County Agricultural Commissioner

Crop Report Training

Purpose of This Training

- Provide information about NASS's process for creating the state level crop report
- Provide information about the Crop Report Data Entry Workbook (CR-DEW)
- Introduce principles of agricultural statistics
- Answer questions from the County Agricultural Commissioner's offices

Why Publish a County Crop Report?

- Counties are required to release an annual crop report by California
- USDA NASS publishes the statewide County Ag Commissioner's Reports for the CA Department of Food & Agriculture

Impact of the County Crop Reports

- County level information is not available for most crops
- NASS only publishes county level information for most crops for the Census of Agriculture every 5 years
- The County Ag Commissioner's Reports are used many, including:
  - Universities and other ag research institutions
  - Other government agencies
  - Insurance companies
  - Industry members
  - Farmers and ranchers

Impact of the County Crop Reports

This year, USDA NASS has gotten requests for county crop report data from:

- USDA Economic Research Service
- UC Davis, Department of Agricultural & Resource Economics
- AgriLogic Consulting, who provides risk analysis information and insurance
- CDM Smith, an engineering and construction firm
- ABC news, for a report on Tulare Lake

USDA NASS's Process for Creating the State Crop Report

Timeline for USDA NASS to Publish the County Ag Commissioners' Crop Report

- June – NASS emails each county NASS data and instructions
- July – NASS emails counties with milk data, if available
  - If you are not getting emails from NASS, then please tell us!
- July through October – Counties send their data to NASS. NASS begins checking and importing the data
- October 15th – Last day to send county data to NASS
- October and November – NASS finishes checking the data. Unusual data is confirmed with the county
- December – NASS compiles and releases the statewide Crop Report

Collect data from the Counties

- County data must be sent to NASS by October 15th
  - Please reach out to us if the county report will not be ready by October 15th
- Counties can provide data to us in a pdf publication, excel workbook with their formatting, and/or the Crop Report Data Entry Workbook (CR-DEW)
  - CR-DEW is the preferred format
  - If possible, submit both the CR-DEW and pdf publication
- Data should be emailed to nassrfopcr@usda.gov

What is the Crop Report Data Entry Workbook (CR-DEW)?

Reason for implementing the CR-DEW

Background:

NASS has always keyed the county data into a workbook before processing the data

Problem:

The old workbook no longer mirrored the way counties publish their data

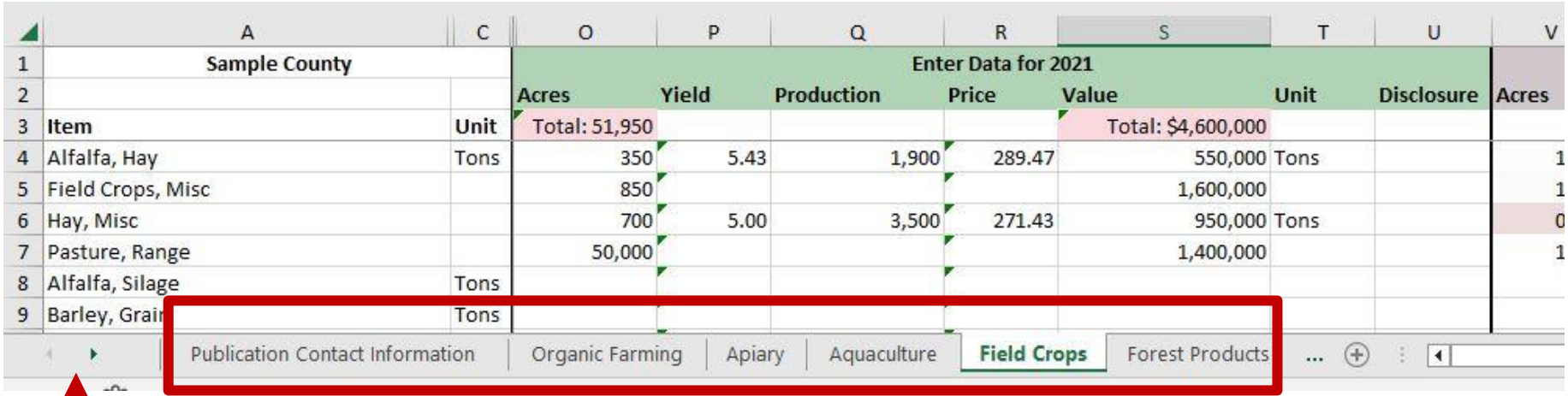
Solution:

