

**ADMINISTRATIVE COMMITTEE  
FOR  
PISTACHIOS**

*Voluntary Incoming Inspection*

*Operations Manual*

*- 2007 -*

The Technical Subcommittee of the Administrative Committee for Pistachios has approved the procedural guidelines outlined in this manual. They have been developed to assist in providing uniformity and standardization in the incoming inspection process.

Your full cooperation in utilizing the information provided is greatly appreciated. If you have any questions regarding recommendations, please contact the Administrative Committee for Pistachios, 559 – 255-6480.

# **RECOMMENDED INCOMING INSPECTION PROCEDURES**

## **1. RECEIVING**

- A. Receive load; check temperature, weigh and record grower information: name, date, time, field number, etc.
- B. Temperatures:
  - 1. For bulk loads temperature probes should be taken at “hot spots” as per UC study and recorded on the RTT. (Diagram - Attachment A)
  - 2. Temperature at the time of dumping (processing) should be recorded on RTT.
  - 3. Grower or operator should be notified of any unusual conditions.

## **2. GREEN SAMPLING**

- A. Automatic or hand sampling should be continuous. (Sampling Equipment Recommendations - Attachment B)
- B. Gross green sample weight should be 1% of the weight of the load, but not less than 100 pounds.
- C. Make certain that all containers receiving samples are clean and scales read zero.
- D. Using a sample splitter, split the sample down to approximately 20 pounds (17 pounds minimum). Either a 2-way splitter or a 4-way splitter may be used.
- E. Before beginning the next sample, clean all cups and containers that will be used for sample weighing and analysis.
- F. Zero the scales.
- G. Pour sample onto a tray(s) and remove “large trash” (i.e., rocks, sticks, leaves, stems or anything other than inshell, shell, kernels or hull).
- H. Record the exact weight on the RTT.
- I. This in-hull sample is now delivered to the sample huller.

## **3. HULLING THE GREEN SAMPLE (Recommended Huller Modifications - Attachment C)**

- A. Check sample peelers to see that they are clean, that plates and doors are locked down and the timer setting is correct.
- B. Pour in sample for hulling.
- C. Set hulling time and peel. The recommended hulling time is 60 to 90 seconds.
- D. Remove sample - drain well and weigh.
- E. Record the exact weight.
- F. Place entire hulled sample into vexar bag or equivalent container to ensure integrity of grower's sample with appropriate identification.

4. **DRYING THE HULLED SAMPLE** (Recommended temperatures: 155° - 165°):

- A. The dryer operator will monitor moisture levels and remove sample from dryer when final moisture would be 5% to 7% at ambient temperature.
- B. Dried samples are then delivered to the Quality Control (QC) laboratory for final analysis.

5. **FINAL DRY ANALYSIS**

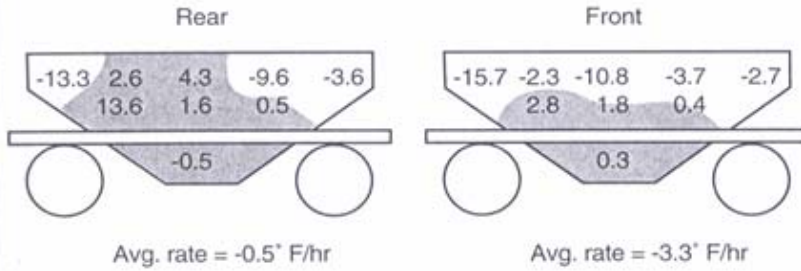
- A. Sample is mixed and split with a sample splitter.
  - 1. One sample for analysis.
  - 2. Balance of total dry sample for library sample.
- B. Pour sample product into the container until 1,000 grams is obtained (or a minimum of 500 grams if agreed to between grower and processor). Weigh and record the exact weight on the RTT.
- C. Measure the moisture just before analysis by taking three moisture readings, dumping and refilling the cup with the same nuts before each reading. Record the average of the three readings on the RTT. Adjustment to 5% moisture for determination of final grower payment will be based on this reading.
- D. The sample will be analyzed for payable and nonpayable categories. Categories will be determined using USDA definitions as reflected in the United States Standards for Grades of Pistachio Nuts. Nut sizes will be determined using an appropriately sized round hole screen. Each category will be weighed and recorded on the RTT. (See Attachment D for Inspection Priority List.)
- E. The analyzed sample will be bagged and put with the library sample. The entire grower's dry sample should be identified (at a minimum) with the following: RTT number, green sample weight, dry sample weight, date, percent moisture and person performing the analysis.
- F. All sample weights and analyses should be verified by a third party.
- G. Grower library samples to be stored until January 1st of the following year. Samples are to be sealed to maintain integrity, fumigated and stored in a prudent manner so as not to cause deterioration.

