SHELF LIFE EXTENSION OF TOMATO USING CA FILMS

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SHELF LIFE EXTENSIONS USING CA FILMS

Program Objective:

1. To maintain quality and freshness of tomato, Color Scale 5 stored at Bharti Walmart's Kota facility at 25°C ambient temperature
2. To prove that designs with CA Film generate a shelf life greater than that of design without films (control in air)

Designs Tested:

PROTOCOL A - CA Film based packaging opened daily

PROTOCOL B - CA Film based packaging opened alternate days

PROTOCOL C – Control packaging without CA Film

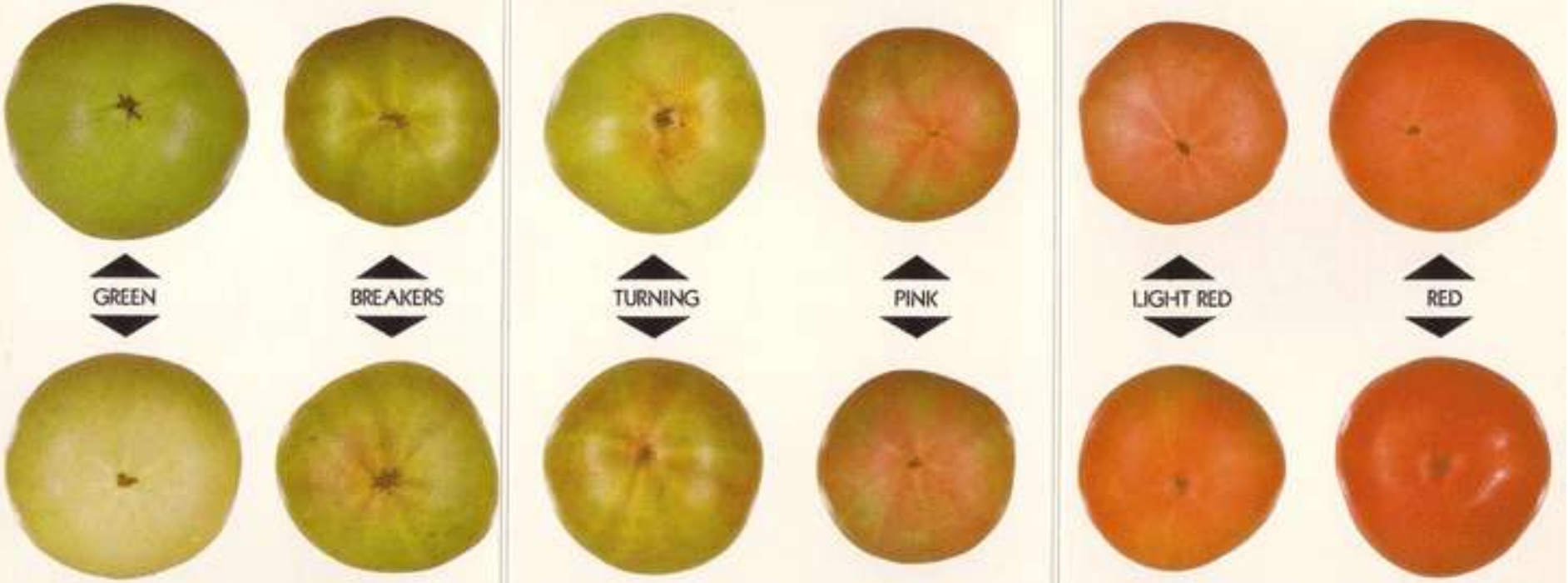
COLOR CLASSIFICATION REQUIREMENTS IN

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



(1) "Green" means that the surface of the tomato is completely green in color. The shade of green color may vary from light to dark;

(2) "Breakers" means that there is a definite break in color from green to tannish-yellow, pink or red on not more than 10 percent of the surface;

