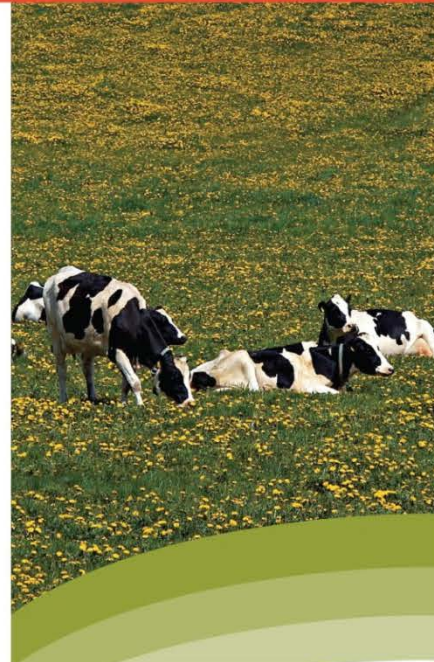
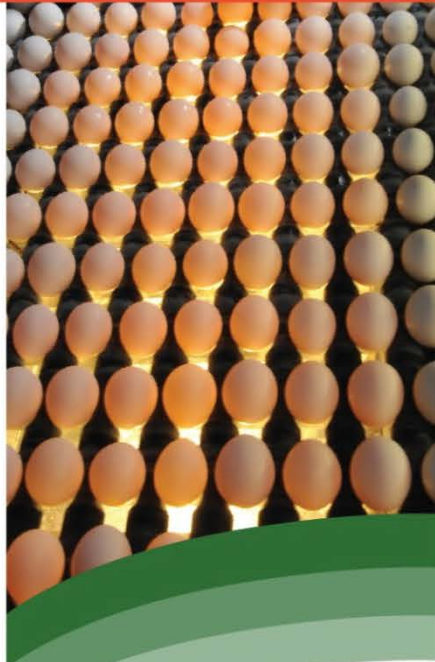




United States Department of Agriculture

# Agricultural Marketing Service

Creating Opportunities for American Farmers and Businesses





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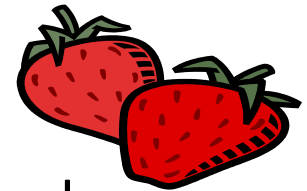
## Quality Tolerances

United States Department of Agriculture  
Agricultural Marketing Services  
Specialty Crops Program  
Specialty Crops Inspection Division  
Standardization Branch

Dorian A. LaFond  
International Standards Coordinator

# AMS History

Agricultural Marketing Service's first program was the Market News Service in 1915 for strawberries.



The first U.S. grade standard was issued by AMS for fresh potatoes in 1917.



The first processed product grade standards in 1928 for Canned peas and Canned corn.



## Specialty Crops – Defined

- Fruit
- Vegetables
- Tree nuts
- Dried Fruits
- Culinary herbs and spices
- Medicinal plants
- Nursery, floriculture, and horticulture crops





# U.S. Standards for Grades Fruits and Vegetables

## 166 FFV Standards

Fruits

Fruit for Processing

Vegetables

Vegetables for Processing

Nuts and Specialty Products

## 157 PFV Standards

Canned F&V

Frozen F&V

F&V Juices

D&DP

Misc. (Olive oil, Peanut butter)



# Agricultural Marketing Service

Each FF&V standard includes tolerances for defects allowed in all grades/classes. Some standards include variances in the tolerances allowed based on the standard's point of application – Shipping Point, En Route, or at Destination.

KIWIFRUIT	At Shipping Point			En Route or at Destination		
	U.S. Fancy Extra Class	U.S. No 1 Class I	U.S. No. 2 Class II	U.S. Fancy Extra Class	U.S. No 1 Class I	U.S. No. 2 Class II
Severity of Defects allowed	Injury	Damage	Serious Damage	Injury	Damage	Serious Damage
<b>TOTAL TOLERANCE</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>12</b>	<b>12</b>	<b>12</b>
Of which: Quality defects	4	4	4	8	8	8
Condition Defects which includes Decay/breakdown	8	8	8	12	12	12
	1	1	1	2	2	2
Other Requirements						
Size (max and/or Min)	NONE					
Uniformity - Fairly uniform	Fruits in a container marked numerically: Sizes 30 or larger may not vary in diameter more than ½ inch or 12.7mm Sizes 31 – 38 may not vary in diameter more than 3/8 inch or 9.5mm Sizes 39 or smaller may not vary in diameter more than 1/4 inch or 6.4mm  No more than 5.0 percent by count of the fruit in a container may exceed the diameter range specified/marked					
Off size	No more than 10.0 percent by count of the containers in a lot may fail to meet the uniformity requirements					