## **IMPORTANT NOTES**

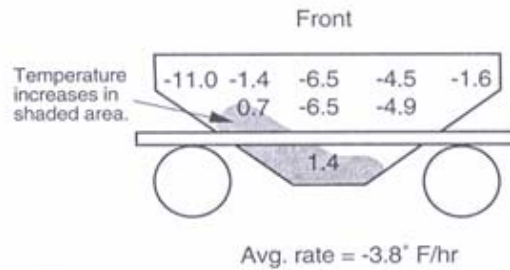
1. All scales used in determining any portion of the grower's payment must be certified by the State.
2. The person certifying any weights used in determining grower payment must be a licensed weighmaster.
3. All scales weighing the sample should be checked with certified weights at each shift change, but not less than three times in 24 hours.
4. Moisture meters should be calibrated and tested daily using moisture blocks and the recommended procedures of the manufacturer. Inspectors will periodically check the calibration logs and validate the calibration of moisture meters during harvest.
5. For optimum illumination during analysis, light fixtures should be fitted with a cool white or soft white fluorescent bulb.
6. Use of a control or check sheet to monitor progress of sample is suggested. (Example - Attachment E)
7. Visual aid charts should be used for assistance in inspections. A color chip should be used to gauge stain level. (Attachment F)
8. Always check and double check that the tag or receipt or RTT numbers are correct.
9. Standardized forms for the growers receiving testing tag and growers receipt statement, including standardized definitions for terminology, should be used. (Examples - Attachment G)

**Figure 2.** Temperature drop per hour ( $^{\circ}$  F/hr) in bulk loads of unhulled pistachios during the first 1.3 to 2 hours of transport.

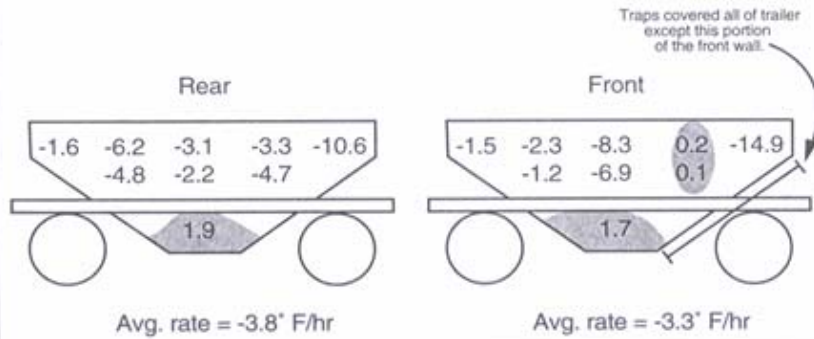
**Solid-Sided Trailers 9-14-93**



**Solid-Sided Trailer with Vent Pipes 9-15-93**



**Mesh-Sided Trailers 9-16-93**



**Diagram From:**

*MAINTAINING QUALITY OF BULK-HANDLED, UNHULLED PISTACHIOS*

California Pistachio Industry  
Annual Report, Crop year 1993-94

## **SAMPLING EQUIPMENT RECOMMENDATIONS**

1. Speed and draft should be constant throughout lot.
2. Sample must represent full cross section of product flow.
3. A minimum of 1% gross sample or 100 pounds, whichever is greater, should be taken.
4. Speed of sampling equipment must be variable for small lot size.
5. Equipment must be positioned in product flow line after trash has been removed.

