



2015 ASTA
Annual Meeting
& Exhibits

Charleston, SC
April 12-15, 2015
Belmond Charleston Place Hotel

Domestic Garlic and Onion Crop Report

Susan Rojas
Sensient Natural Ingredients



California Onion & Garlic Overview

- Crop Overview for Onion & Garlic
- Factors Impacting Supply
- Factors Impacting Costs & Pricing
- California Water Situation
- 2015 Onion & Garlic Outlook



Crop Overview – US Onion

- US produces over 1/2 of global supply
- North Americans consume over 1/3 of global supply
- White onion
 - High solids content (bred for dehydration)
 - Higher pungency
 - No cross-over into fresh market
- Onions are cool season, biennial plants (2 years from seed to seed)
- Seed planted from September through April
- Harvested April through October – 7 months



Crop Overview – US Onion

- Vertically-integrated processors (from seed development & propagation to finished dehydrated onion)
- Full traceability down to grower and field level
- Continued investment in variety development has improved yield and solids, creating a sustainable and more energy-efficient onion than from any other origin.
- Processors contract directly with growers –
 - ❖ long-term trusted relationships and stability
 - ❖ process of continual improvements in yield, quality and food safety
 - ❖ Growers see onion as a desirable crop in their rotation cycle



Onion Growing Regions

- Grown in California (90%), Oregon and Washington (10%)
 - California is ideal for commercial onion dehydration
 - 10 degrees latitude between Mexican border and Oregon border offers 7 months steady throughput to processors
 - Geographic diversity lends stability to crop production (poor results in one region doesn't sink the entire crop)
 - Lack of precipitation during growing season allows for control of water (irrigation)
 - Majority of dehydration facilities located in Central California optimizing hauling from fields



Crop Overview – US Garlic

- U.S. is the 2nd largest global producer of dehydrated garlic. China is first.
- North Americans consume a little less than half of U.S. crop
- 100% dehy garlic is grown in California's Central Valley
- Stability of U.S. dehy garlic – grown specifically for dehydration, lending quality and stability which differs from China where dehy supply is what remains after fresh market
- Completely vertically-integrated processors (from seed development to finished dehydrated garlic)
- Full traceability down to grower and field level



Crop Overview – US Garlic

- Processors contract directly with California growers
 - long-term trusted relationships and stability
 - process of continual improvements in yield, quality and food safety
 - Innovating to manage scarce resources (i.e. drip irrigation)
- Garlic is multiplied by means of vegetative propagation meaning cloves of garlic are planted to produce the new crop
- Planting from September through October
- Harvested July through September – 3 months



Issues Impacting Supply

Challenges:

- Water restrictions for growers
- Acreage availability - competitive crops
- Rising demand for low micro product (food safety) means tighter supply on low bacti material
- Moving acres where water is available: less diversification of geography increases risk on yields

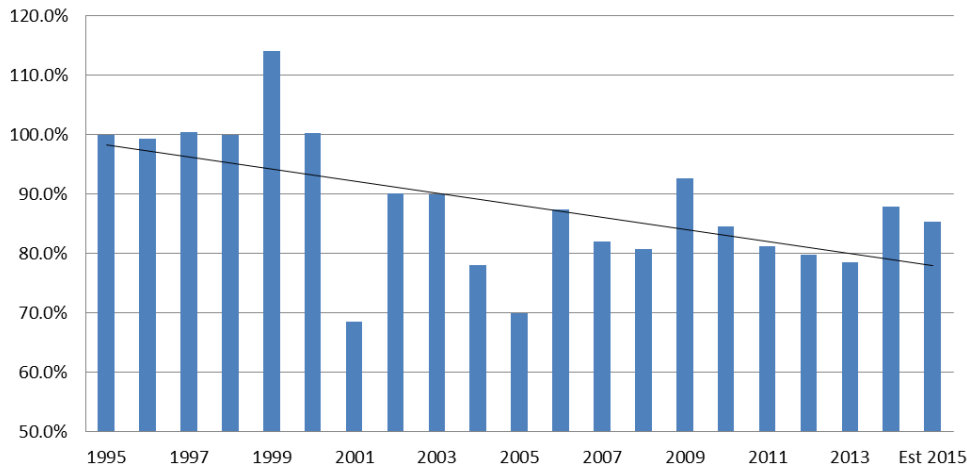
Mitigating Factors:

- Inventory carry over
- Long-term stability of grower base/dedication to growing onion and garlic

