

How Ethylene Gas Affects Your Produce & Floral Commodities

Fruit naturally gives off ethylene gas and the more it builds up in the cooler, refrigerator or storage room, the more quickly the ethylene sensitive food ripens. Even if ethylene gas only exist at levels of a few parts per billion (ppb), ethylene gas, if not controlled, can be extremely damaging to fruits, vegetables and even flowers.

Ethylene gas has the following effects: **decay** (fresh produce and flower bulbs); **russet spotting** (leafy vegetables and eggplants); **yellowing** (cucumbers, broccoli and brussel sprouts); **odor** (garlic and onions); **wilting** (vegetables and cut flowers); **scald** and **loss of crunch** (apples); and **rind breakdown** (citrus). If you control ethylene gas levels you can help preserve freshness and that's what [CoolerKING®](#) and [Polar Fresh®](#) are all about.

Fruits & Vegetables Types	Rate of Ethylene	Level of Ethylene Sensitivity	Principal reaction to Ethylene Gas
Apples	VH	H	Scald (*1)
Apricots	H	H	Decay
Asian Pears	H	H	Decay
Asparagus	VL	M	Toughness
Avocados	H	H	Decay
Bananas	M	H	Decay
Berries	L	L	Mold
Broccoli	VL	H	Yellowing
Brussel Sprouts	VL	H	Yellowing
Cantaloupe	H	M	Decay
Carrots	VL	L	Bitterness
Cherimoya	VH	H	Decay
Cherries	VL	L	Softening
Cucumbers	L	H	Yellowing
Eggplant	L	M-H	Brown Spots
Grapefruit	VL	M	Mold
Grapes	VL	L	Mold
Kiwifruit	L	H	Decay
Lemons, Limes	VL	M	Mold
Lettuce (*2)	VL	H	Russet spotting
Mangoes	M	H	Decay
Melons (*3)	M	H	Decay
Nectarines	H	H	Decay
Onions, Garlic	VL	L	Odor, sprouting
Oranges	VL	M	Mold (*4)
Papaya	H	H	Decay
Passion Fruit	VH	H	Decay
Peaches	H	H	Decay
Pears (*5)	H	H	Decay
Persimmons	L	H	Decay
Plums, Prunes	M	H	Decay
Potatoes (*6)	VL	M	Sprouting
Quinces	L	H	Decay
Tomatoes	M	H	Shrink, decay
Watermelons	L	H	Lose firmness
Floral & Nursery Commodities			
Carnations -Cut	VL	H	Sleepiness (*7)
Roses -Cut	VL	H	Prem. opening
Flower Bulbs	VL	H	Shrink (*8)
Nursery Stock	VL	H	Slower start

VL = Very low, L = Low, M = Moderate, H = High, VH = Very High

*1. Lose crunch

*5. Anjou, Bartlett, Bosc

*2. Leafy greens

*6. Processing, Seed

*3. Crenshaw, Honeydew, Persian

*7. Leaf curl

*4. Rind breakdown

*8. Retards flower formation

Source: *Fresh Produce Manual* for 1997 from the Produce Marketing Association and the 1991 *Sea Land Shipping Guide for Perishables*.