2022 Almond Objective Measurement Survey Results

Brenda Hill, Deputy Director
USDA NASS Pacific Regional Office

July 8, 2022

Survey Methodology

- Random selection of orchards based on location, variety and age

- Randomly select two trees in each selected orchard

- Third year for two count units per tree

- Random Path Method used to locate count units

- Sample of nuts taken and sent to sizing station

- Measured kernel weight, length, width, thickness and grade

Data Collection

- Field Work: May 26 – June 27

- Use 50+ Enumerators

- Increased sample size to 1,058 orchards
  - Collected data from 880 orchards

Thank you to the growers for allowing us access to your orchards.

Thank you to those that encouraged growers to participate.

United States Department of Agriculture
**National Agricultural Statistics Service**

Forecast Models

- Models are designed to produce a forecast of all almond production at the state level from the sample data.

- Models do not forecast production by variety. Separate models are run for Nonpareil since there are a significant number of samples.

Forecast Models

- Models use:
  - official estimates of bearing acres and trees per acre
  - OM measurements of:
    - nuts per tree
    - percent sound
    - weight
    - width
    - thickness
    - length

- Model output is regressed against final production using previous 15 years.

2022 Almond OM Forecast

Distribution of Samples
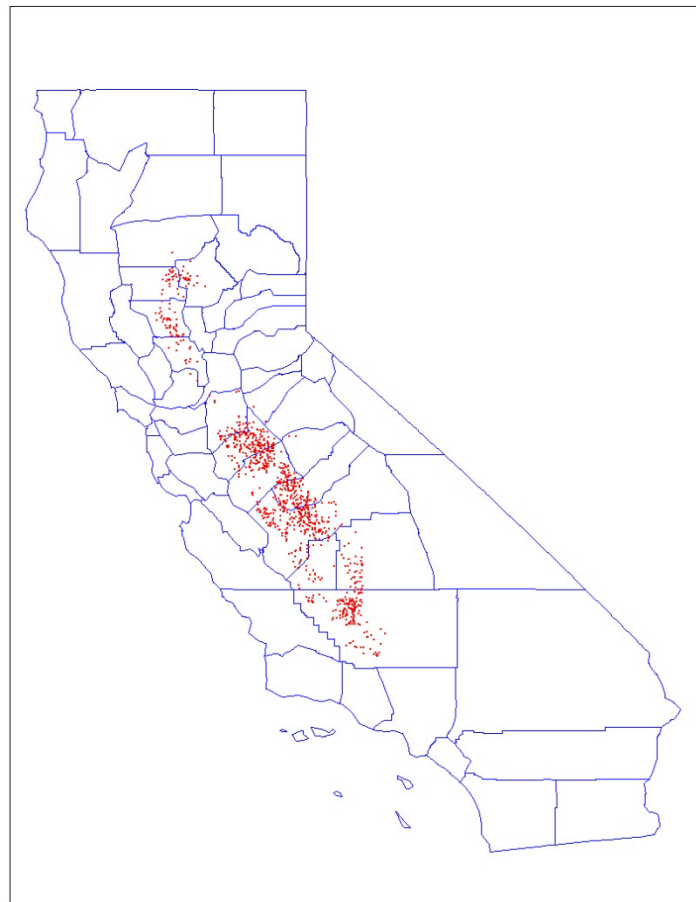
Crop Conditions

- Bloom in Early February.
  - Favorable weather conditions for pollination
  - Warmer temperatures seemed to encourage a shorter bloom period
- Freeze in late February
  - Some areas experienced frost damage
  - Some counties reporting Colusa, Butte and Tehema

Crop Conditions

- Water availability still top concern

- Variable weather conditions

- Drought Conditions

- Pulled orchards
  - More pulled samples compared to previous years
  - But not substantial to suggest a change in bearing acreage for this forecast.