# Defects Limits per Class/Grade are Indicated with Fixed Parameters

	At Shipping Point		
	U.S. Fancy Extra Class	U.S. No 1 Class I	U.S. No. 2 Class II
<b>Quality Defects</b>			
Discoloration- black or brown	≥ 5% of surface	≥ 10% of Surface	≥ 25% surface
Leaf or limb rub (not smooth or light colored)*; (S&LC)**	* Aggregate area Circle ≥9.5 mm diameter	*Circle ≥9.5 mm diameter	Aggregate area Circle ≥ 19.1 mm diameter  ** Aggregate area Circle ≥ 38.1 mm diameter.
Dark and rough			
Hail injury Unhealed/deep/ or healed	Aggregate area Circle ≥ 1.6mm diameter	Circle ≥ 6.4mm diameter	Circle ≥ 12.7mm diameter
Growth Cracks (healed or unhealed*)	1 max; ≥ 3.2mm long or deep	> 1 ≥ 3.2mm long or deep ≥ 9.5mm long ≥ 6.5 mm long	≥ 3.2 mm long or deep* or ≥ 4.8 mm deep ≥15.9 mm ≥ 12.7mm
Scabs (cracked)	Circle ≥ 3.2 mm diameter	Circle ≥6.4mm diameter	Circle ≥ 12.7 mm diameter
Scars			
• not smooth/ depth	≥ 0.8mm	≥ 1.6mm	≥4.8mm
• Dark and /or rough	Circle ≥ 3.2 mm	Circle ≥ 6.4 mm	Circle ≥19.1 mm
• Fairly light & smooth	Circle ≥ 6.4 mm diameter	Circle ≥ 12.7 mm diameter	
• Light	Circle ≥ 12.7 mm diameter	Circle ≥ 19.1mm	≥ 25% of fruit surface
Heat injury/spray burn/sunburn		Skin color or flesh is slightly changed	Blistered cracked, flattened Circle ≥9.5mm diameter
<b>Condition Defects</b>			
Bruising- discoloration/indentation is more than	1.6 mm deep	3.2mm deep with discoloration. circle ≥9.5 mm diameter or aggregate	6.4mm deep or discoloration circle ≥12.7mm diameter or aggregate
Sunken/pitted areas	Aggregate area Circle ≥ 9.5 mm	Aggregate area Circle ≥ 12.7 mm	Aggregate area Circle ≥ 16 mm
Shriveling	≥ 5% of surface	10% of Surface ≥	20% surface
Sloping or drop Shoulder – deviating from perpendicular line	≥ 10 degrees	≥ 15 degrees	≥ 25 degrees
Hayward Mark	≥ 1 mark extending 2/3 length of the fruit	≥ 1 mark or mark = length of fruit 1.6mm deep or 3.2 mm raised	≥ 2 marks = length of the fruit. None more than 4.8 mm deep or raised



# USDA Mango Standard Defect Scoring Guide

Defects	Injury Extra Class	Damage Class I	Serious Damage Class II
Bruising	Any slight surface indentation and discoloration of the flesh extending more than 1/8 inch in depth and 1/2 inch in diameter.	Surface indentation and discoloration of the flesh extends deeper than 1/4 inch and causing discoloration exceeding the area of a circle 3/4 inch in diameter.	Surface indentation and discoloration of the flesh extends deeper than 1/2 inch and causing discoloration exceeding the area of a circle 1 inch in diameter.
External (Surface) Discoloration	Discoloration affecting an aggregate area more than 5% of the fruit surface.	Discoloration affecting an aggregate area more than 15% of the fruit surface.	Discoloration affecting an aggregate area more than 25% of the fruit surface.
Insects or Insect or Larva Feeding Injury	When any is present or when any feeding injury is evident on the fruit.	When any is present or when feeding injury aggregates an area that exceeds that of a circle 1/2 inch in diameter.	When any is present or when feeding injury aggregates an area that exceeds that of a circle 1 inch in diameter.
Internal Discoloration	When present in any amount.	When affecting an aggregate area more than 3/4 inch in diameter.	When affecting an aggregate area more than 1 1/2 inch in diameter.
Scab	When cracked, or when the aggregate area exceeds that of a circle 1/4 inch in diameter.	When cracked, or when the aggregate area exceeds that of a circle 1/2 inch in diameter.	When the aggregate area exceeds that of a circle 3/4 inch in diameter.
Scars or Russeting	When light colored, smooth and affecting an aggregate area more than 5% of the surface, or when dark or rough or scaly and affecting an aggregate area more than 2 1/2% of the surface.	When light colored, smooth and affecting an aggregate area more than 10% of the surface, or when dark or rough or scaly and affecting an aggregate area more than 5% of the surface.	When light colored, smooth and affecting an aggregate area more than 15% of the surface, or when dark or rough or scaly and affecting an aggregate area more than 10% of the surface.
Skin Breaks	When unhealed or when the aggregate area of healed breaks exceeds that of a circle 1/4 inch in diameter or 1/4 inch in length.	When any break is into the flesh or when the aggregate area of healed breaks exceeds that of a circle 1/2 inch in diameter or 1/2 inch in length.	When any break is into the flesh or when the aggregate area of healed breaks exceeds that of a circle 1 inch in diameter or 1 inch in length.
Shriveling	When affecting an aggregate area more than 5% of the surface.	When affecting an aggregate area more than 15% of the surface.	When affecting an aggregate area more than 25% of the surface.
Sunken Discolored Areas	When more than 5% of the surface has a distinct sunken area with discoloration.	When more than 10% of the surface has a distinct sunken area with discoloration.	When more than 15% of the surface has a distinct sunken area with discoloration.
Shape	Well formed	fairly well formed	fairly well formed



# Agricultural Marketing Service



United States Department of Agriculture  
Agricultural Marketing Service

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## Grades and Standards

The USDA grade shields, official seals and labels are reputable symbols of the quality and integrity of American agricultural products. Large-volume buyers such as grocery stores, military institutions, restaurants, and even foreign governments use the quality grades as a common "language," making business transactions easier.

The USDA shields and labels assure consumers that the products they buy have gone through a rigorous review process by highly-skilled graders & auditors that follow the official grade standards and process standards developed, maintained and interpreted by USDA's Agricultural Marketing Service.

Learn more about our labels, [download our labeling fact sheet](#).

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- [10/06 AMS Livestock, Poultry, and Grain Market News \(LPGMN\) Enhances the Depth of Broiler Reporting](#)
- [09/29 AMS Livestock, Poultry, and Grain Market News \(LPGMN\) Enhances Depth of Live Cattle Reporting](#)
- [09/26 Agriculture Secretary Vilsack Announces Soybean Board Appointments](#)

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