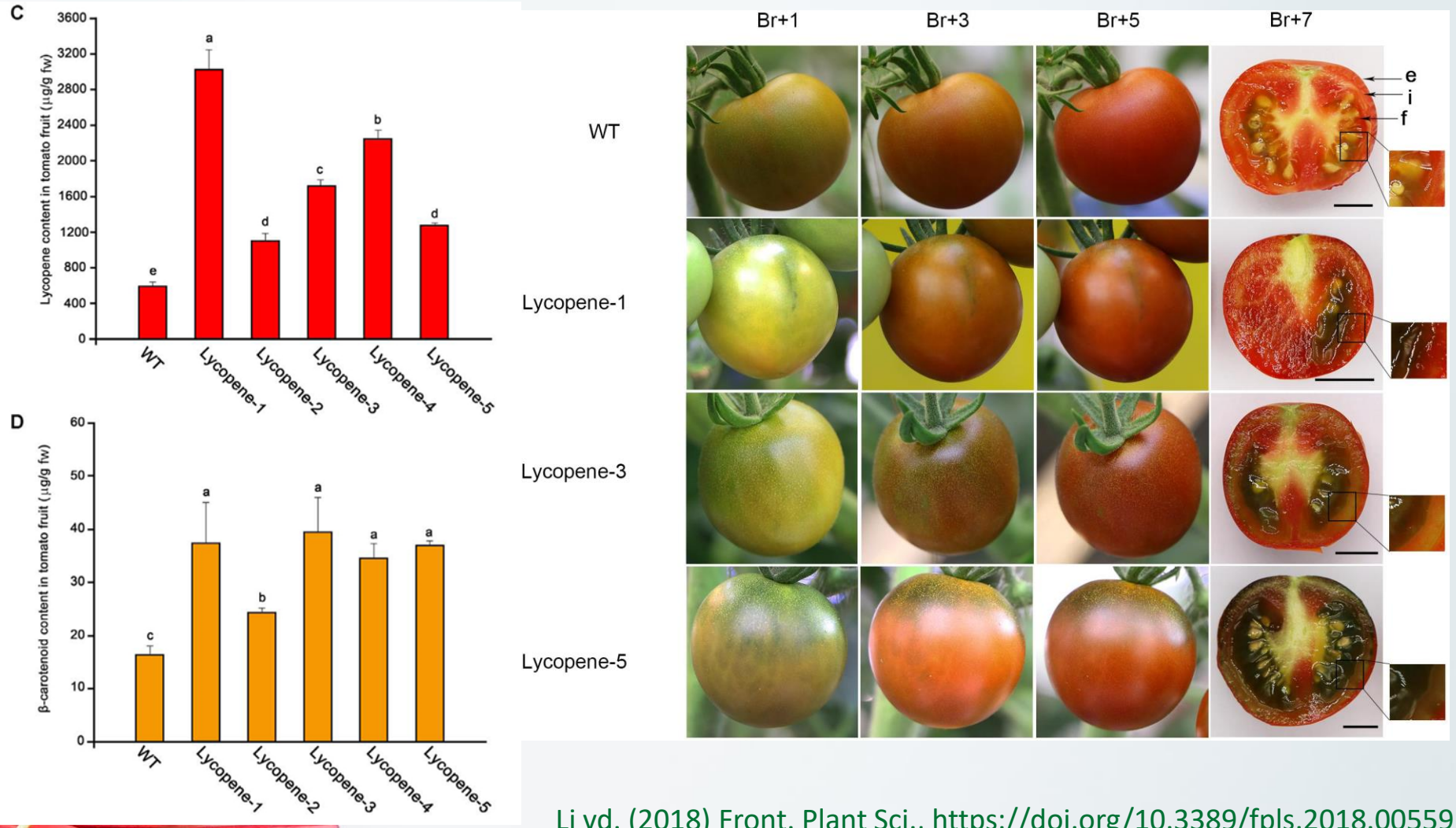
Bahçe Ürünlerinin Muhafazası ve Pazara Hazırlanması Uygulama 3. hafta

Meyve Kabuğu Zemin ve Üst Rengi

- Zemin rengi yeşilden sarıya (klorofil parçalanması)
- Üst rengi çeşide özgü antosiyanin, karatenoid gibi renk pigmentlerinden ileri gelen renk