- Harvest is expected to begin in a few weeks

Top Soil Moisture Map
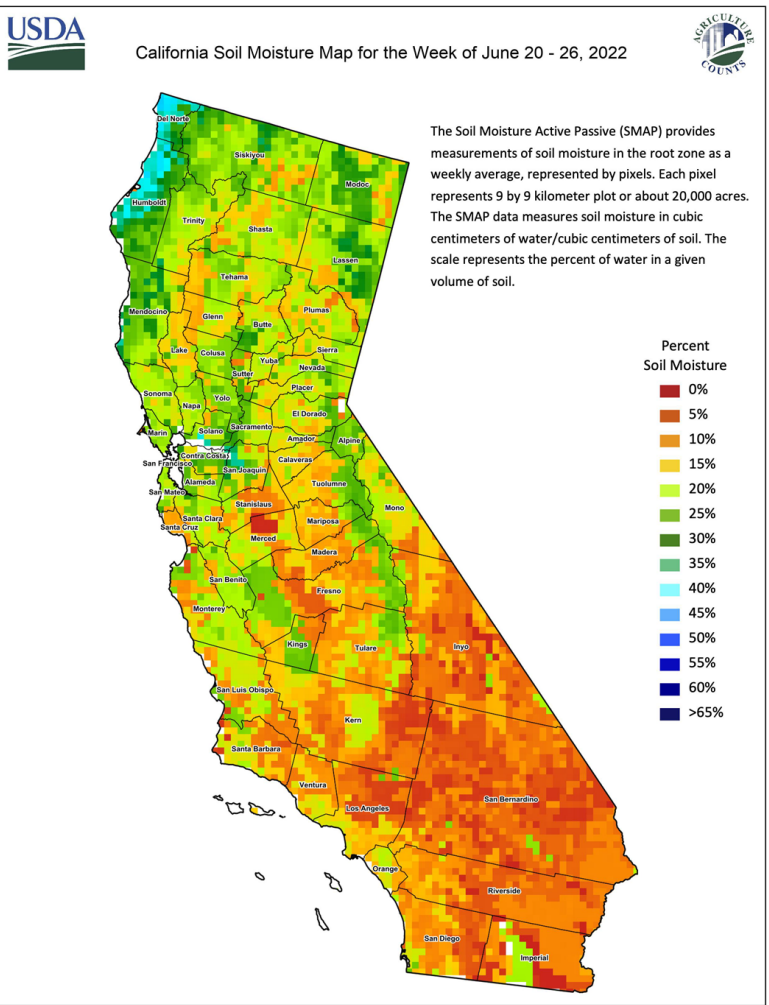
And the 2022 Production forecast is……

- **Highlights**
  - **Production forecasted at 2.6 billion meat pounds**
  - **Down 11% from the 2021 production**
  - **1.37 million bearing acres, increase of 50,000 acres**
  - **Yield calculates to 1,900 pounds/acre, down 14% from last year**

