

State of the Pistachio Industry

BOB KLEIN, MANAGER
ADMINISTRATIVE COMMITTEE FOR PISTACHIOS
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 1960s, first harvest in 1976

California Pistachio Industry

- ▶ Statistics for industry available at www.acppistachios.org
- ▶ Nearly constant growth from late 1960s through 2020
 - ▶ Occasional slowing (Verticillium, Bot, drought, pistachio bushy top)
 - ▶ 4500 bearing acres in 1976, 335K acres in 2020
- ▶ Mostly in the southern San Joaquin
 - ▶ Merced, Madera, Fresno, Kings, Tulare, Kern
 - ▶ All large processors in this area
- ▶ Mandatory pistachio organizations
 - ▶ California Pistachio Commission (1980-2007)
 - ▶ 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!
- ▶ ACP 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

- ▶ OUTLOOK
 - ▶ Acreage – currently over 400K counting nonbearing
 - ▶ Does not appear to be slowing
 - ▶ 2020 Crop over a billion pounds
 - ▶ Currently planted acreage means 1.6 billion pounds by 2026
 - ▶ 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 chill effects especially on Kerman
 - ▶ Production could be lower due to water/nutrient regulations
- ▶ 70% exported – global supply is important
 - ▶ Iranian production is declining

INDUSTRY CONCERNS – Production, Regulatory, Infrastructure, Market

- ▶ Production Concerns – Diseases, Pests, Climate, Horticultural
 - ▶ 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 Salts
 - ▶ Leaching issues
- ▶ Phase in will be slow but regs put in place over next few years will affect current activities
- ▶ LOTS OF PAPERWORK!

CONCERNS

- ▶ 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 of 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 been testing with similar results to aflatoxin
- ▶ Aflatoxin + OTA could be major problem and significantly limit trade