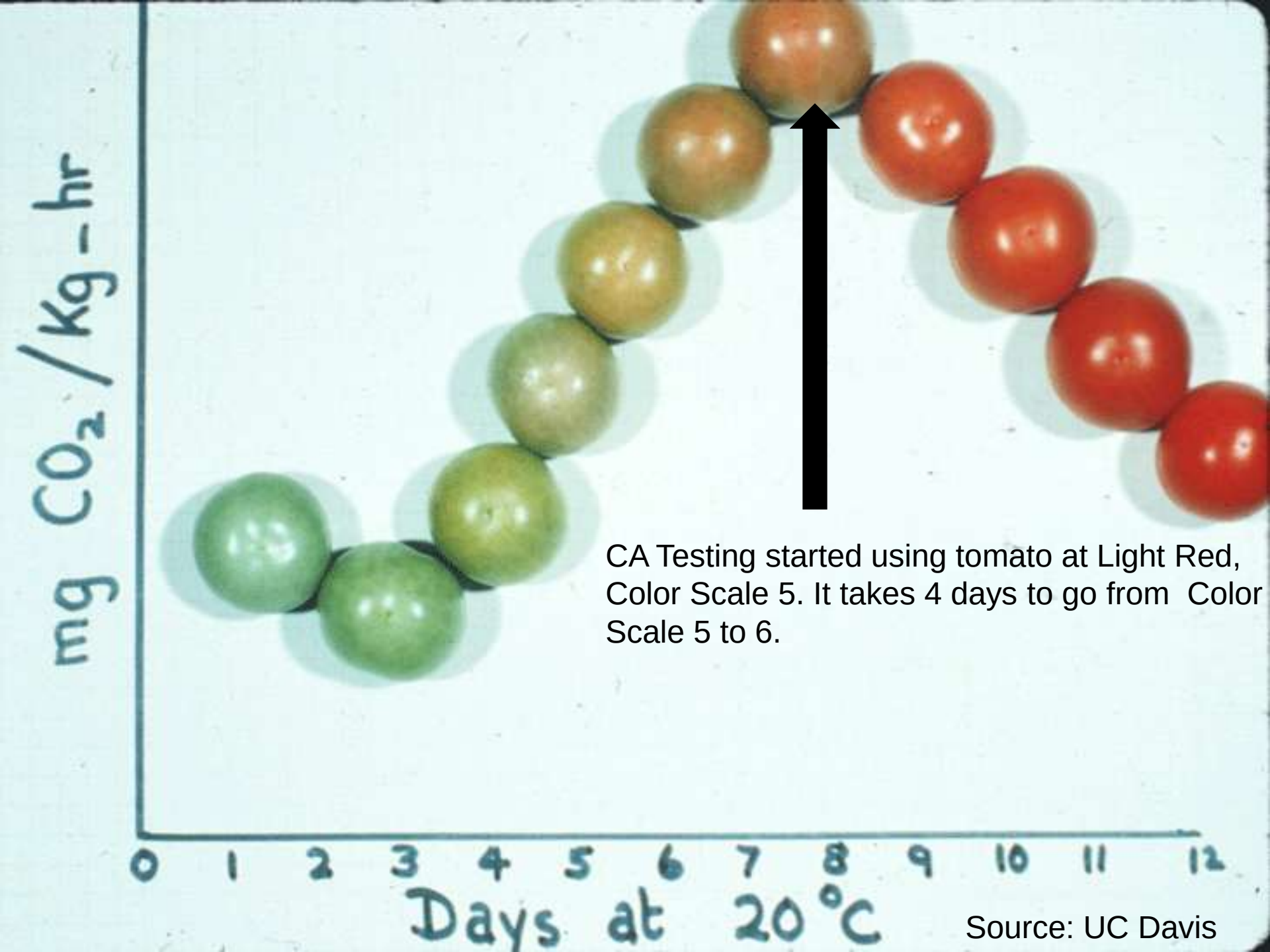
(3) "Turning" means that more than 10 percent but not more than 30 percent of the surface, in the aggregate, shows a definite change in color from green to tannish-yellow, pink, red, or a combination thereof;

(4) "Pink" means that more than 30 percent but not more than 60 percent of the surface, in the aggregate, shows pink or red color;

(5) "Light red" means that more than 60 percent of the surface, in the aggregate, shows pinkish-red or red: *Provided*, That not more than 90 percent of the surface is red color; and,

(6) "Red" means that more than 90 percent of the surface, in the aggregate, shows red color.