NASS created a new workbook that is more user friendly

NASS updated the list of potential commodities that is published in the statewide crop report

Demonstration of the CR-DEW

The CR-DEW has tabs for each commodity category



	A	C	O	P	Q	R	S	T	U	V
1	Sample County		Enter Data for 2021							
2			Acres	Yield	Production	Price	Value	Unit	Disclosure	Acres
3	Item	Unit	Total: 51,950				Total: $4,600,000			
4	Alfalfa, Hay	Tons	350	5.43	1,900	289.47	550,000	Tons		1
5	Field Crops, Misc		850				1,600,000			1
6	Hay, Misc		700	5.00	3,500	271.43	950,000	Tons		0
7	Pasture, Range		50,000				1,400,000			1
8	Alfalfa, Silage	Tons								
9	Barley, Grai	Tons								

Publication Contact Information | Organic Farming | Apiary | Aquaculture | **Field Crops** | Forest Products | ...

Use the arrows to scroll between the tabs

Click on the tabs to view that commodity category

NASS data and previous year data is available in the left most columns in the CR-DEW

	A	C	D	E	F	G	H	I	J	K	L
1	Sample County		Fruit Acreage Database 2021		Published Data 2020						
2			Total	Bearing	Acres	Yield	Production	Price	Value	Unit	Disclosure
3	Item	Unit			Total: 2,150				Total: $3,000,000		
4	Fruits & Nuts, Misc				150				500,000		
5	Grapes, Wine, Misc		2,100	2,000	2,000	1.53	3,050	819.67	2,500,000		
6	Cherries	Tons									
7	Grapes, Wine, Red	Tons									
8	Grapes, Wine, White	Tons									
9	Lemons	Tons									
10	Limes	Tons									

Commodities submitted last year are at the top, by alphabetical order

Those not submitted last year are below, also in alphabetical order

NASS data

(Orange header)

Recorded county data from previous year

(Blue header)

Current year data goes under the green heading

	A	C	M	N	O	P	Q	R	S
1	Sample County		Enter Data for 2021						
2			Acres	Yield	Production	Price	Value	Unit	Disclosure
3	Item	Unit	Total: 2,250				Total: $2,750,000		
4	Fruits & Nuts, Misc		150				450,000		
5	Grapes, Wine, Misc		2,100	14.52	30,500	75.41	2,300,000		
6	Cherries	Tons							
7	Grapes, Wine, Red	Tons							
8	Grapes, Wine, White	Tons							
9	Lemons	Tons							

Sums of the acres and value are at the top.

These are intended to help catch typos and omitted commodities.

Data entry for most recent year

(Green heading)

Current to previous year ratios & comments

	A	C	T	U	V	W	X	Y
1	Sample County		Current to Previous Year Comparison Ratios					
2			Acres	Yield	Prod	Price	Value	Comment
3	Item	Unit						
4	Fruits & Nuts, Misc		1.000				0.900	
5	Grapes, Wine, Misc		1.050	9.490	10.000	0.090	0.920	Potential miskey?
6	Cherries	Tons						
7	Grapes, Wine, Red	Tons						
8	Grapes, Wine, White	Tons						

Current to previous year ratios are calculated using Excel formulas.