Li vd. (2018) Front. Plant Sci., https://doi.org/10.3389/fpls.2018.00559

Renk Ölçümü

Subjektif

- Renk kartları

Objektif

- Renk ölçüm cihazları

Subjektif

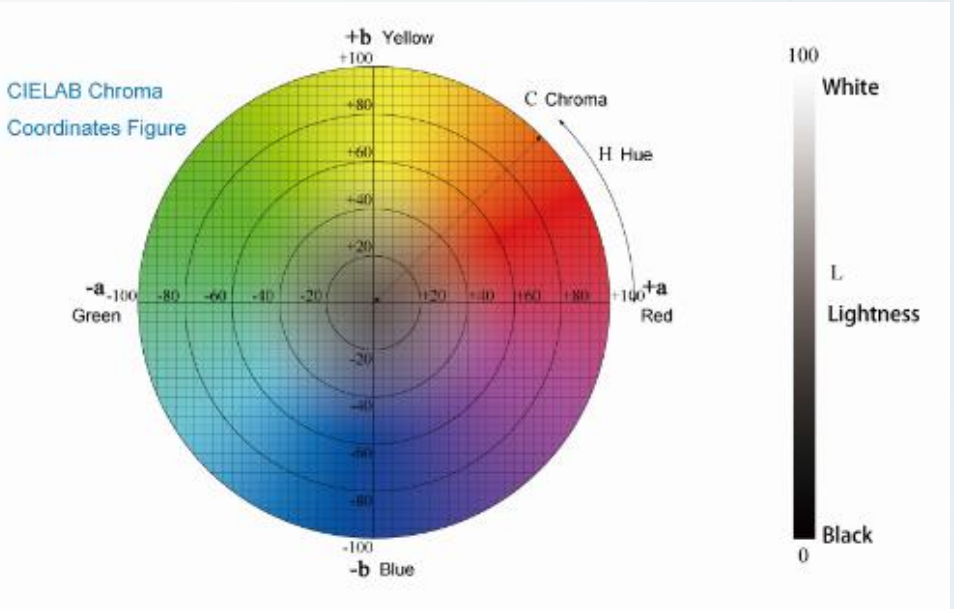
- En az %55-60, genelde %85-90

Objektif

- Konica Minolta, Hunter

Objektif

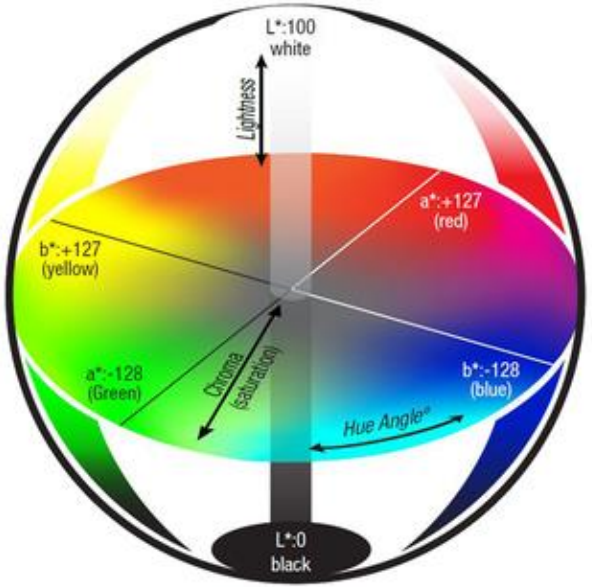
- Uluslararası Aydınlatma Komisyonu (Commission Internationale de l'éclairage - CIE)
- Matematiksel renk sistemleri, her bir noktası bir renge karşılık gelen üç boyutlu sanal renk uzayları oluşturarak kurulur.



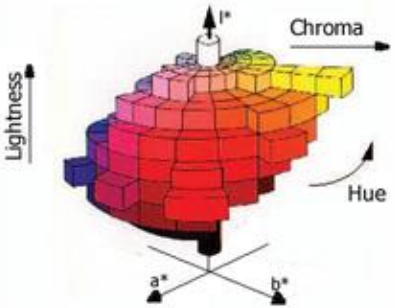
- 1976 CIElab veya CIELab üç nokta ölçüm yöntemi
- L* parlaklık (0-100)
- +a* kırmızı, -a* yeşil
- +b*sarı, -b* mavi