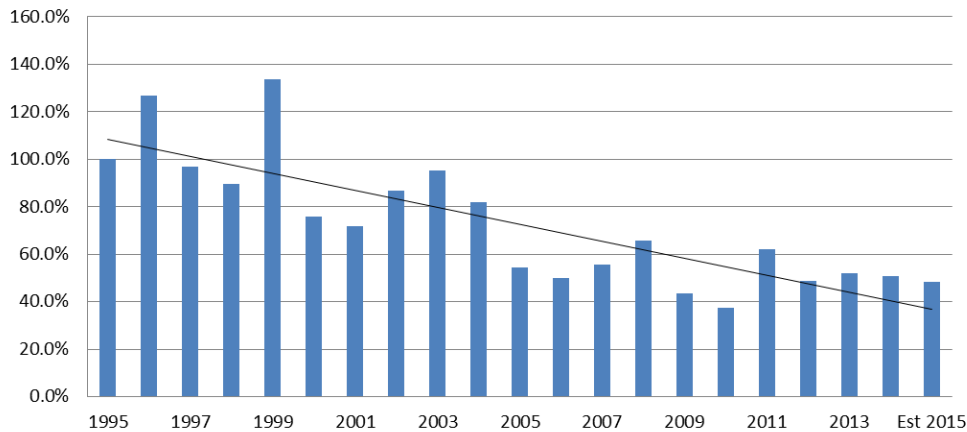


California O&G Production by Year

US Dehy Onion Production
(Base 1995=100)



US Dehy Garlic Production
(Base 1995=100)



- Build of inventory in 2014 due to a short 2013
- Stable onion production into 2015, though some build necessary on lower micro material
- Industry overall is not building inventory.

- Garlic crop has been on a downward trend the last three years
- Inventory carry levels remain tight on certain piece sizes due to lower yields in 2014



Issues Impacting Price

- Input costs (grower payments, natural gas, diesel, labor, regulatory and food safety)
- Cost of geography: additional freight to moving where water supply exists
- Competition from foreign product (China, India, Egypt) – supply and price volatility
- Variations in crop results (high-micro, defects)
- Special testing or additional processing
- Inventory carry



Competitive Crops

- O&G competes for land with such row crops as tomatoes, cotton, wheat, and alfalfa
- More acreage converting to permanent crops
 - In less than 10 years California almond acreage has increased from 590,000 to 860,000 acres
 - By 2020, California pistachio acreage is estimated to be close to 400,000 acres, up from 150,000 (2011)
- O&G growers are seeing increasing return per acre as competition for land increases



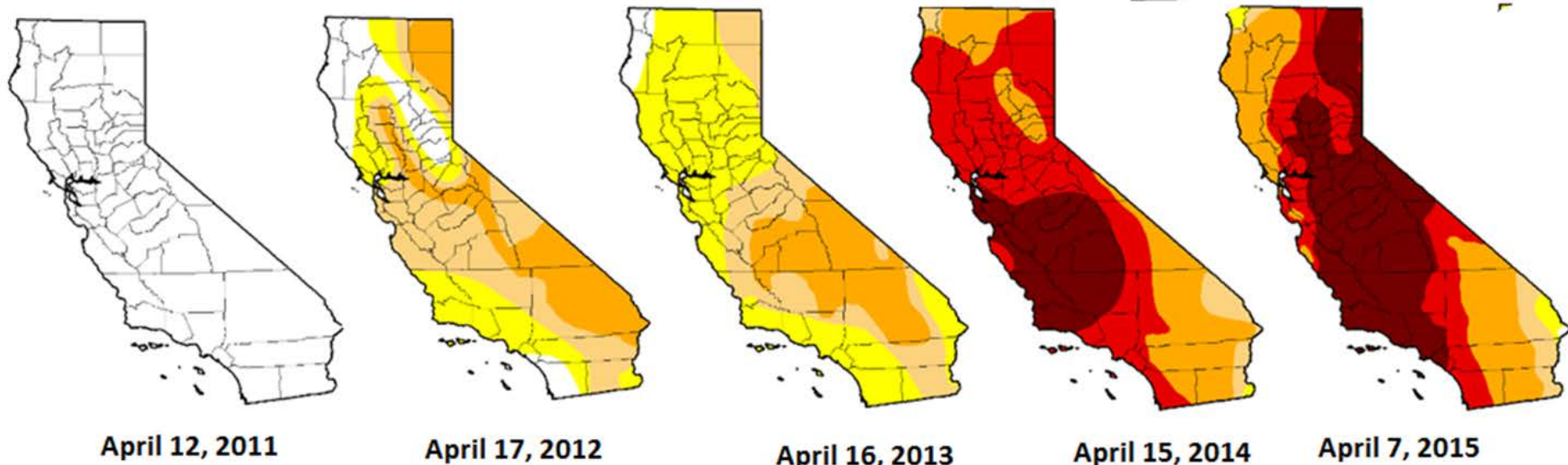
California Water Shortage

- January 2014 Governor declares drought emergency
- April 2015 Governor issued an executive order mandating water reduction of 25% across the State.
 - Current order does not call for reductions in agricultural water
- 4th straight year of drought
 - 44% of the State is highest category “exceptional drought”, 94% is “severe drought” or worse
- January 2015 lowest precipitation in 100 years
- Lack of snow pack – 5% of average
- Growers’ water allocation between 0% - 5%

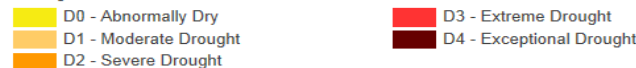


Drought Monitor -2011 through 2015

- California's water situation has gotten progressively worse over the last 5 years



Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements.