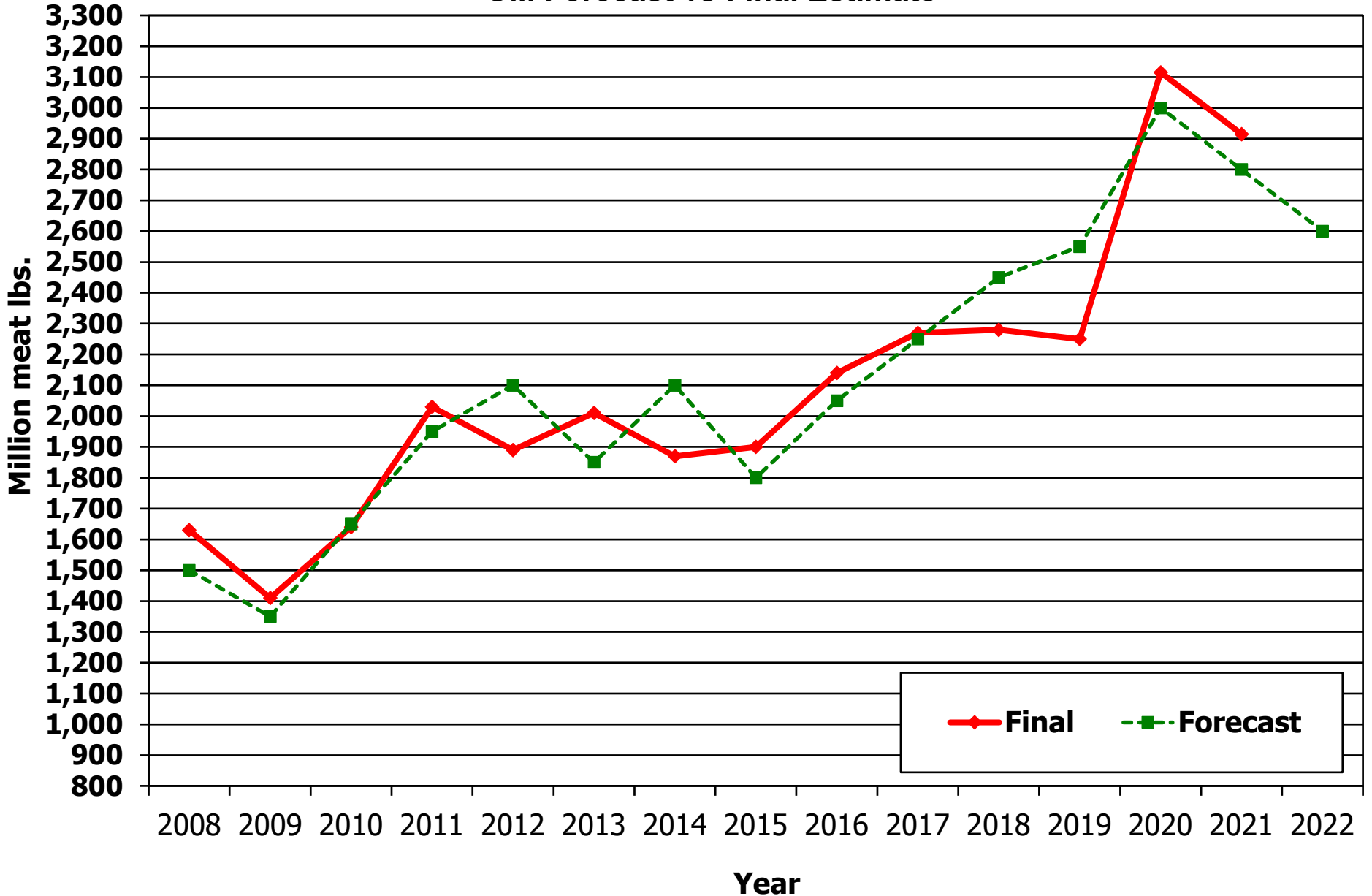- **Highlights – Nonpareil Variety**
  - **Production from Nonpareil variety is forecasted at 1.0 billion meat pounds**
  - **Down 12% from the 2021 production**
  - **38% of total production**

