

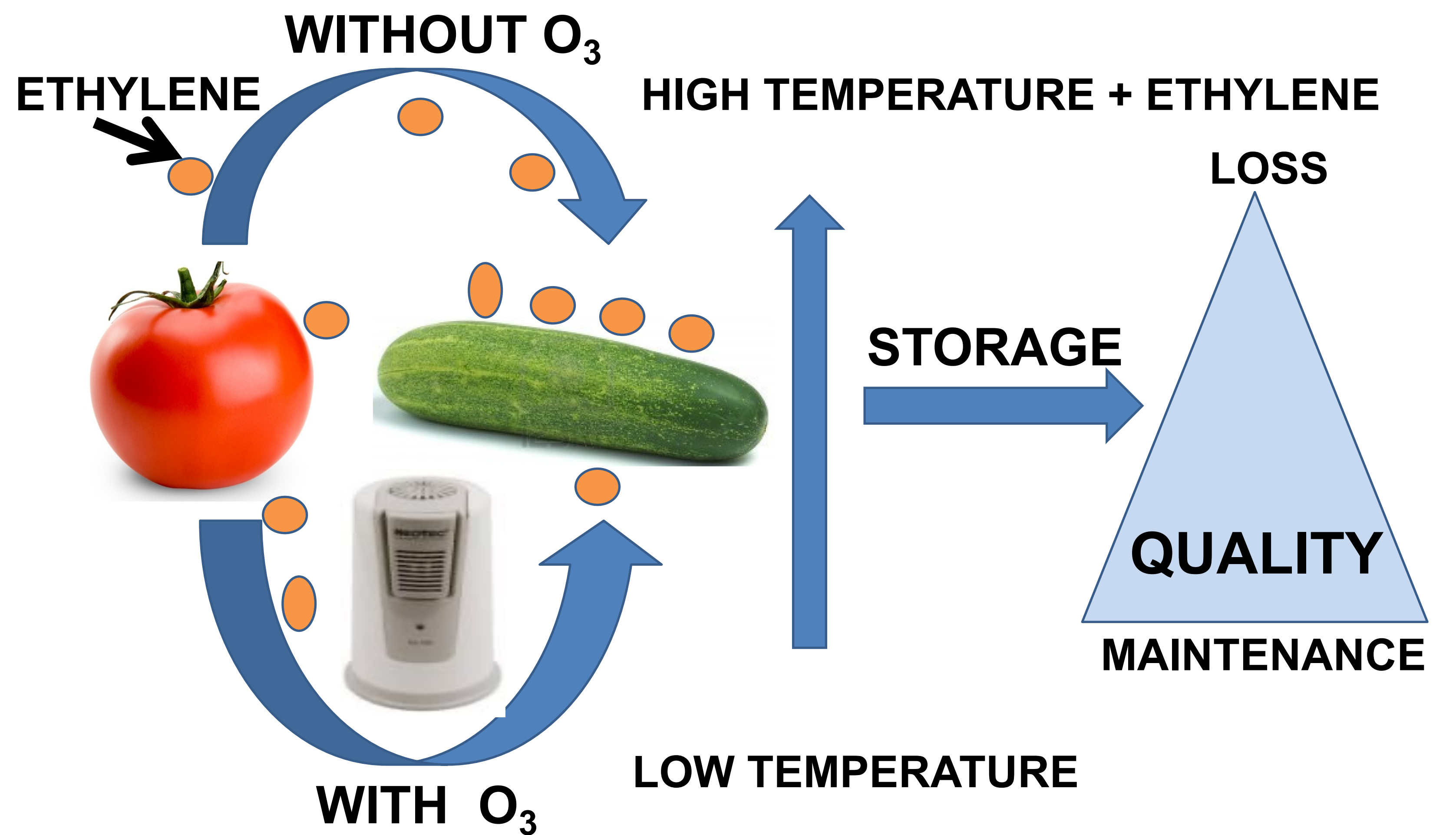
1. Introduction

In practice, ethylene-sensitive and ethylene-producing horticultural products are usually shipped and stored together. Therefore, ethylene damage and decay could increase quickly during storage.

SOLUTION



Evaluating the effectiveness of ozone in preventing postharvest loss for both tomato and cucumber when stored together.



2. Materials and methods

- Cucumber and tomato were bought from a wholesale fruit and vegetable market.
- 4 boxes, each box containing 15 cucumbers and 15 tomatoes. Cucumber was at green stage. Tomato was at red stage 5 of ripening according to tomato ripeness chart (Postharvest Technology center, UC Davis).

Table 1. Experimental design

Temperature	14°C	20°C
Sample	Control	Control
Cucumber and tomato	Control	Control
Cucumber and tomato	Ozone	Ozone

Measurements were performed before storage (day 0) and in 4-d intervals during 16 days.

3. Results

3.1 Effect of ozone on weight loss of vegetables

Vegetables stored with ozone at 14°C had less weight loss than the ones with other treatments (Fig.1).

