Assignment #1
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Unity Farm in Sherborn, Massachusetts, established in 2012, is a 15 acre, Massachusetts 61A property that is also a bonded winery (for cider and mead production). We grow about 25% of our food in a 50x20 foot high tunnel. We have 55 different types of apples, 180 blueberry plants (early, medium, late), 10000 pounds of oak under Shitake production, and multiple outdoor raised beds for squash, pumpkin, and garlic. We also keep 25 bee hives.

On the morning of July 25, 2015 we harvested the fruits and vegetables shown in the picture below.

Items included

Mature Roma Tomatoes - Climacteric, ethylene producer, 55-65F
Mature Taxi Tomatoes - Climacteric, ethylene producer, 55-65F

Blackberry/Raspberry - Non-Climacteric, very low ethylene producer.32-36F
Blueberries - Non-Climacteric, very low ethylene producer, 32-36F

Kabocha (winter squash) - Non-Climacteric, not ethylene sensitive, 55-65F
Late Crop Potatoes - Non-Climacteric, not ethylene sensitive, 40-45F
Rutabega - Non-Climacteric , not ethylene sensitive, 32-36F
Garlic - Non-Climacteric not ethylene sensitive, 32-36F

Hungarian wax peppers - Non-Climacteric, ethylene sensitive, 40-45F
Jalapeño peppers - Non-Climacteric, ethylene sensitive, 40-45F
Cucumbers - Non-Climacteric, ethylene sensitive, optimal shelf life at 55F
Zucchini - Non-Climacteric, ethylene sensitive, 45-50F
Cranberry beans/Jacob's cattle beans - Non-Climacteric, ethylene sensitive, 40-45F

Here's a photo separating out the climacteric tomatoes from the remainder of the non-climacteric items

Our storage facilities include

Commercial refrigeration (9x12 walk in cooler kept at 36F, 90% RH)
Residential Refrigeration (40F, 85% RH)
A root cellar (50F, 75% RH)
An air conditioned mud room, chilled to nightly temperatures (60F, 55% RH)

In the past, we have not sorted our commodities based on climacteric/non-climacteric, ethylene producers/ethylene sensitive, or chill damage susceptibility. We have had significant post-harvest losses.

Based on today's harvest, we will separate ethylene producers from ethylene sensitive produce, storing each item at the optimal temperature

Commercial refrigerator - stored in stacking bins with good air circulation 36F
Blackberry/Raspberry - will be eaten within 10 days
Blueberry - will be eaten within 10 days
Rutabega - will be eaten within 10 days
Garlic -will be fully dried before refrigeration

Residential Refrigeration - stored in vegetable bin with higher humidity 40F
Late Crop Potatoes - will be eaten within 10 days
Hungarian wax peppers - will be pickled within 10 days
Jalapeño peppers - will be pickled within 10 days
Beans - will be eaten within 10 days

Root Cellar - stored in wooden racks 50F
Zucchini - will be eaten within 10 days
Cucumbers - will be pickled within 10 days

Mudroom - stored in a single layer in plastic bins with good air circulation 60F
Kabocha - will age for 2 weeks before consumption to enable starches to convert to sugars
Mature Roma Tomatoes - will can them for sauce within 10 days
Mature Taxi Tomatoes - will slice and dry in a commercial vegetable dryer within 10 days

This arrangement addresses issues with ethylene, temperature, and odor transmission. Although our humidity conditions are not optimal (high enough) for each commodity, they are the best we can achieve with current equipment.

Of interest, last season, we stored a few hundred pounds of aging apples in the commercial refrigerator, along with numerous ethylene sensitive commodities. We had rapid losses of carrots, chard, lettuce, cabbage, and spinach. We also produce hundreds of pounds of Shitake mushrooms each year and stored them with apples. We will not make these mistakes again!