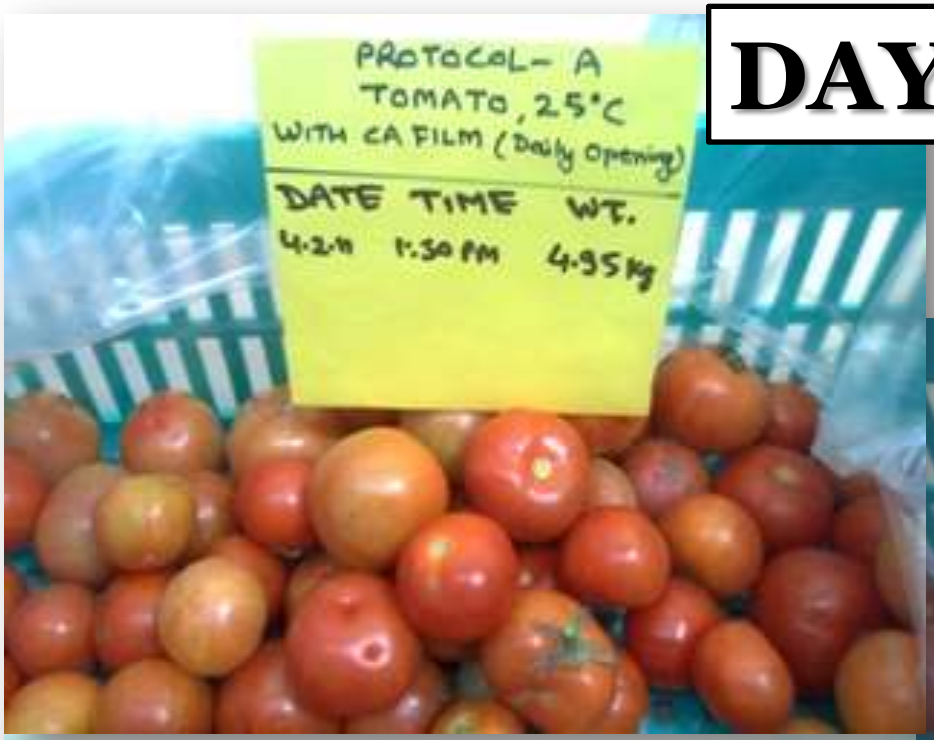
The above photographs are only guides illustrating the shade and percentage of surface color specified for each of the color terms. These photographs do not necessarily depict absolute limits of minimum or maximum shades and/or percentage of color required for each term.



CA Testing started using tomato at Light Red, Color Scale 5. It takes 4 days to go from Color Scale 5 to 6.

Source: UC Davis

DAY 1


PROTOCOL- A
TOMATO, 25°C
WITH CA FILM (Daily Opening)
DATE TIME WT.
4.2.11 1:30 PM 4.95kg


PROTOCOL- C
TOMATO, 25°C
WITH OUT CA FILM
(CONTRAL)
DATE TIME WT
4.2.11 1:30 PM 5.0kg


PROTOCOL - B
TOMATO, 25°C
WITH CA FILM (Alternate day opening)
DATE TIME WT.
4.2.11 1:30 PM 4.9 0kg

