

Color measurement and quality control in flour:

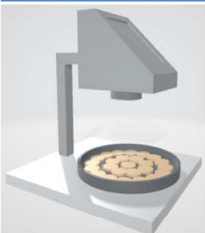
Measure whiteness and do more with Sensegood spectrophotometer

In older times, there used to be grinding wheels and small flour mills in almost every households. Still they do exist in some regions; however the trend of buying packaged readymade flour has been increased largely. Demand is exponentially increasing and penetrating from metros to mega cities to small towns. To cater this continuous and largely growing market, flour manufacturers and suppliers need to meet consumer expectations in terms of quality.


Importance of color in flour:

For an example, for multigrain flour; the fineness or coarseness and color of the final flour are the main quality parameters. If the finished multigrain flour color is not consistent over different production batches, it means that the proportion of various grains is not maintained uniformly as required. This results in batch wise changes in flour's water absorption and binding characteristics, ultimately resulting into customer dissatisfaction.


SENSEGOOD SPECTROPHOTOMETER - UNIVERSAL (REFLECTANCE)




(a)



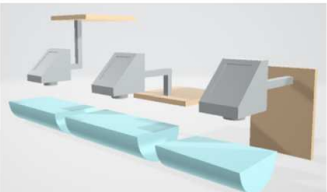
(b)



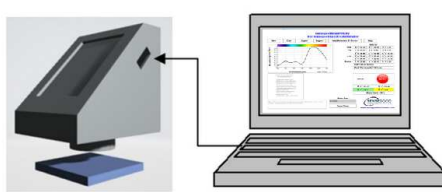
(c)



(d)



(e)



(f)

- ✓ Benchtop/ Tabletop: (a) (b)
(Rotating sample platform)
- ✓ Handheld/ Portable: (c) (d)
- ✓ Online/ In-process: (e)
- ✓ Solid: (a) (c) (d) (e)
- ✓ Liquid: (b) (e)
- ✓ Paste: (b) (e)
- ✓ Powder: (a) (b) (e)
- ✓ Contact measurement: (c) (d)
- ✓ Non-contact measurement: (a) (b) (e)
(Adjustable height)
- Works with:
 - ✓ 5V adapter (cell phone charger)
 - ✓ Power bank
 - ✓ Computer/ Laptop (f)
- ✓ Averaging
- ✓ Auto repeat measurement mode
- ✓ Color match percentage
- ✓ Color indices (whiteness, yellowness, ...)
- ✓ *SensegoodSmart*
– computer interface software utility

Sensegood spectrophotometer to maintain quality and consistency in flour:

Sensegood spectrophotometer is an analytical color measurement instrument that is widely accepted in the industry and research fraternity for reliability. From raw material to final product, it comprehensively evaluates the color attributes of various samples, including solids, liquids, powders and pastes. Large viewing area (sensor's field of view) and rotating sample platform averages out sample and produces accurate repeatable color attributes. As a result, consistency can be maintained and quality standards can be met with less waste, time, and effort. Sensegood spectrophotometer is the versatile device that is engineered to work as handheld/portable, benchtop/table-top or in-process/online color measurement instrument.

Applications: Multigrain flour or individual flour of wheat, rice, soybean, gram, oat, maize, millet, or course flour like suji and rawa or psyllium husk (isabgol husk).