Ratios much greater or much less than 1 are shaded green and red, respectively

Space for county comments and NASS comments

Advantages and Disadvantages of the CR-DEW for NASS

Advantages

- NASS spends less time keying data
- NASS can spend more time reviewing the data
- NASS spends less time asking counties about their data
- Improves standardization in statewide crop report

Disadvantages

- NASS may not realize that data was omitted from the CR-DEW
- NASS may not realize that confidential data was not flagged as confidential

Advantages and Disadvantages of the CR-DEW for the Counties

Advantages

- County has more control over how their data is published
- County can provide confidential data so state totals for minor commodities are more accurate
- County can view NASS and previous year data all in one place

Disadvantages

- County spends more time keying the data into the CR-DEW
- County may introduce typos in the process of keying the data into the CR-DEW

Compiling the Statewide Crop Report

Enter All Data Into a CR-DEW

- All data must eventually get keyed into a CR-DEW file
- If the county does not provide a CR-DEW, NASS staff will enter the data into a CR-DEW
- Data from the CR-DEW is imported into our database

	A	C	O	P	Q	R	S	T	U
1	**Sample County**		**Enter Data for 2021**						
2			**Acres**	**Yield**	**Production**	**Price**	**Value**	**Unit**	**Disclosure**
3	**Item**	**Unit**	Total: 51,950				Total: $4,600,000		
5	Field Crops, Misc		850				1,600,000		
6	Hay, Misc		700	5.00	3,500	271.43	950,000	Tons	
7	Pasture, Range		50,000				1,400,000		
8	Alfalfa, Silage	Tons							
9	Barley, Grain	Tons							
10	Barley, Hay	Tons							

Look for Potential Data Problems

- NASS staff reviews the submitted data for potential problems
- If the county provides a CR-DEW, the most common problem is different or ambiguous units
  - Example: Cotton lint production is provided in bales and no bale weight is specified
  - Referencing the County pdf publication will often resolve this
- If the county provides a pdf or other spreadsheet, the most common problem is ambiguous crop names
  - Example: "Forage" could be cropland stubble used as pasture, small grain hay, or greenchop

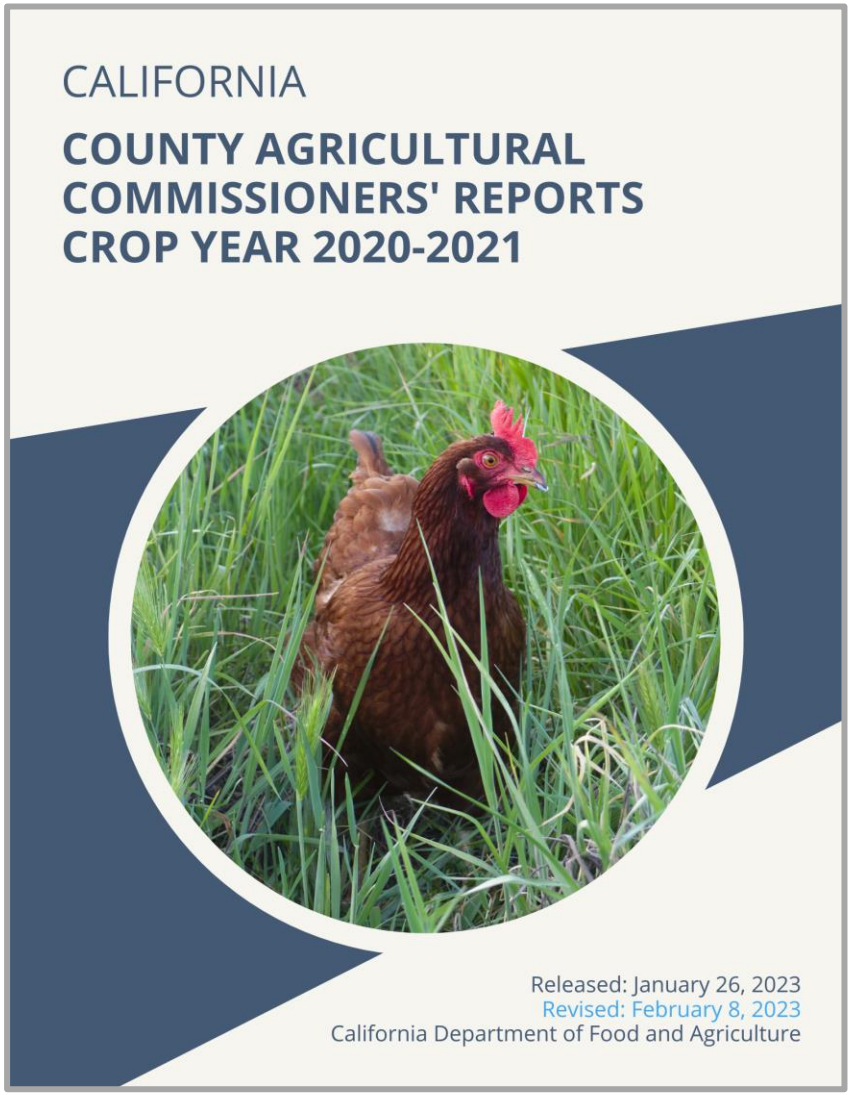
Contact the County to Clarify Data Problems