Author(s):

Michael Brewer, NOAA/NCDC



California Water Storage

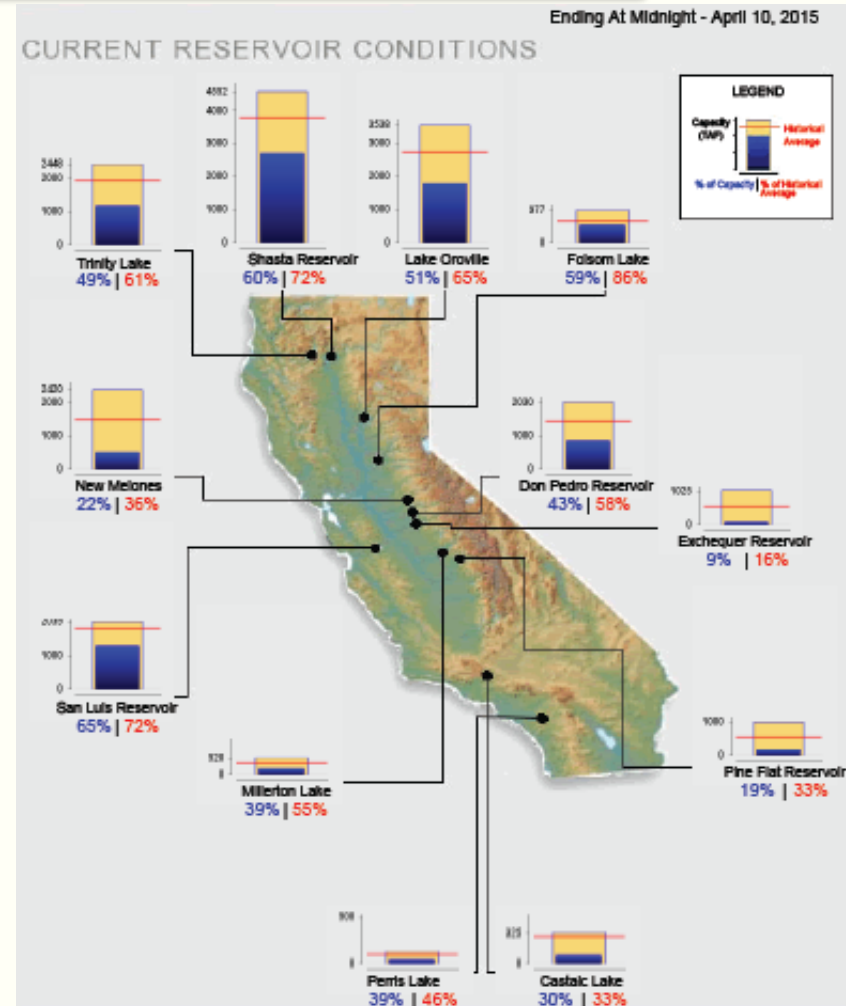
RESERVOIR WATER STORAGE (1,000 ACRE-FEET)											
	# OF RESERVOIRS	CAPACITY	HISTORICAL AVERAGE	STORAGE AT DECEMBER 31							
				1977	1983	2009	2010	2011	2012	2013	2014
ALL CALIFORNIA	154	37,994	22,012	9,774	30,255	16,797	25,557	25,948	24,287	15,475	14,697
			% OF AVERAGE	44%	137%	76%	116%	118%	110%	70%	67%
DRIEST RUNOFF YEAR THIS CENTURY											
WETTEST RUNOFF YEAR THIS CENTURY											

- Prolonged drought has reduced reservoir levels significantly



California Reservoir Conditions

- All listed reservoirs feed California onion and garlic growing areas
- California at a new low with its April snowpack measurement.
 - 1.4 inches, or 5% of average
 - Water Year 2015 is the driest winter in California's written record.



Source: California Data Exchange Center



Growers' Drought Options

- Can purchase supplemental water (price has inflated 300% to 400%)
- Drill water wells deeper (cost of \$50k to \$500k, ground water now being regulated, and increased energy cost to pump)
- Let land lie fallow
- Move to a different crop requiring less water per acre
- Lease land outside the traditional growing area



2015 California Onion Outlook

- Acreage planted to remain consistent with prior year
- Approximately 80-90% of the 2015 onion crop is planted
- Yields/solids expected to meet expectations
- Concern around availability of low-micro inventory levels
- Growing costs for the 2015 crop are up due to water availability and competition with other crops, while energy costs are stable to lower
- Expect overall prices to increase due to growing costs, though favorable yields and if energy costs continue to decline, prices will remain stable
- Pressure on political leaders to address water issue
- Access to water will continue to be difficult
- Stable production for the foreseeable future



2015 California Garlic Outlook

- Acreage planted is consistent with prior year
- 2015 garlic crop is planted
- Yields/solids progressing at expectation, anticipating improvement from last year an in line with historical averages
- Growing costs are up due to water availability and competition with other crops, while energy costs are stable to lower
- Expect overall prices to be stable to higher, depending on overall yields
- Access to water will continue to be difficult
- Stable production for the foreseeable future





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Questions?

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