## **RECOMMENDED HULLER MODIFICATIONS**

1. Sample hullers should be large enough to properly hull a 20-pound sample as one single batch.
2. Sample hullers should be rotary type with non-wearing ribbed stainless steel liner and non-wearing steel edge on disc. The disc size should be 22 inches.
3. Gap between disc and liner to be no greater than 5/16" and gap between disc and ribs to be 3/16".
4. Sample huller should be equipped with a timer to control hulling action and water spray to help remove hull material.
5. Discharge door and liner should comply with the specified gap tolerances for the sample huller.
6. The huller should be operated at 207 RPM.



## **INSPECTION PRIORITY LIST**

### **INCOMING INSPECTION (*New Crop*):**

1. Foreign material and less than 28/64" in diameter
2. Loose shells and kernels
3. Closed shell
4. Damage by other means
5. Adhering hull
6. Dark stain
7. Undersized (less than 30/64" in diameter)
8. Light stain

### **OUTGOING INSPECTION (*Shipping*):**

1. Foreign material
2. Insect damage
3. Serious damage
4. Damage
5. Shell pieces and blanks
6. Undersized (less than 30/64" in diameter)
7. Damage by other means
8. Adhering hull
9. Closed shell
10. Dark stain
11. Light stain
12. Loose kernels

**GROWER SAMPLING INFORMATION**

RECEIVING TAG NUMBER: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM PREPARED BY: \_\_\_\_\_

**LOAD RECEIVED BY:**

YARD COORDINATOR: \_\_\_\_\_

LEAD SAMPLE PERSON: \_\_\_\_\_

**SAMPLE COLLECTION:**

SAMPLE PULLED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM

**SPLITTING SAMPLE:**

2-WAY 4-WAY  
SAMPLE SPLIT BY: \_\_\_\_\_ SAMPLE SPLIT BY: \_\_\_\_\_

**WEIGHING SAMPLE:**

SAMPLE WEIGHED BY: \_\_\_\_\_ VERIFIED BY: \_\_\_\_\_

GREEN SAMPLE WEIGHT: \_\_\_\_\_ GRAMS RECORDED BY: \_\_\_\_\_

REMOVED TRASH WEIGHT: \_\_\_\_\_ GRAMS RECORDED BY: \_\_\_\_\_

**HULLING OF SAMPLE:**

SAMPLE HULLING OPERATED BY: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM

**DRYING OF SAMPLE:**

SAMPLE DRYER TIME IN: \_\_\_\_\_ AM/PM DRYER CELL NUMBER: \_\_\_\_\_

1ST MOISTURE TEST AT: \_\_\_\_\_ AM/PM % \_\_\_\_\_ BY: \_\_\_\_\_

2ND MOISTURE TEST AT: \_\_\_\_\_ AM/PM % \_\_\_\_\_ BY: \_\_\_\_\_

3RD MOISTURE TEST AT: \_\_\_\_\_ AM/PM % \_\_\_\_\_ BY: \_\_\_\_\_

RELEASED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM

**INSPECTION ROOM - WEIGHING/MOISTURE:**

RECEIVED IN INSPECTION ROOM BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM

DRY SAMPLE WEIGHT: \_\_\_\_\_ GRAMS BY: \_\_\_\_\_

MOISTURE #1: \_\_\_\_\_ % MOISTURE #2: \_\_\_\_\_ % AVERAGE: \_\_\_\_\_ %

MOISTURE BY: \_\_\_\_\_

SPLIT INTO WORKING SAMPLE BY: \_\_\_\_\_

**INSPECTION ROOM - ANALYSIS:**

INSPECTION AREA RECEIVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM

EXTERNAL ANALYSIS BY: \_\_\_\_\_ VERIFIED BY: \_\_\_\_\_

INTERNAL ANALYSIS BY: \_\_\_\_\_ VERIFIED BY: \_\_\_\_\_

CALCULATIONS VERIFIED BY: \_\_\_\_\_

**TRANSFER OF INFORMATION TO FINAL ANALYSIS SHEET:**

TRANSFERRED BY: \_\_\_\_\_

RECEIVED IN OFFICE BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ AM/PM

## **COLOR CHIP**

A color chip that can be used to gauge stain level has been developed by USDA and is available to all processors for a nominal fee.

