Temperate Fruit and Vegetable Juice Crops

Apple, Cranberry and Tomato
Apple - the main temperate fruit juice crop
Originally from the Afghanistan region the apple is grown around the world from South Africa to China to Germany to Mexico to Argentina.

‘Delicious’ the leading variety was found as a seedling under a ‘Bellflower’ apple tree in Iowa in 1870.

Apples are grown on grafted trees not apple seedlings to preserve the fruit and tree characteristics.

Scion is top, rootstock is bottom.

Rootstocks used to dwarf and/or provide resistance to biological (pest, disease) and physical (drought, cold) stress.
Pruning is essential to maintain size and rejuvenate.
Harvesting is by hand from ground for young and dwarfed trees and on ladders for standard trees.
Traditional apple press

Modern cider bottling

Cloudy cider

Sparkling cider

Filtering the juice

Clear apple juice

Fermenting apple & fruit
World Production of Apple

• World production 2009, 72M mt
• China 32 M mt
• US 4.5 M mt ($2B Washington, NY, Michigan)
• Turkey 2.8 M mt
• Poland 2.6 M mt
Cranberry - American fruit

Woody, 20-30 cm tall, need acid soil

Pollination by bees

Propagate from cuttings or tissue culture.
Harvesting

Hand rake and Self-propelled rakes after drained

Remove fruit from plant

Machine harvesting

Corral fruit with booms

Pick up fruit with conveyor bucket or suction.
World Production of Cranberry

- World 2009 400,000 mt
- US 312,000 mt ($260M)
- Canada 87,000 mt
- Belarus 5,000 mt
Tomato - South America’s gift

Perennial herb
Bush
(determinate) or
vine
(indeterminate)
flowering

Plant seed or
cuttings for
transplants

Single vs.
3 person
transplanter
Production methods

Staked field for fresh fruit

Unstaked field for mechanical harvest for juice/ sauce production

Staked greenhouse hydroponic for fresh
Harvesting

Mechanical tomato harvester, once over harvest based upon determinate bush type

Color break fruit for fresh being sorted

Ripe fruit for juice/ sauce
World Production of Tomato

- World Production 2009 153 M mt
- China 45 M mt
- US 14 M mt ($5.2B)
- India 11 M mt