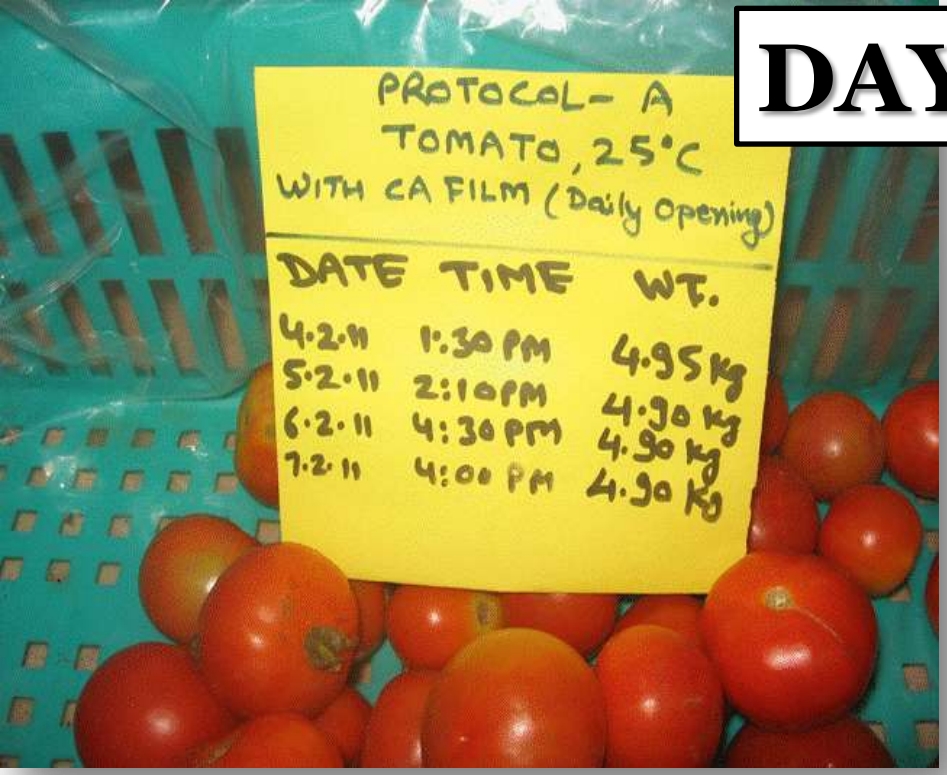
DAY 2

PROTOCOL	LOSS (%)
A	1.01
B	0
C	2

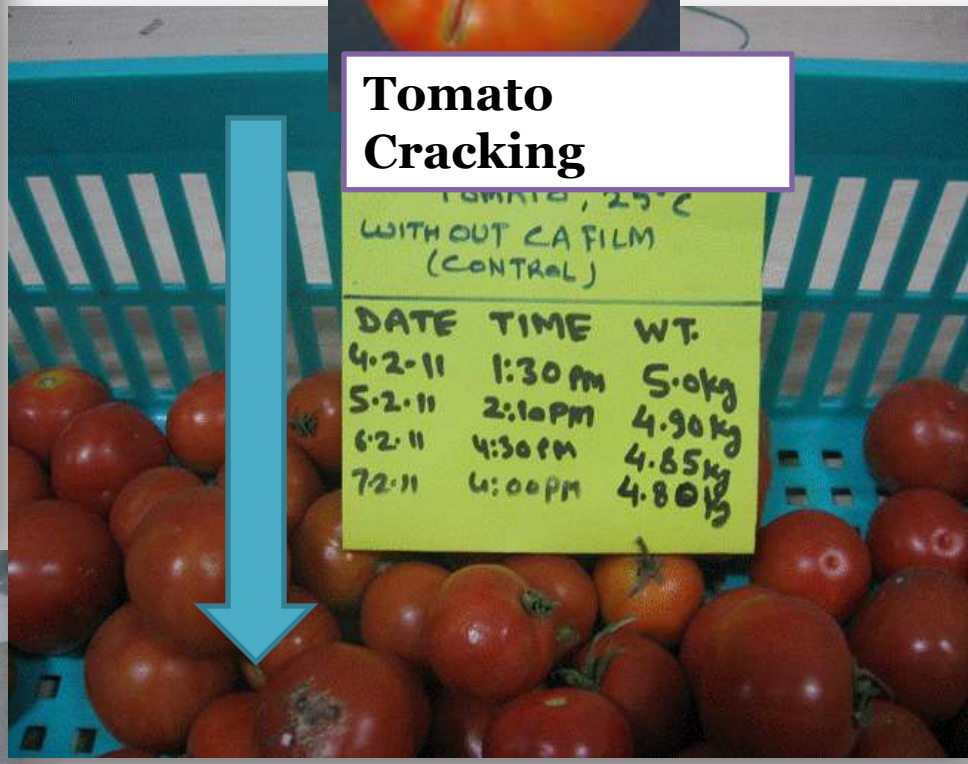
DAY 3

PROTOCOL	LOSS (%)
A	1.01
B	0
C	2

DAY 4



Tomato Cracking



PROTOCOL	LOSS (%)
A	1.01
B	0
C	4

DAY 5

PROTOCOL	LOSS (%)
A	2.02
B	0
C	5