ALMOND PRODUCTION - CALIFORNIA
OM Forecast vs Final Estimate

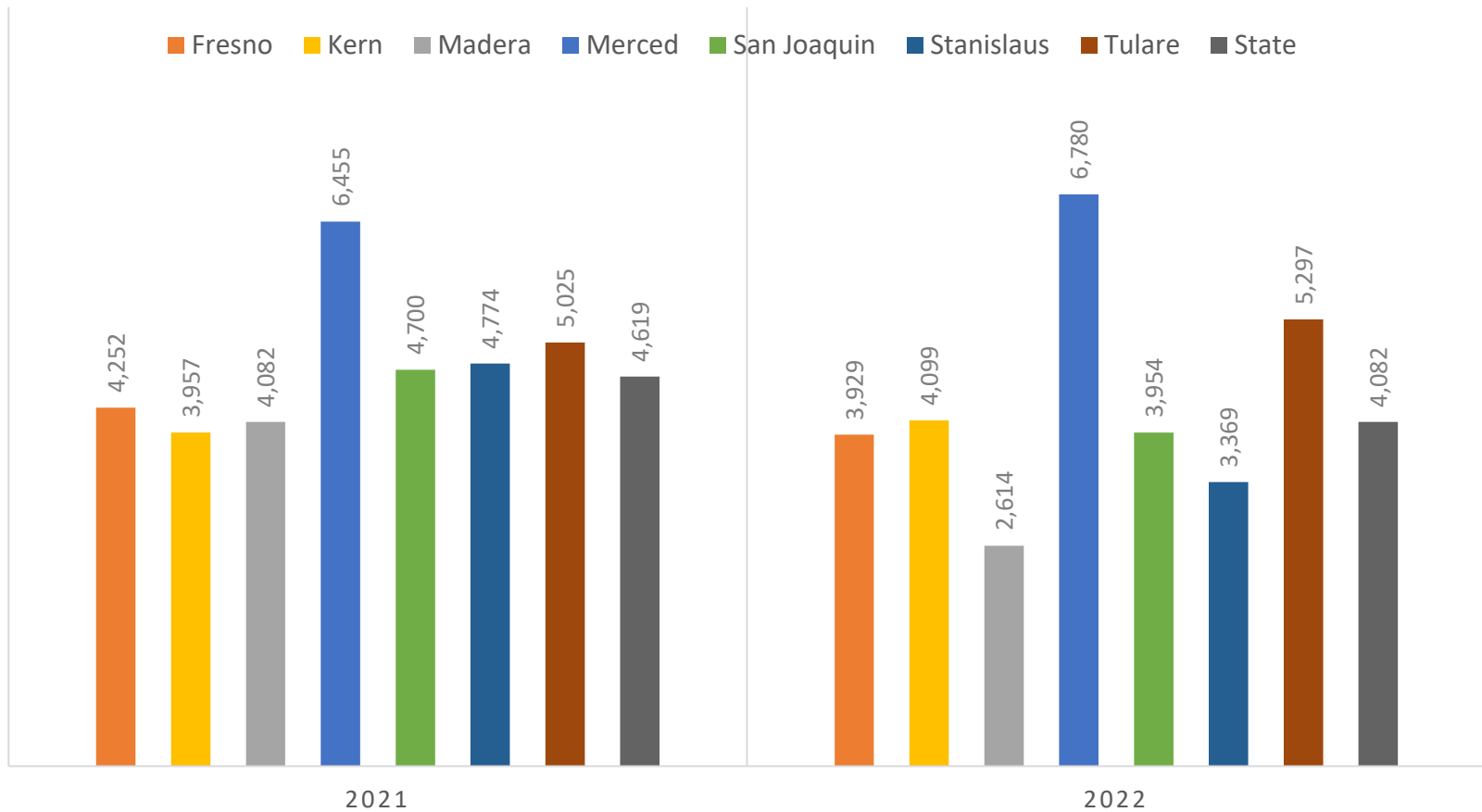# 2022 Almond Objective Measurement Survey Results

Almond Set 2020 – 2022
Average nuts per tree

	2020	2021	2022	% Change
California	5,645	4,619	4,082	-11.6

2022 Almond Objective Measurement Survey Results

ALMONDS
NUTS PER TREE, BY COUNTY & STATE

■ Fresno ■ Kern ■ Madera ■ Merced ■ San Joaquin ■ Stanislaus ■ Tulare ■ State

2021: Fresno 4,252; Kern 3,957; Madera 4,082; Merced 6,455; San Joaquin 4,700; Stanislaus 4,774; Tulare 5,025; State 4,619

2022: Fresno 3,929; Kern 4,099; Madera 2,614; Merced 6,780; San Joaquin 3,954; Stanislaus 3,369; Tulare 5,297; State 4,082

United States Department of Agriculture
National Agricultural Statistics Service

2022 Almond Objective Measurement Survey Results

Almond Set per Tree by Variety, 2020 - 2022

	2020	2021	2022	% Change
Butte	5,923	4,793	4,173	-12.9
Carmel	5,797	5,469	4,417	-19.2
Independence	3,948	4,389	4,624	5.4
Monterey	4,719	4,324	3,908	-9.6
Nonpareil	5,621	4,512	3,966	-12.1
Padre	8,137	5,214	4,928	-5.5

