisins Produced from Mature and Low Mature Fruit

<u>Mature Fruit</u>	<u>Low Maturity Fruit</u>
Plump	Skinny
Meaty	Light-weight
Fine-wrinkled	Coarse-wrinkled
Soft-textured	Hard
Uniform dark color	Reddish color

### 3. Maturity categories

- Well-matured means raisins that are full-fleshed; they may have fine wrinkles and are rounded in appearance.
- Reasonably well-matured means raisins that are reasonably full-fleshed and may have shallow wrinkles with thick edged ridges.
- Fairly well matured means raisins that are thin-fleshed and angular in appearance.
- Substandard development means raisins that are practically lacking in flesh.
- Undeveloped refers to extremely light berries that are lacking in sugary tissue indicating incomplete development; are reddish in color; are completely shriveled; have fine wrinkles on smaller units and moderately deep wrinkles on slightly larger units; and are commonly referred to as worthless.

### 4. Factors contributing to raisin maturity.

- Soluble solids (°Brix). Soluble solids content contributes to raisin weight, meatiness and wrinkling. It is the single most important fresh fruit characteristic to correlate with raisin quality.
- Mean berry weight. Large berries make large raisins, which are preferred over small raisins.
- Total soluble solids per berry. The total soluble solids per berry is the product of the soluble solids reading (°Brix) times the berry weight. For example, a 2 gram, 21 °Brix berry would contain 0.43 grams of total soluble solids (which are mostly sugars—fructose and glucose). Raisins typically contain 75-85% sugars.

### 5. Factors contributing to grade defects (U.S.).

#### Grade Defects.

Low tolerance (the limit usually is less than 5% by weight for each defect)

- Damage:
  - sunburn
  - sugaring (appearance of external and internal sugar crystals),
  - carmelization (the oxidation of sugar from heating; it results in a nutty flavor and brown color).
- Mold
- Uncured berries
- High moisture content

No tolerance

- Extraneous material
  - embedded sand
  - plant material (leaves, seed pods)
- Fermentation
- Deleterious material (product not fit for human consumption)Glass, excrement, etc.
- Rocks
- Microbial contamination (1 sub-sample per 12,000 pounds)

**6. U.S. Grades of seedless raisins.**

U.S. Grade A is the quality of Seedless Raisins that

- have similar varietal characteristics
- good typical color
- good characteristic flavor
- show development characteristics of raisins prepared from well-matured grapes with not less than 80 percent, by weight, of raisins that are well-matured or reasonably well-matured
- contain not more than 18 percent, by weight, of moisture for all varieties of Seedless Raisins except the Monukka variety, which may contain not more than 19 percent, by weight, of moisture;

U.S. Grade B is the quality of Seedless Raisins that

- have similar varietal characteristics;
- have a reasonably good typical color;
- have a good characteristic flavor;
- show development characteristics of raisins prepared from reasonably well-matured grapes with not less than 70 percent, by weight, of raisins that are well-matured or reasonably well-matured;
- contain not more than 18 percent, by weight, of moisture for all varieties of Seedless Raisins except the Monukka variety, which may contain not more than 19 percent, by weight, of moisture;

U.S. Grade C is the quality of Seedless Raisins that

- have similar varietal characteristics;
- have a fairly good typical color;
- have a fairly good flavor; that show development characteristics of raisins prepared from fairly well-matured grapes with not less than 55 percent, by weight, of raisins that are well-matured or reasonably well-matured; that contain not more than 18 percent, by weight, of moisture for all varieties of Seedless Raisins except the Monukka variety, which may contain not more than 19 percent, by weight, of moisture.

Substandard is the quality of Seedless Raisins that fail to meet the requirements of U.S. Grade C.

## 7. Sizes of seedless raisins.

The size designations and measurement requirements for the respective sizes are:

Select size raisins means that

- no more than 60 percent, by weight, of all the raisins will pass through round perforations 22/64-inch in diameter,
- but not more than 10 percent, by weight, of all the raisins may pass through round perforations 20/64-inch in diameter.

Small or midget size raisins means that

- 95 percent, by weight, of all the raisins will pass through round perforations 24/64-inch in diameter,
- and not less than 70 percent, by weight, of all raisins will pass through round perforations 22/64-inch in diameter.

Mixed size raisins means

- a mixture which does not meet either the requirements for select size; or for small or midget size.

## 8. Afghan Raisin Export Standards

Raisin Quality Control Certificate for Export from Afghanistan Maximum Allowances										
No.	Quality Control Indices	Red raisin grades			Green raisin grades			Black raisin grades		
		I	II	III	I	II	III	I	II	III
1	Immature	1%	1%	1%	1%	1%	1%	0.5%	0.5%	0.5%
2	Sugared	5%	6%	7%	5%	6%	6%	2.5%	4%	5%
3	Over and undersize by weight	4%	5%	6%	4%	5%	6%	2.5%	2.5%	3%
4	Maximum damage by %	1.5%	2%	2.5%	1.5%	2%	2.5%	1.5%	2%	2.5%
5	Maximum cap stem number	7	10	15	7	10	15	14	17	20
6	Mouldy	1.5%	2%	2.5%	1%	1.5%	2%	2%	2.5%	3%
7	Faint	1.5%	2%	2.5%	1%	1.5%	2%	1%	1.5%	2%
8	Sand grit									
9	Light or dark color in red									
10	Dark color in dark golden	5%	10%	15%	5%	10%	15%	12%	15%	20%
11	Presence of other raisin types									
12	Seeded raisins	1%	1.5%	2%	1%	1.5%	2%	0%	1%	1.5%
13	Stalk	1%	2%	3%	1%	2%	3%	1%	2%	3%
14	Moisture Content									