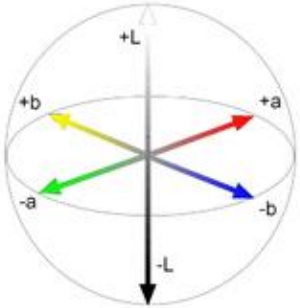
- C* (kroma) doygunluk
- h° (hue-açı) renk tonu 0° kırmızı, 90° sarı, 180° yeşil, 270° mavi

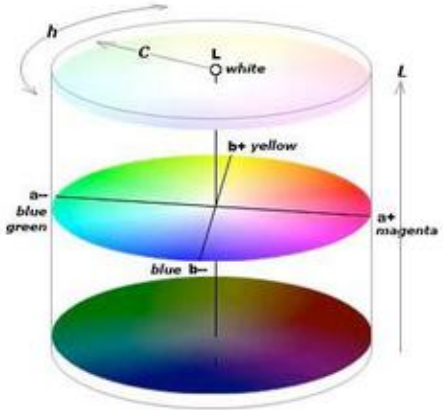
$$C^* = \sqrt{a^{*2} + b^{*2}} \qquad Hue(°) = tan^{-1}\left(\frac{b^*}{a^*}\right)$$



$$Hue(°) = tan^{-1}\left(\frac{b^*}{a^*}\right)$$







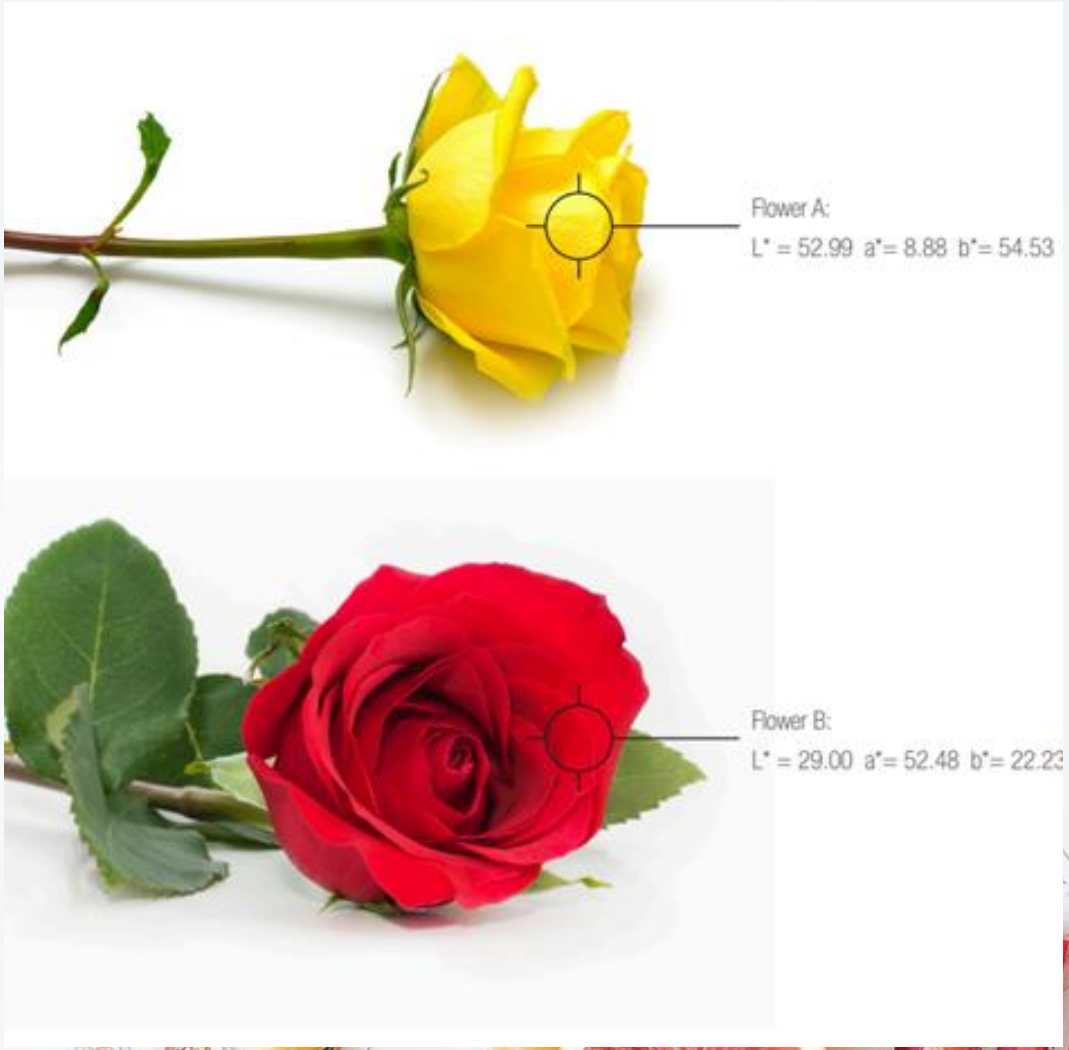
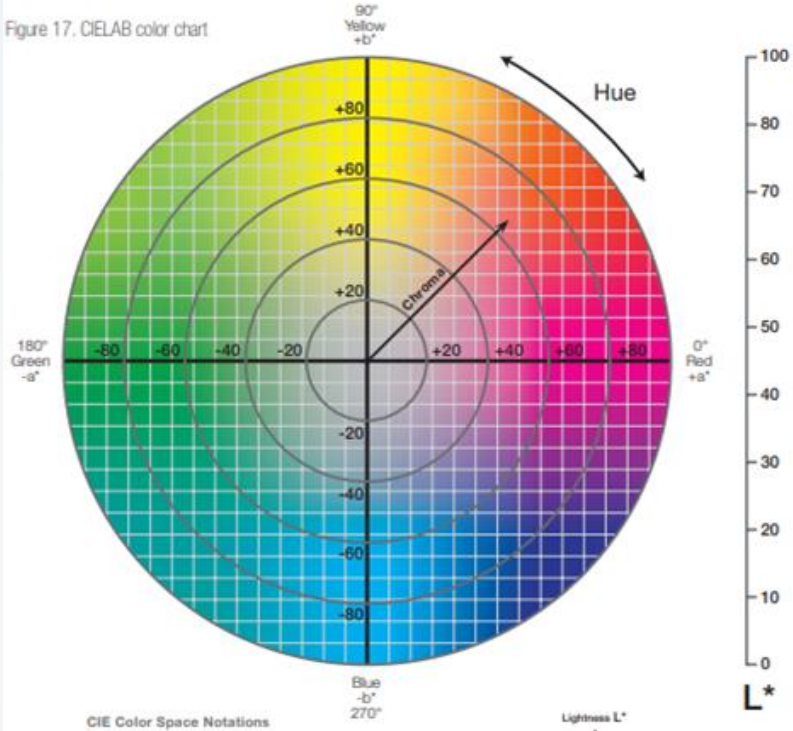