United States Department of Agriculture
National Agricultural Statistics Service

ALMONDS
Kernel Width, mm

Data points by year:
- 2008: 12.30
- 2009: 13.10
- 2010: 13.20
- 2011: 12.52
- 2012: 12.51
- 2013: 12.11
- 2014: 12.69
- 2014: 12.58
- 2015:
- 2016: 12.44
- 2017: 12.83
- 2018: 12.79
- 2019: 12.86
- 2020: 12.60
- 2021: 12.73
- 2022: 12.69
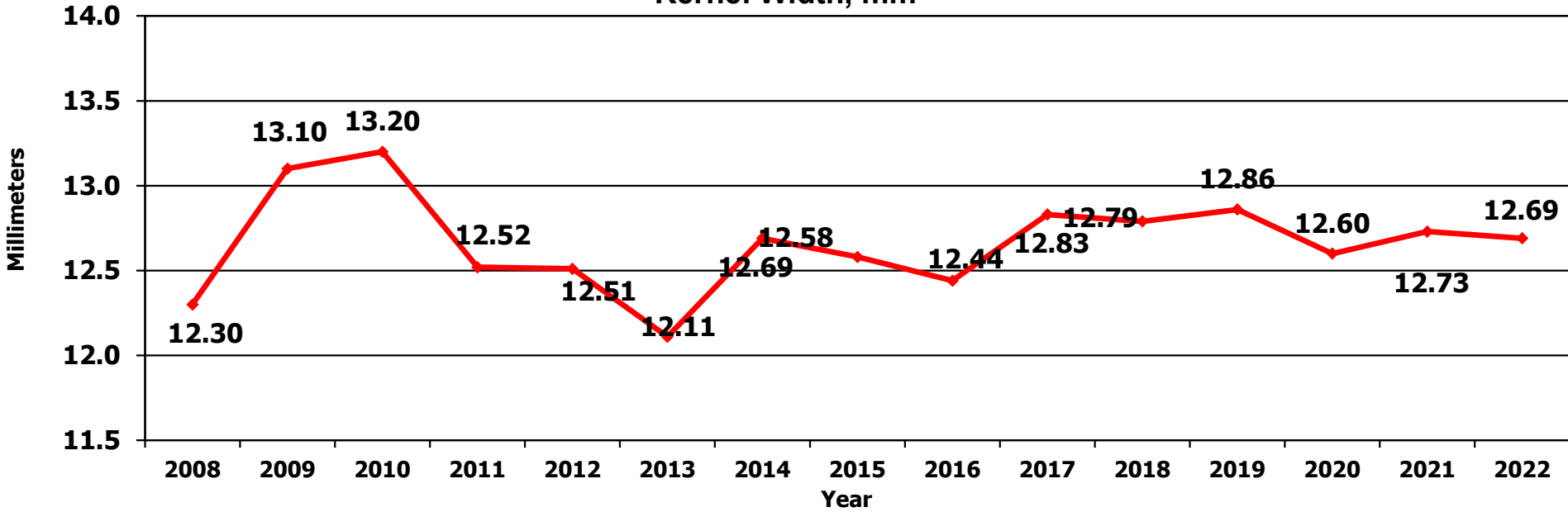
ALMONDS
Kernel Thickness, mm