- NASS staff emails or calls the county to ask for clarification
- NASS staff updates the data in our copy of the CR-DEW
- NASS re-imports the data into our database

	A	C	T	U	V	W	X	Y
1	**Sample County**		**Current to Previous Year Comparison Ratios**					
2			**Acres**	**Yield**	**Prod**	**Price**	**Value**	**Comment**
3	**Item**	**Unit**						
4	Fruits & Nuts, Misc		1.000				0.900	
5	Grapes, Wine, Misc		1.050	9.490	10.000	0.090	0.920	Potential miskey?
6	Cherries	Tons						
7	Grapes, Wine, Red	Tons						
8	Grapes, Wine, White	Tons						

Summarize Data & Publish Report

- Summarize the data and generate csv files
- Format for final publication
- PDF and xlsx files released on the NASS website



Questions?

Introduction to Agricultural Statistics

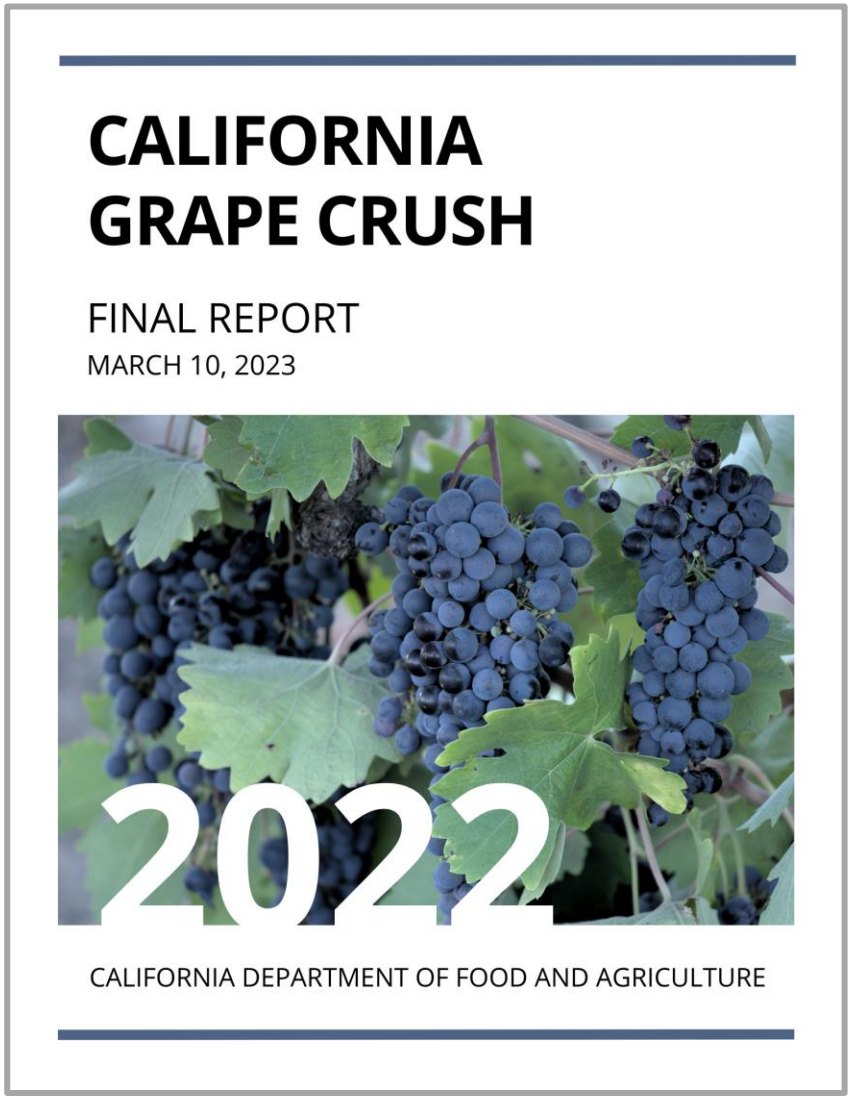
In this Section, We Will Cover:

