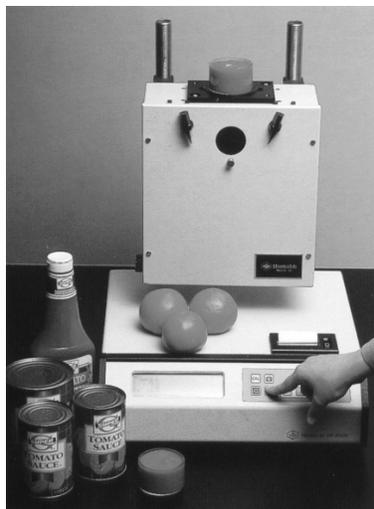


Processed Tomato Scores Using the D25A DP-9000 and the University of California, Davis Soft Standard

Processed tomato scores are used commercially to grade tomato juice, catsup, sauce, paste, and puree. They are important as indicators of quality and color. The price a product can command is related to this tomato score.

When the Tomato Product Scores option (HL#D25-TPC/2003) is purchased with the D25A DP-9000 system, the software in the DP-9000 is modified to allow measurement and display of the following tomato scores: fresh tomato color index (FTCI), tomato juice (TJS), tomato paste/puree (TPS), tomato sauce (TSS), tomato catsup (TCS), and a/b ratio. This option also includes a special port insert, 2.5-inch glass sample cup, and a tomato hitch tile. HunterLab supplies a tomato-colored porcelain enamel on steel tile with calibrated tomato score values so the D25A may be hitched to established values in the red-orange region of color space using the hitching capability of the DP-9000, if desired. (Processors in the United States often need to hitch, although this isn't required in many countries.)

It is also possible to hitch the instrument using actual processed tomato samples if greater accuracy is required. Some tomato processors follow a method described by the University of California at Davis using a sample of tomato puree with assigned Hunter L, a, b values to hitch the instrument. They then measure the tomato tile so that they may use the tomato tile for hitching or instrument checking in the future. The procedure below describes use of the real (or "soft") tomato standard for hitching the instrument. Use of the tomato tile for hitching is described in Lesson 12 in the D25 DP-9000 User's Manual.



Procedure (Soft Standards)

1. Prepare the tomato puree soft standard as described in the accompanying literature from UC, Davis. The can of puree should be removed from the refrigerator and allowed to warm to room temperature for three to four hours before use.
2. Remove the standard port insert and replace it with the recessed port insert that is included with the tomato scores option.
3. Press the **CAL** key and follow the prompts to standardize the instrument.
4. Press the **Setup** key to enter Setup mode. Use the **right** or **left arrow** key to select a setup to modify. Configure the following parameters for the setup.

Name: TPS

Display: Absolute

Read Interval: Single

Sample ID: Off

Average: Off

Color Scale: Lab

Color Index: TPS

Standard: Hitch

5. Use the **down arrow** key to highlight the first target value (L). You will be prompted to measure the hitch standard to update the target values.
6. Stir the tomato puree standard, but do not add excess air. Do not dilute the standard. Pour it into the 2.5-inch glass sample cup and place the cup in the special port plate at the measurement port.
7. Press the **Read** key. The target values will be updated to the values read for the standard.
8. Use the **right** or **left arrow** key to adjust the L value to the value provided by UC, Davis.

9. Press the **down arrow** key to highlight the second target value, a.
10. Adjust the a, b, and TPS values to those provided with the soft standard.
11. Exit the setup.
12. Read the tomato tile and record the L, a, b values.

To measure tomato puree product later, select the setup configured above.

1. Standardize the instrument.
2. Read the tomato tile and confirm that the values read are very close to those reported on the tile label. If they are not and the instrument appears to be operating properly, re-establish the hitch.
3. Place the sample in the glass cup and place it at the sample port.
4. Press the **Read** key.

Note: Each tomato score must be established in a separate setup with a hitch standard. The duplicate standard function cannot be used to replicate measurements because of the requirement for a hitch standard.

More Information About the Soft Standard

The tomato puree standard contains no preservatives. It should be refrigerated, but not frozen. It may be refrigerated indefinitely as long as the can has been left unopened. It may be used only once after the can has been opened, then any unused portions must be discarded. Oxygen exposure and/or bacterial growth cause unacceptable color changes.

The standard may be purchased from:

Food Science and Technology Department
University of California, Davis
Davis, California 95616-8598
Phone: (530) 752-8079
Fax: (530) 752-4759

For Additional Information Contact:

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