Data points by year:
- 2008: 9.66
- 2009: 9.93
- 2010: 10.30
- 2011: 9.92
- 2012: 9.94
- 2013: 9.76
- 2014: 10.06
- 2015: 9.89
- 2016: 9.93
- 2017: 10.40
- 2018: 10.37
- 2019: 9.93
- 2020: 10.12
- 2021: 9.68
- 2022: 10.03
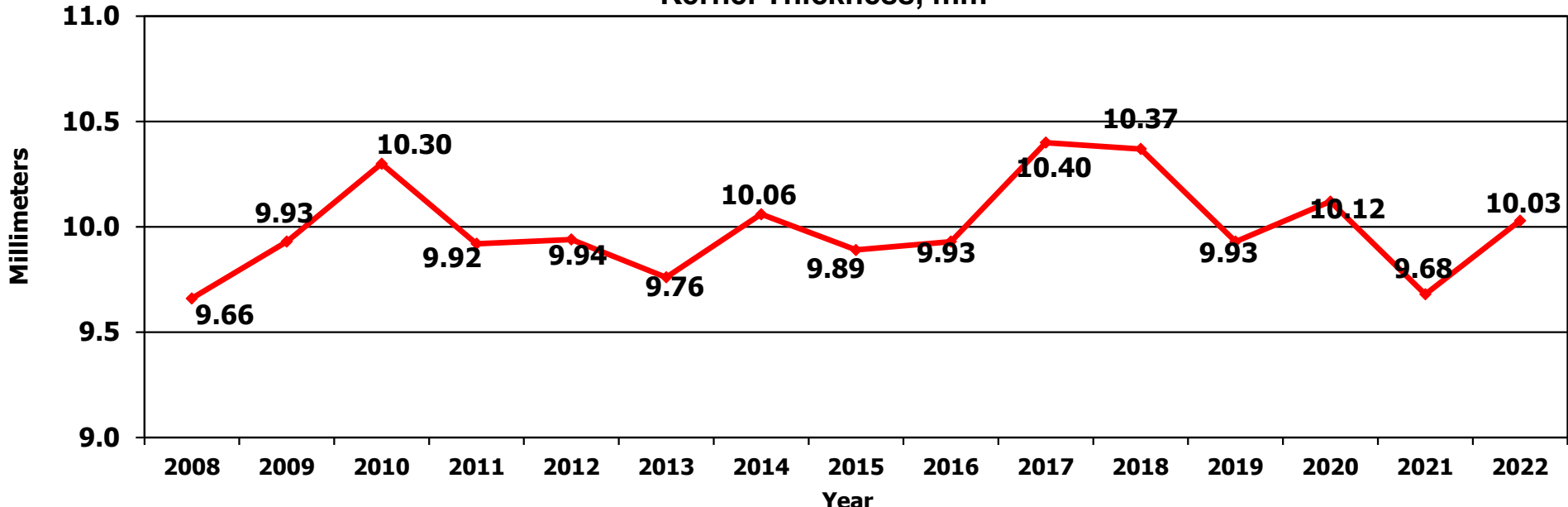
ALMONDS
Kernel Length, mm
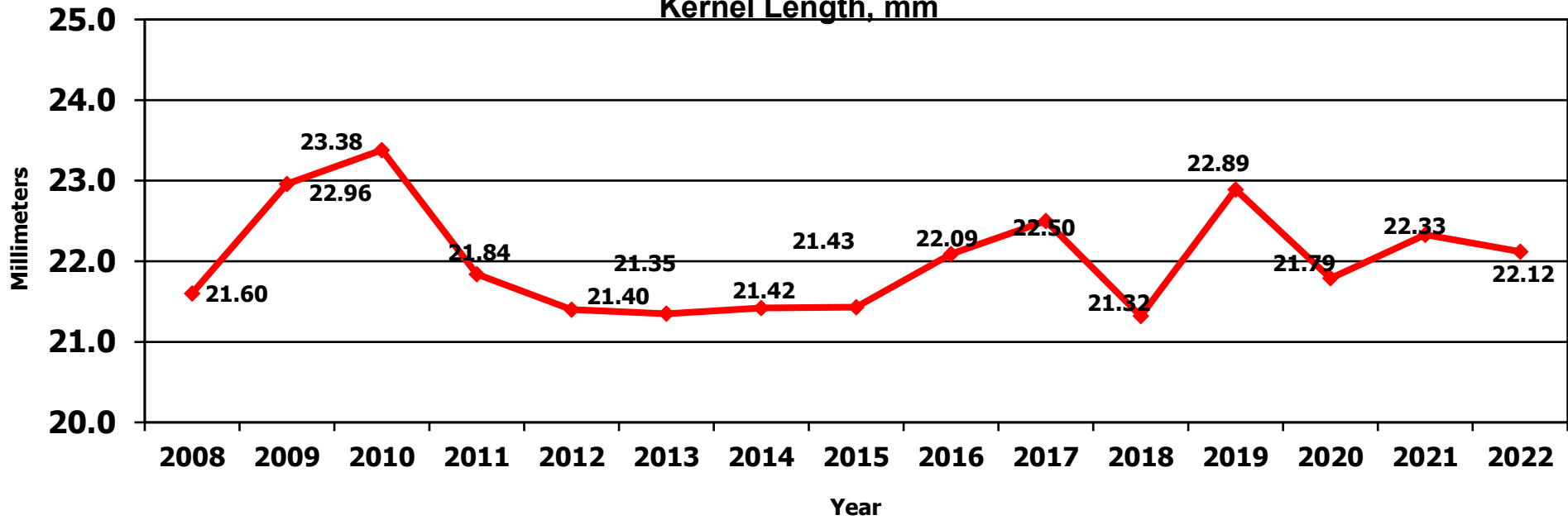
ALMONDS
Percent Sound Nuts
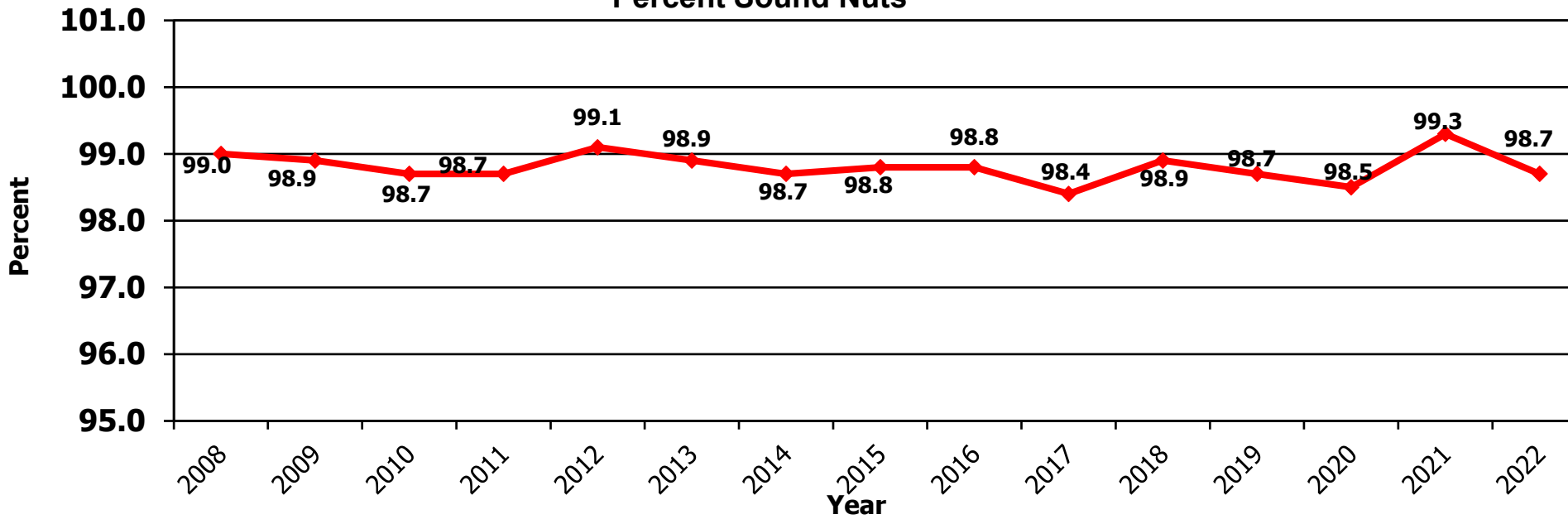
Forecast and all Statistics Available On-line

- PRO Web: www.nass.usda.gov/ca

- NASS Web: www.nass.usda.gov

- PRO Contact: (916) 738-6600

United States Department of Agriculture
National Agricultural Statistics Service

2022 Almond Objective Measurement Survey Results

Thank you to the producers who allowed us to conduct this survey in their orchards.

United States Department of Agriculture
National Agricultural Statistics Service

2022 Almond Objective Measurement Survey Results

USDA NASS Pacific Regional Office
(916) 738-6600
nassrfopcr@nass.usda.gov

July 2022