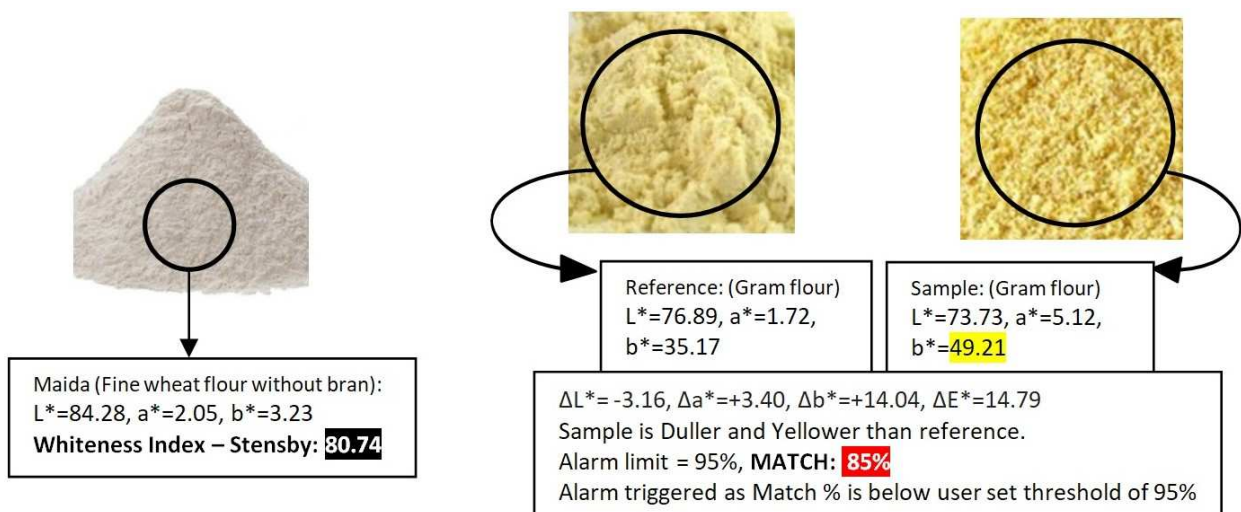
Reference: L*=80.59, a*=2.17, b*=4.71	Sample: L*=77.75, a*=6.24, b*=8.12
$\Delta L^* = -2.84$, $\Delta a^* = +4.07$, $\Delta b^* = +3.41$, $\Delta E^* = 6.02$ Sample is Duller, Redder and Yellower compare to reference Alarm limit (adjustable) = 96%, MATCH: 94% Alarm triggered as Match % is below user set threshold of 96%	

Sensegood Spectrophotometer for color measurement and consistency control in multigrain flour

Photo: Ensure ingredient quality-quantity control and right color texture in multigrain flour using Sensegood spectrophotometer. In photo: Determination of color match percentage in between production sample and saved standard reference.

Using Sensegood spectrophotometer, user can set desired sample as a reference and check match percentage value for production samples. If matching is poor; below set threshold, it provides audible alarm and display indication on LCD to alert operator. Hence operator can quickly react and take appropriate action to pass, reprocess or reject the sample. The information assists for the prompt corrective action which eventually leads to quick process parameters control, increase in the throughput and maximization of equipment usage. This surely results into low operational cost with improved product quality, consistency and market acceptability.

Sensegood spectrophotometer is incepted with all the features that help you boosting the quality and confidence of your product. It has specialized capabilities of indicating color indices: amount of whiteness or yellowness and many more. For instance one can use Sensegood spectrophotometer for whiteness index to control the consistency of whiteness in finished Maida – fine wheat flour without bran.



Sensegood Spectrophotometer for color measurement in flour/powder

Photo: Left – Measure whiteness index of Maida. Whiteness index can be a quality parameter for any white colored flour. Right – Determination of color match percentage in between besan (gram flour) production sample and saved standard reference.

Do more with Sensegood spectrophotometer:

Sensegood spectrophotometer also incorporates continuous auto measurement mode. In this mode, it wakes up at user selectable intervals, takes measurement, compares the sample color with the saved reference, displays percentage match, and alarms to the operator with beeping sound in case if the matching percentage is below preset threshold. It has provision for averaging option in normal mode as well as in auto repeat measurement mode.

Measured CIE L*a*b* values indicate strength of color parameters like: bright or dull, red – green and yellow – blue respectively. Measured color is also represented as reflectance graph, peak wavelength and color temperature on color touch LCD. Sensegood spectrophotometer is non-messy non-contact type instrument which has benefit of measuring sample’s color from a distance. Because of this, sensor’s optical assembly remains scratch proof enabling long life in retaining calibration. Non-contact measurement avoids any sample contact and contamination on sensor measuring surface. Hygiene is maintained, as non-contact measurement avoids any food contact and bacterial accumulation on sensor measuring surface.