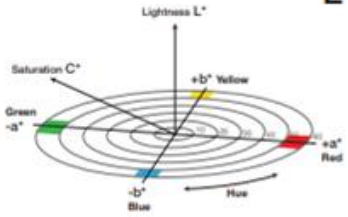
Figure 17. CIELAB color chart



CIE Color Space Notations

ΔL^* -	difference in lightness/darkness value	"+" = lighter "–" = darker
Δa^* -	difference on red/green axis	"+" = redder "–" = greener
Δb^* -	difference on yellow/blue axis	"+" = yellower "–" = bluer
ΔC^* -	difference in chroma	"+" = brighter "–" = duller
ΔH^* -	difference in hue	
ΔE^* -	total color difference value	
ΔE^*_{cmc} -	total acceptable color difference value	

ΔE^*_{ab} 1942 • ΔE^*_{ab} 1976 • ΔE_{CMC} 1984 • ΔE_{94} 1988 • ΔE_{00} 2000



$$\Delta E^*_{ab} = \sqrt{(L^*_2 - L^*_1)^2 + (a^*_2 - a^*_1)^2 + (b^*_2 - b^*_1)^2}$$

Apple 1

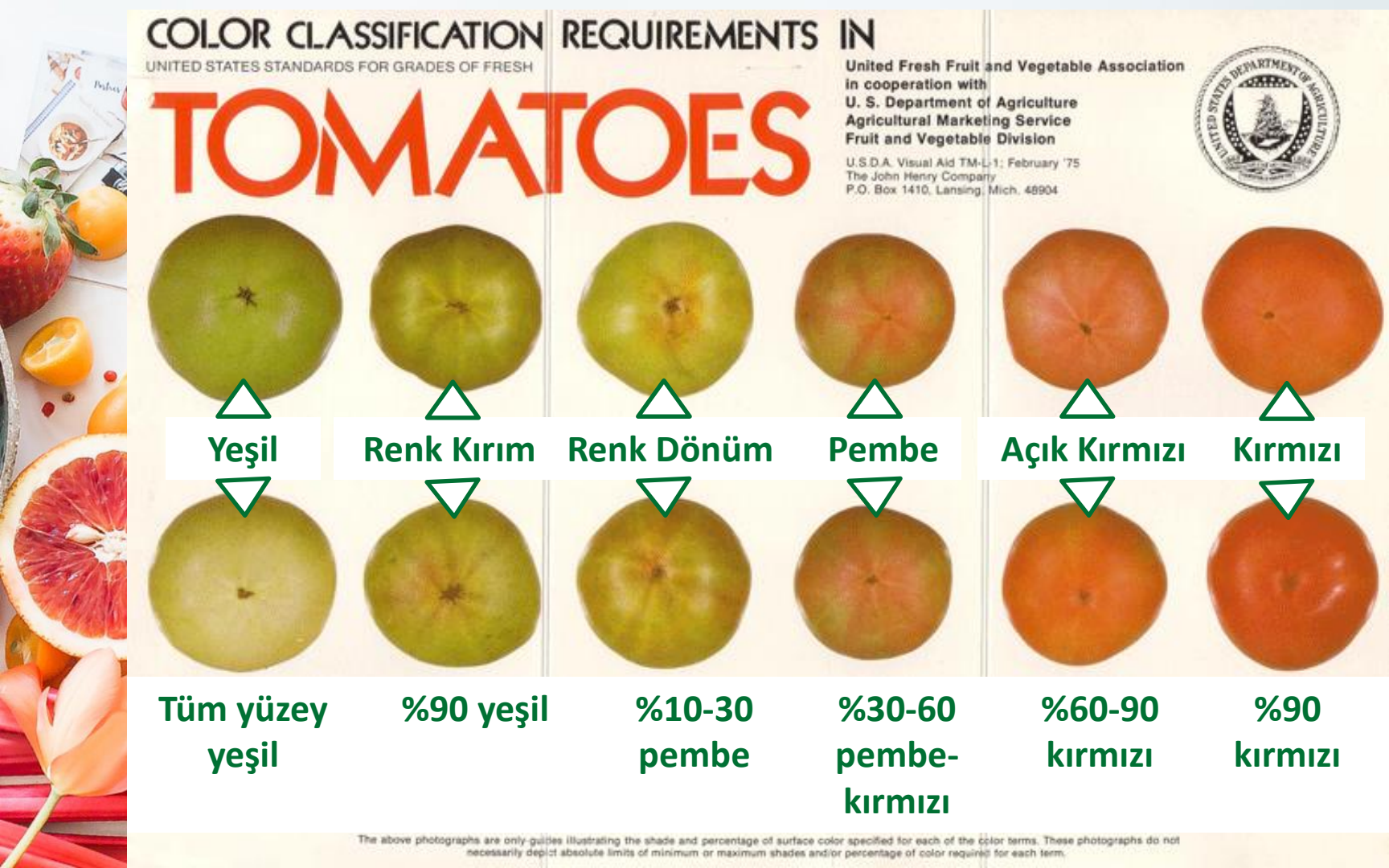
L* = 43.31
a* = 47.63
b* = 14.12

L*a*b* Color Difference

ΔL* = +4.03
Δa* = -3.05
Δb* = +1.04
ΔE* = 5.16

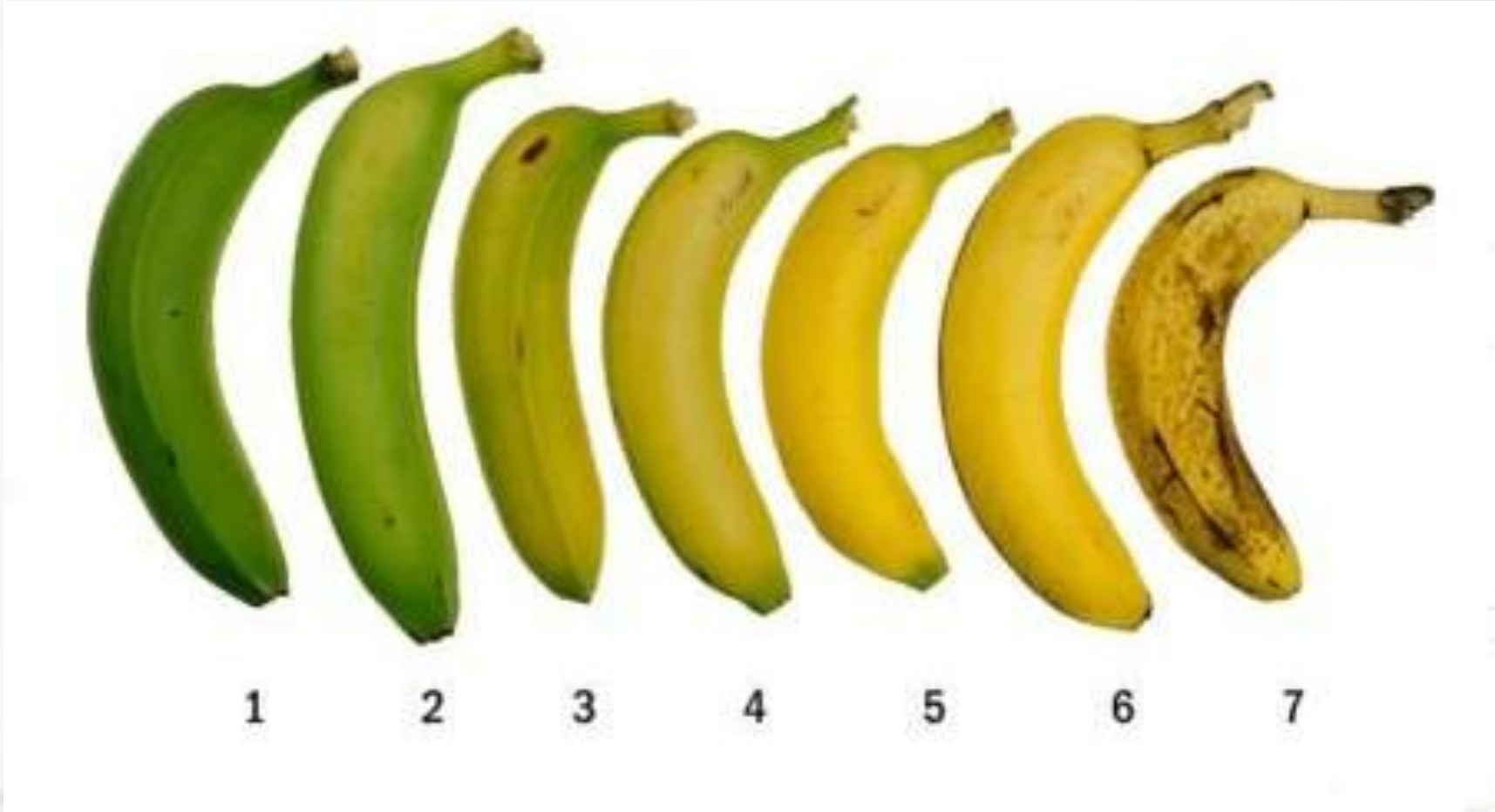
Apple 2

L* = 47.34
a* = 44.58
b* = 15.16


COLOR CLASSIFICATION REQUIREMENTS IN
UNITED STATES STANDARDS FOR GRADES OF FRESH
TOMATOES
United Fresh Fruit and Vegetable Association
in cooperation with
U. S. Department of Agriculture
Agricultural Marketing Service
Fruit and Vegetable Division
U.S.D.A. Visual Aid TM-L-1; February '75
The John Henry Company
P.O. Box 1410, Lansing, Mich. 48904
Yeşil
Renk Kırım
Renk Dönüm
Pembe
Açık Kırmızı
Kırmızı
Tüm yüzey yeşil
%90 yeşil
%10-30 pembe
%30-60 pembe-kırmızı
%60-90 kırmızı
%90 kırmızı
The above photographs are only guides illustrating the shade and percentage of surface color specified for each of the color terms. These photographs do not necessarily depict absolute limits of minimum or maximum shades and/or percentage of color required for each term.

Mangoda olgunlaşma sırasında kabukta renk değişimi

Muzda olgunlaşma sırasında kabukta renk değişimi



Banana Color Guide

1

Yeşil

2

Sarı izli yeşil

3

Sarıdan daha fazla yeşil

3.5

Yarı sarı yarı yeşil

4

Yeşilden daha fazla sarı

5

Yeşil uçlu ve boyunlu sarı

6

Sarı

7

Kahverengi benekli sarı