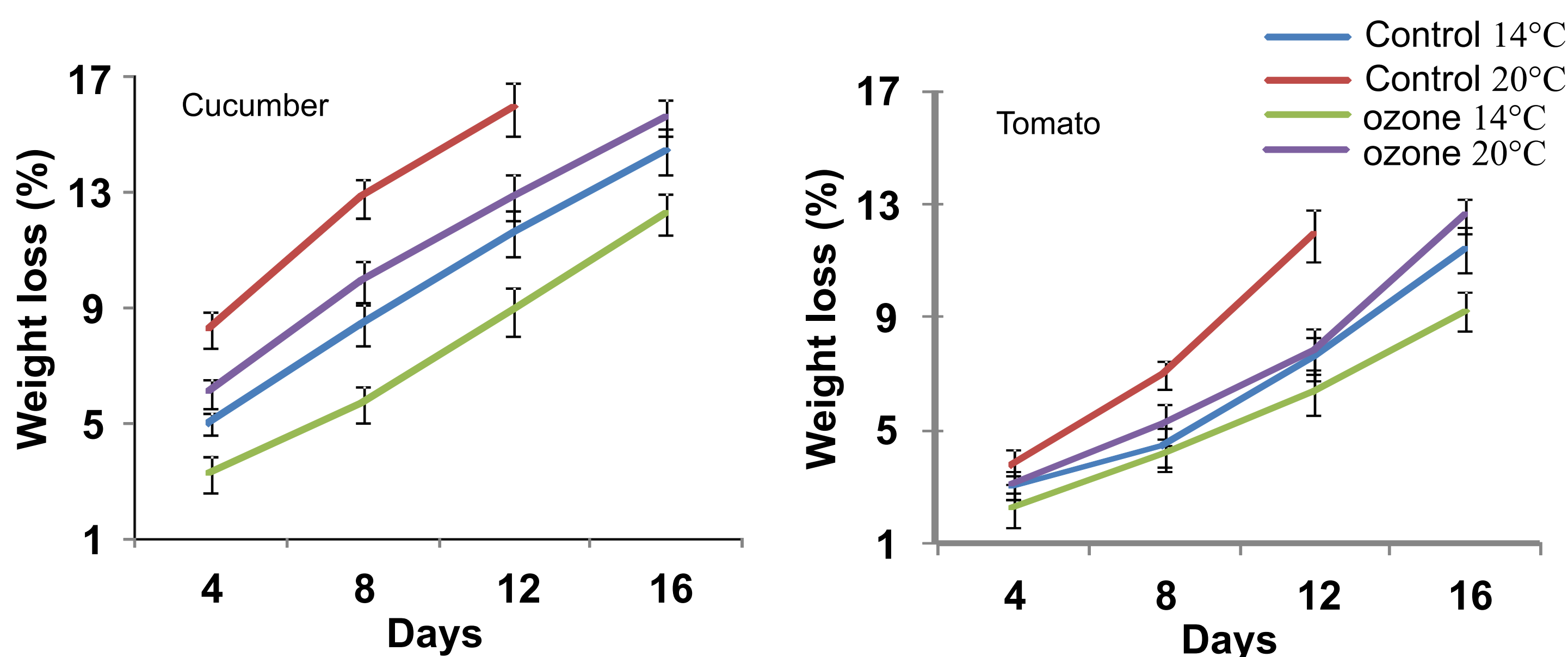


Fig 1. Weight loss of vegetables during storage

3.2 Effect of ozone on stiffness of vegetables

Vegetables kept at 14°C were firmer than those stored at 20°C (Fig. 2). The ozone could limit the activity of ethylene in ripening so firmness of ozone vegetables was maintained during storage.