DAY 6

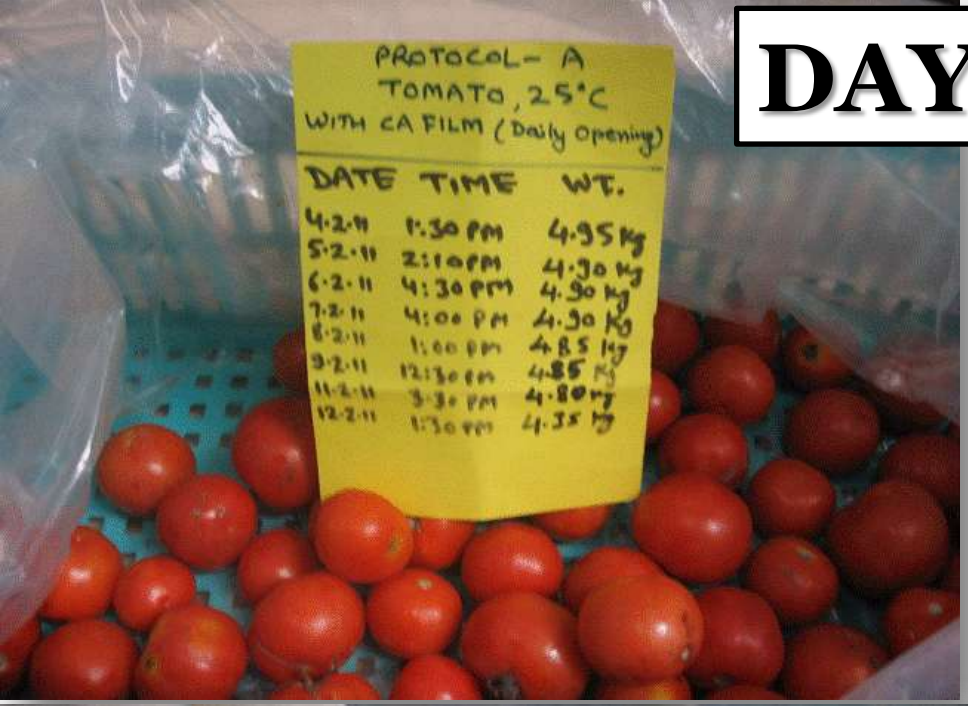
Tomato Fusarium

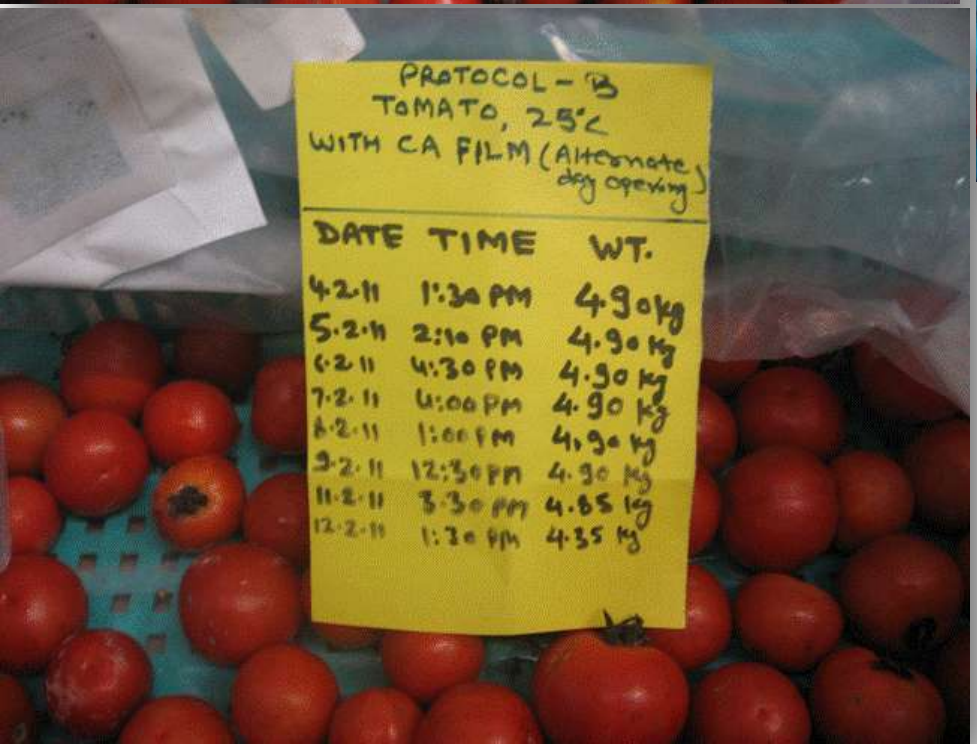
PROTOCOL	LOSS (%)
A	2.02
B	0
C	6

DAY 8

PROTOCOL	LOSS (%)
A	3.03
B	1.02
C	8

DAY 9



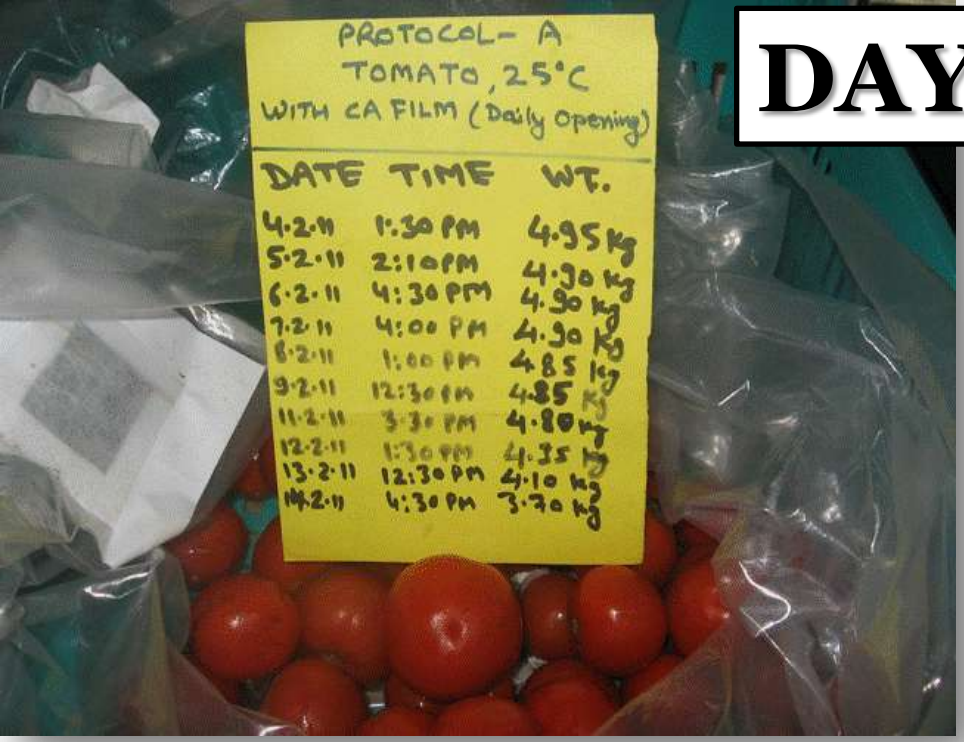


PROTOCOL	LOSS (%)
A	12.12
B	11.2
