State of the Pistachio Industry

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CALIFORNIA PISTACHIO RESEARCH BOARD

A BRIEF HISTORY

- Pistachios likely brought to California during/after Gold Rush
- USDA: Plant Introduction searched for plants for the arid Southwest
  - Pistacia planted from San Antonio to Yuma to Green River to Oakland
  - Very limited commercial, more like "hobby"; production in CA
- Peters (male) identified in Fresno in 1934
- W. E. Whitehouse (USDA) sent to Russia in 1929 to collect alfalfa
  - Extended collection to pistachio in Iran
  - Collected about 20 lbs of pistachio seed which was planted at Chico
  - Kerman cultivar released in 1957
  - Commercial plantings in late 1950s, first harvest in 1976

California Pistachio Industry

- Statistics for industry available at www.acpistachios.org
- Nearly constant growth from late 1960s through 2020
- Occasional slowing (Verticillium, Bot, drought, pistachio bushy top)
- 4,500 bearing acres in 1976, 335K acres in 2020
- Mostly in the southern San Joaquin
  - Merced, Atwater, Fresno, King, Tulare, Kern
  - All large processors in this area
- Mandatory pistachio organizations
  - Administrative Committee for Pistachios (2004-now)
  - California Pistachio Research Board (2007-now)
Administrative Committee for Pistachios (ACP)

- ACP is a federal marketing order operating on assessments.
- Does no marketing!
- Authorized in 2004.
- Initially regulated aflatoxin in CA pistachios in order to obtain an import regulation.
- Expanded to include AZ and NM in 2010.
- Also authorized export regulations, expanded quality regs, research.
- Collects industry statistics.
- Locally administers Pistachio Export Aflatoxin Reporting Program.
- Manages California Pistachio Research Board.

California Pistachio Research Board (CPRB)

- California state marketing order operates on assessments.
- Initiated in 2007 to fill research needs.
- Production research and grower education.
- 9 members plus 4 alternates and a public member.
- 3 year terms, no term limits.
- Assessments have ranged from 0.25-0.8¢ per dry pound.
- Higher assessment to support sterile insect technology program.
- Current assessment 0.3¢ per dry pound.
- Assessed weight slightly different than paid weight.
- Growers paid for edible kernel weight but assessed as if shells on.

Production Outlook

- Acreage – currently over 400K counting nonbearing.
- Does not appear to be slowing.
- 2020 Crop over 8 billion pounds.
- Currently planted acreage means 1.4 billion pounds by 2024.
- Off year crop in 2023 likely to be a billion.
- WEASEL WORDS:
  - Production could be higher due to Lost and Golden Hills.
  - Production could be lower due to chl effects especially on Kerman.
  - Production could be lower due to water nutrient regulations.
- 70% exported – global supply is important.
- acre production is declining.
INDUSTRY CONCERNS – Production, Regulatory, Infrastructure, Market

- Production Concerns – Diseases, Pests, Climate, Horticulture
  - Pests
    - Navel Orangeworm – single largest consumer complaint, mycotoxins
    - Mealy Bug – still spreading
    - Big Bugs – kernel necrosis
    - Invasive pests – Brown Marmorated Stink Bug
  - Climate
    - Warming? Variability? Drought?
  - Horticultural – Varieties and rootstocks to match climate, pests, diseases

CONCERNS

- REGULATORY
  - SGMA (Sustainable Groundwater Management Act)
    - Ultimately will limit the amount of nutrients that leach to groundwater. Nitrogen is the big concern. A-R
  - Irrigated Lands Program
    - Ultimately will limit the amount of water that can be removed from groundwater. Reduced flexibility when surface supplies are low.
    - CV Suits
      - Leaching issues
    - Phase in will be slow but regs put in place over next few years will affect current activities
  - LOTS OF PAPERWORK!

- Infrastructure
  - Research through UC, ANR, USDA, CSU
    - Less of a commitment by state and feds
    - CPRB has created endowments to ensure some positions continue
      - How many Farm Advisors will we be able to retain?
  - Land/Water, Labor, and Processing
    - Adequate land with reliable water
    - More automation
      - We use a lot of natural gas to dry pistachios...
Concerns

- Market
  - Ever-larger crops necessitate more and larger markets
  - Market access can be expanded or restricted by crop quality
    - Quality is ambiguous term but can include pesticides, mycotoxins
  - Mycotoxins are a significant concern for European exports
    - Includes both aflatoxin and ochratoxin A (OTA)

AFLATOXIN

- Carcinogenic byproduct of Aspergillus flavus and A. parasiticus
- Highly regulated
  - Domestic tolerance: 15 ppb
  - EU tolerance: 8/10 ppb B1 and total aflatoxin
  - Codex tolerance: 10 ppb
- Contamination a function of NOW damage and fungal infection
  - Last three years have low NOW, low aflatoxin
  - Prior to that, 2-3 years of high NOW, high aflatoxin
  - EU restrictions, PEAR Program had to put in place

OCHRATOXIN A (OTA)

- Byproduct of several Aspergillus species
- Only recently showed up on EU pistachio “radar”
- Uncertain toxicity
- EU is proposing 5 ppb tolerance
- Very little known about OTA contamination in pistachios
  - Assuming it is similar to aflatoxin
  - Netherlands has seen testing with similar results to aflatoxin
  - Aflatoxin + OTA could be major problem and significantly limit trade