SensegoodSmart utility:

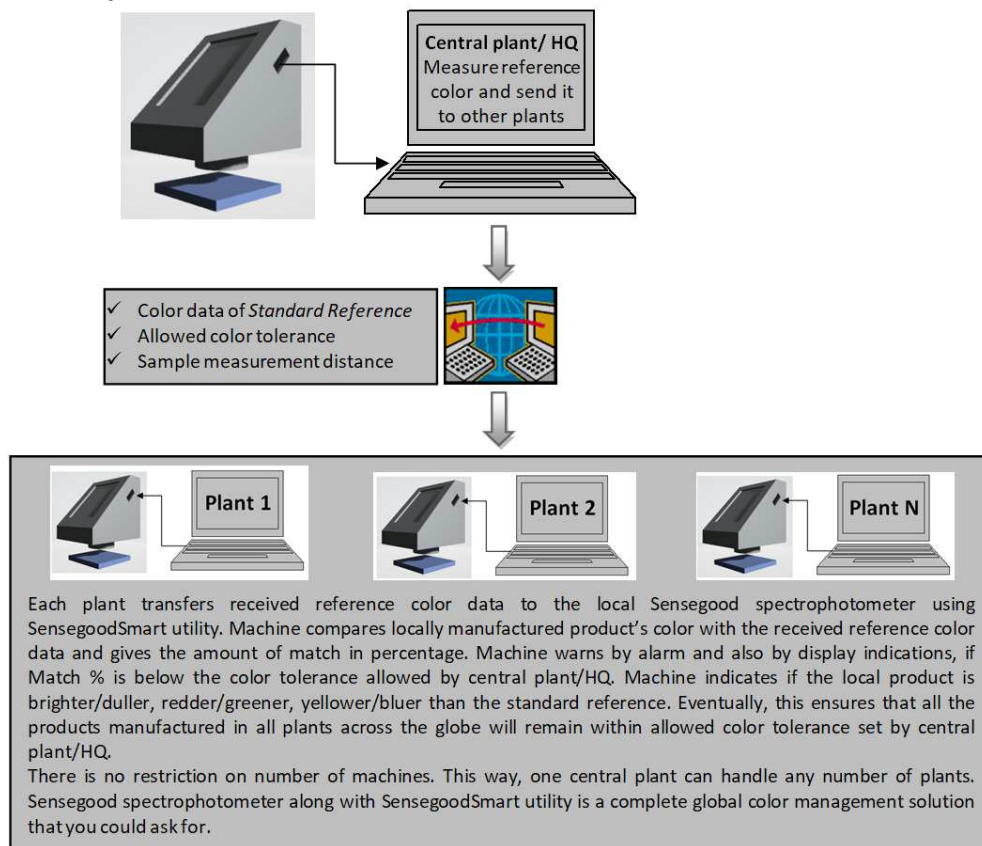


Photo: SensegoodSmart utility for color management across multiple production plants. Apart from this, SensegoodSmart utility enables user to store unlimited number of references to the computer. Any desired reference can be recalled and downloaded to Sensegood spectrophotometer whenever required. The utility provides all color related analytical information on single screen. This feature is even more desirable when using Sensegood spectrophotometer for in-process/online applications.

Sensegood spectrophotometer provides computer interface software *SensegoodSmart* which lets you to convey numeric color data across all production plants that may be located at multiple places across the globe. Each production plant uses Sensegood spectrophotometer to compare color attributes of the product manufactured in their plant with the numerical color information received from central plant or management. This enables them to reproduce each product consistently across all the plants. This feature is highly desirable for wide spread industry with plants at various places. It also assists in color consistency in packaging material supply chain.



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