C	20

DAY 11

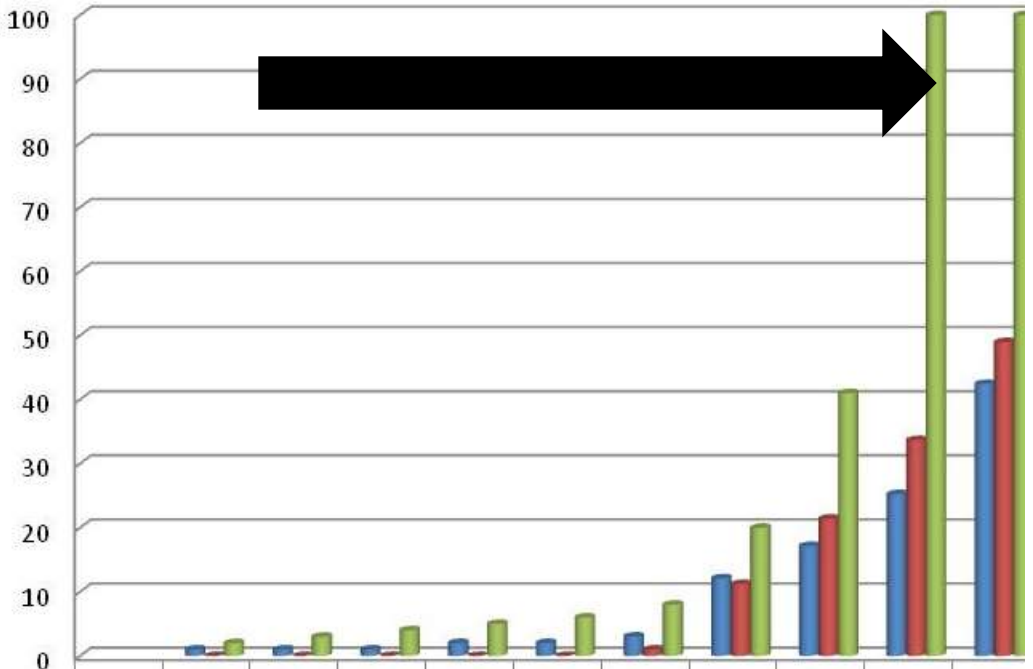
PROTOCOL	LOSS (%)
A	17.01
B	21
C	41

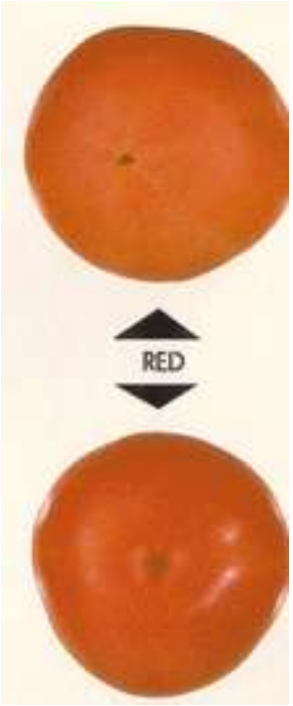
DAY 12



PROTOCOL	LOSS (%)
A	25.01
B	33
C	100

CA FILMS extends shelf life of light red tomato at 25 C to 11+ days. Control losses started by Day 4. Shelf life of Tomato at Breakers color 2 has been extended to 21 days





	0	1	2	3	4	5	7	8	9	10	11
TOMATO PROTOCOL-A Loss (%)		1	1	1	2	2	3	12	17	25	42
TOMATO PROTOCOL-B Loss (%)		0	0	0	0	0	1	11	21	34	49
TOMATO PROTOCOL-C Loss (%)		2	3	4	5	6	8	20	41	100	100