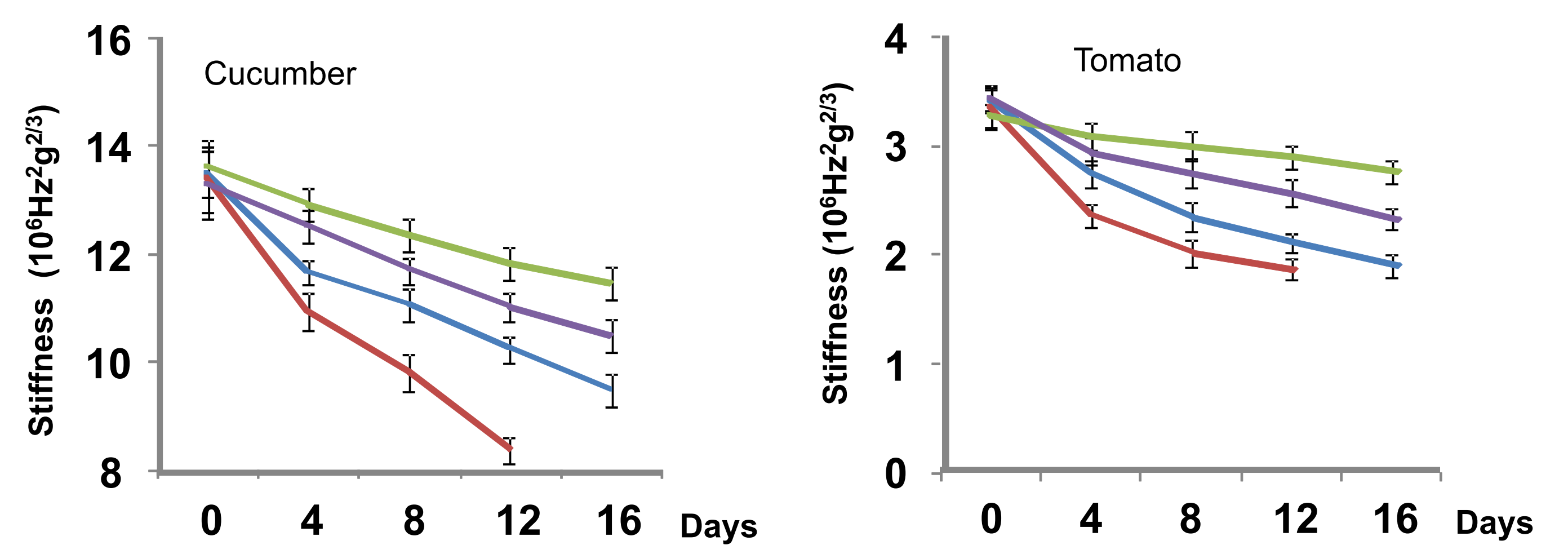


Fig 2. Stiffness of vegetables during storage

3.2 Effect of ozone on surface color of vegetables

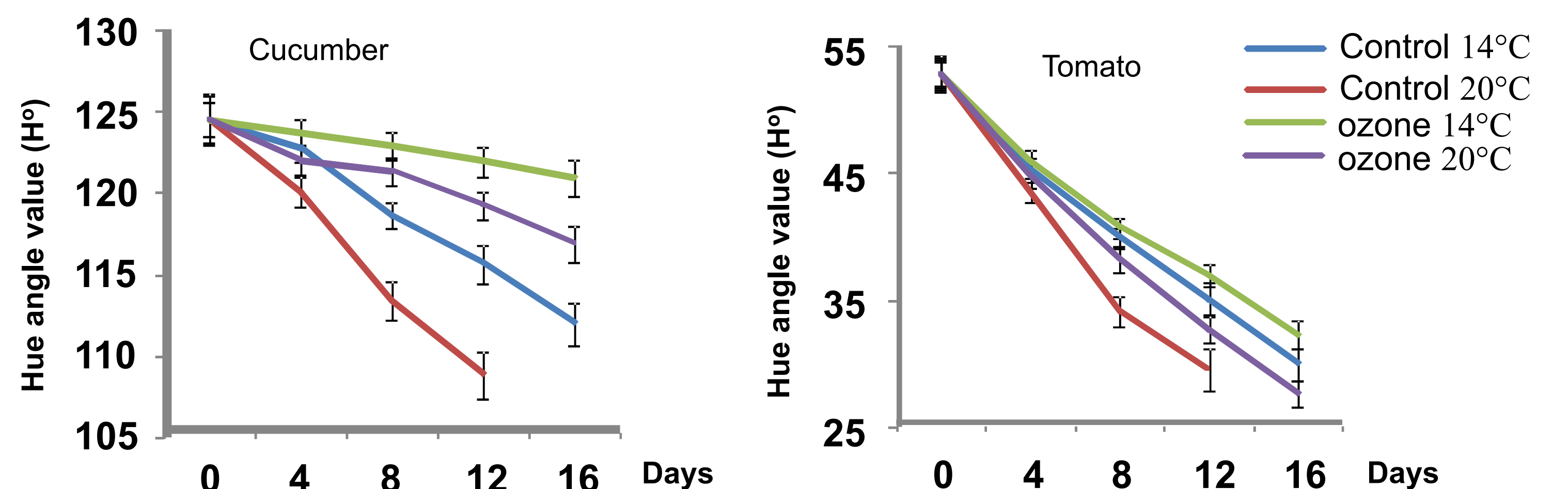


Fig 3. Hue angle value of vegetables during storage

The skin of control cucumber turned from green to yellow rapidly after 8 days of storage, whereas samples stored with ozone were still green.

3.2 Effect of ozone on decay of vegetables

Fewer samples were lost due to decay in ozone groups than control groups

Table 2. Percentage of decayed samples during storage

Vegetable	Sample	Decay (%)			
		4d	8d	12d	16d
Cucumber	Control 14°C	6.7a	26.7a	66.7a	86.7a
	Control 20°C	20.0b	51.4b	93.3b	-
	Ozone 14°C	0	0	6.7c	13.3b
	Ozone 20°C	0	6.7c	20.0d	33.3c
Tomato	Control 14°C	6.7a	13.3a	33.3a	66.7a
	Control 20°C	13.3b	33.3b	86.7b	-
	Ozone 14°C	0	0	6.7c	20.0b
	Ozone 20°C	0	13.3c	26.7d	33.3c

Means within each cultivar followed by the same letter were not statistically different at the 5% level

4. Conclusion

Storing cucumber and tomato with ozone can reduce the weight loss, softening, the change of color and postharvest decay. The combination of ozone and cold storage has potential in maintaining the quality of commodities throughout storage.