Addition of Tomato Indices to ColorFlex EZ Citrus - CMR-3227

Instrument: ColorFlex EZ

Description: This CMR modifies the software for the ColorFlex EZ Citrus to allow for Tomato Scores along with the Tomato Tile, cup, insert and cover.

Reading Individual Samples

Complete the following steps to take individual readings using the ColorFlex EZ Tomato:

Note: These instructions apply when Average in the product setup is set to OFF.

1. From the ***MAIN MENU***, press the ***DOWN ARROW*** key until the product setup screen is reached. Press ***GO*** to select a setup.

Figure 1. Main Menu > Product Setup

2. Press the ***UP*** or ***DOWN ARROW*** to select the **TOMATO SCORE SETUP**. Press ***GO*** to continue. The choices are Citrus Color, Other Juices, Tomato Scores, and Lycopene. Once into the product setup page, go to **TOMATO SCORES > VIEWS**. From the Views page, you can select a View to modify. Under the Data View, you can select the **DATA VIEW > COLOR INDEX>** for the measurements from the following: **TPS (TOMATO PASTE), TSS (TOMATO SAUCE), TCS (TOMATO CATSUP), A/B (HUNTER A/B RATIO), FTCI (FRESH TOMATO COLOR).**
3. Once the Tomato Score or Lycopene is setup, return to the **MAIN MENU**.

4. Select ***READ*** from the ColorFlex EZ Tomato's ***MAIN MENU***. Move the cursor to highlight its position using the ***UP*** and ***DOWN ARROW*** buttons and then press the ***GO*** button.

Figure 2. Main Menu > Read

5. When beginning measurements of tomato products, it is recommended to read the hitched tomato Red tile as a Performance Qualification check. If the instrument is still hitched correctly, it should read the assigned Hunter Lab C/2 values closely. If not, reset the hitch to the Tomato Red tile as described under **USING A HITCH TO THE TOMATO RED TILE**.
6. The port forward stand is not needed for Tomato Measurements. So, place the instrument on its feet and go to **GLOBAL OPTIONS > DISPLAY SETTINGS > SCREEN ANGLE**. Press the arrow to show 180.
7. Install the sample cup port insert
8. To measure a sample, pour or spoon the sample into a 64 mm (2.5 in) glass sample cup until the cup is almost full.
9. Place the sample cup in the recessed area of the sample cup port plate
10. Cover the sample cup with the sample cup opaque cover.
11. Measure the sample by pressing the ***GO*** key.

Figure 3. Place sample at port

12. The result is displayed.

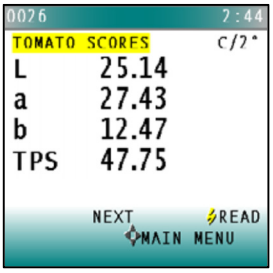

Figure 4. Tomato Score

13. To view the next Tomato Score, press the ***UP ARROW***.

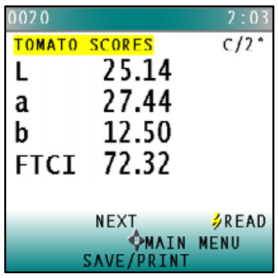

Figure 5. Next Tomato Score

Note: If a bar code reader is installed, scan the bar code now, and the ID will appear beneath the color measurement.

14. User options are shown on the keypad map at the bottom of the screen. Press ***SAVE/PRINT*** (down arrow) to both save the reading (if AutoSave is not enabled) in the ColorFlex EZ Tomato's memory and print the reading if a USB printer is connected.
15. The saved readings counter in the upper left corner of the screen will be incremented to reflect the newly saved reading.
16. Remove the sample cup from the sample port and place the next sample at the port.
17. Press ***READ*** to take another reading using this product setup.
18. Press ***UP*** to move to the next data view for this product setup.
19. Press ***RIGHT ARROW*** to return to the main menu.

Using a Hitch to the Tomato Red Tile

The purpose of the Tomato Red Tile is to improve inter-instrument agreement in Tomato Score values at multiple sites, or between a buyer and seller of processed tomato products. The hitch standard is particularly important for the ColorFlex Tomato because in the first setup ("Tomato Scores") hitches the instrument to the assigned values of the Tomato Red tile.

At the factory, the values for the Tomato Red tile (C/2°) have been entered along with the product views. If it is necessary to re-set the hitch, here is the procedure.

1. From the **MAIN MENU**, choose ***PRODUCT SETUP***.

Figure 6. Yes to Select Setup

2. Select the ***TOMATO SCORES SETUP*** by highlighting the selection and pressing ***GO***.
3. Make sure that the **STANDARD TYPE** is set to ***HITCH***; the **AVERAGE** is set to ***OFF***, then select the ***VIEWS***.

Figure 7. Product Setup

4. For each Tomato Score, the **VIEW** is set to Absolute, the Observer to C/2°, and the scale to Hunter L,a,b.
5. Return to the Product Setup screen and select ***STANDARD VALUES***. The Standard Values screen appears.
6. ***READ*** the Tomato Tile and the Hunter L,a,b values read on the ColorFlex EZ are displayed with the first digit highlighted.
7. Modify each digit of the Hunter L,a,b C/2 values until it matches those of the values on the back of the tile.

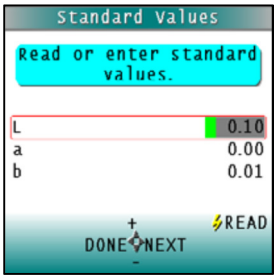

Figure 8. Enter Hitch Values

8. Press ***DONE*** to return to the **PRODUCT SETUP SCREEN**.

Setting Tolerances for Tomato Products

1. To enter Tolerances, select ***TOLERANCES*** from the **PRODUCT SETUP SCREEN**.

Figure 9. Select Tolerances

2. Enter the tolerance values for each parameter using the plus or minus key. Press ***NEXT*** to go to the next digit or next tolerance and ***DONE*** when all values have been entered.

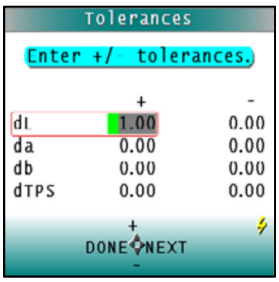

Figure 10. Enter Tolerance Values

1. Choose ***READ*** and select the setup.
2. Select ***YES*** and select the ***TOMATO SCORES***.
3. Follow the prompts to ***READ*** the samples. Any measurements made in this setup will be adjusted to match the reference instrument. Place the sample at the port in the sample cup. Press the ***GO*** button to Read as before.