To order the chip, please contact:

Mike Davis

Shipping Point Inspection

(916) 445-2180, Extension 3464

**GROWER RECEIPT STATEMENT  
GROWER RECEIVING TESTING TAG  
DEFINITIONS**

Gross Green Weight:	Weight of product in the hull <b>before</b> trash (leaves, sticks, etc.) has been removed and prior to removal of hull and drying.
Net Green Weight:	Weight of product in the hull <b>after</b> trash (leaves, sticks, etc.) has been removed but prior to removal of hull and drying.
Dry Weight:	Weight of product after trash and hulls have been removed and after drying. Weight is adjusted to exactly 5% moisture content on the grower receipt statement for payment purposes.
Split Inshell:	Unstained or light stained product in which the shell is split on the suture.
Shelling Stock (Split):	Split inshell product which has one of the following: adhering hull, dark stain or shell damage. Also includes kernels that have separated from the shell. Edible inshell product that falls through a 30/64 inch round hole screen but stays on top of a 28/64 inch round hole screen shall be considered shelling stock.
Closed Shell:	Product in which the shell is not open or is partially open but will not allow an 18/1000 (.018) inch thick by 1/4 (.25) inch wide gauge to slip into the opening.
Closed Shell – Shelling Stock:	Closed shell product that has dark stain, adhering hull or shell damage. Also included edible inshell product that falls through a 30/64 inch round hole screen but stays on top of a 28/64 inch round hole screen shall be considered shelling stock.
Blanks:	A non-split shell not containing a kernel or containing a kernel that fills less than one-half of the shell cavity.
Unstained:	Product that has no scoreable stain on the shell.
Light Stained:	Product with an aggregate amount of yellow to light brown or light gray discoloration that is noticeably contrasting with the predominate color of the shell and affects more than one-fourth of the total shell surface.
Adhering Hull (Sticktight):	When an aggregate amount of hull covering more than one-eighth of the total shell surface remains attached.

Dark Stained:	When the aggregate amount of dark brown, dark gray or black discoloration affects more than one-eighth of the total shell surface provided that speckled appearing stain located within the area of one-fourth of the shell nearest the stem end shall be disregarded.
Shell Damage & Other:	A defect which materially detracts from the appearance or the edible or marketing quality of the individual shell.
Loose Kernel:	Edible kernels or kernel portions which are out of the shell and which cannot be considered particles or dust.
Insect Damage:	When an insect, insect fragment, web or frass is attached to the kernel or when kernel shows conspicuous evidence of feeding by insects.
Defects:	Any blemish affecting the kernel other than insects. These may include immature kernels, rancid kernels, mold, decay or vertebrate feeding or any combination of defects that materially detract from the appearance or the edible or marketable quality of the individual kernel.
Foreign Material (FM):	Leaves, sticks, loose hulls or hull pieces, dirt, rocks, glass, metal, insects or insect fragments that are not attached to the nuts, or any other substance other than pistachio shells or kernels.
Undersized:	Pistachio nuts in the shell which fall through a 30/64 inch round hole screen.
Edible Weight:	Sum of the following: total edible split inshell, total edible kernels from shelling stock and edible kernels from closed shell.
Assessed Weight:	Sum of the following: total edible split inshell, total edible kernels from shelling stock and edible kernels from closed shell. Total edible kernels from shelling stock and edible kernels from closed shell and loose kernels are converted to inshell weights for assessment purposes.