- Data collection
- Selecting a sample
  - Stratification
- Accounting for missing producers
  - Expansion
  - Estimate for missing responses
- Confidentiality

Data Collection

Data Sources

- Farmers and Ranchers
- Industry commissions
  - Example: California Avocado Commission
- Packing and processing businesses
- County Administrative Data
  - Example: Organic certifications
- Other Administrative Data
  - Example: CDFA Grape Crush Report



Data Collection Methods

- Web survey
- Mailed survey
- Phone call
- Personal interview

Increased Cost

Improved Response Rates

Selecting a Sample

Purpose of a Sample

- Ideally, we would get information from everyone in the population
- In reality, this is too expensive and often simply impossible

- Instead, we get information from a sample of the total population
- In general, larger sample sizes lead to more accurate information
- In general, larger sample sizes are more expensive

Choosing a Sample

- Census
  - Contact every operation you know about
- Random sampling
  - Randomly select operations to contact
  - Larger samples sizes generally produce more accurate survey results
- Stratified sampling
  - Divide all operations into groups by size or other characteristic
  - Within each group, operations are selected randomly

Stratification

Stratification is a way of splitting the population into groups by a shared characteristic.

NASS often stratifies the population by number of acres or value of sales.

Stratum description	Stratum name	Approx total acres	Number of operations in county	Number of operations sampled
Small (less than 500 ac)	1	2,200	10	3
Large (500 ac or more)	2	2,200	3	3

Accounting for Missing Producers

Who is Missing?

- Operations who are in the population but were not in the sample
- Operations who were in the sample but you couldn't contact them
- Operations who were in the sample but refused to respond

Example Survey Responses

Stratum	Operations	Wheat acres reported in 2020	Wheat acres reported in 2021
1	Farm 1	50	80
1	Farm 2	No response	350
1	Farm 3	200	No response
2	Farm 4	800	850
2	Farm 5	600	No response
2	Farm 6	900	900

Expansion of Reported Data

Stratum	Operation	Wheat acres reported in 2021
1	Farm 1	80
1	Farm 2	350
1	Farm 3	No response

Stratum	Number of operations in county	Number of survey responses	Acres from survey data	Estimated total acres for stratum
1	10	2	430	2,150

Find ratio: 10/2 = 5

Apply ratio to reported data: 430 * 5 = 2,150

Estimate for Individual Operations

Stratum	Operations	Wheat acres reported in 2020	Wheat acres reported in 2021
2	Farm 4	800	850
2	Farm 5	600	No response **Estimated: 617**
2	Farm 6	900	900

Find ratio: (850 + 900) / (800 + 900) = 1750 / 1700 = 1.029

Apply ratio to previous year data: 600 * 1.029 = 617

Overall Survey Indication

Stratum	Number of operations in county	Number of responses	Acres from survey data	Estimated acres
1	10	2	430	2,150
2	3	2	1,750	2,367
All	13	4	2,180	4,517

The survey indication is 4,517 acres

When Do I Use a Weighted Average?

Example:

You have 3 operations in your county that have wheat. You collected data from all 3 operations:

Operation	Acres	Yield
Farm A	200	3.5 tons/acre
Farm B	300	1.5 tons/acre
Farm C	900	2.0 tons/acre

This is a situation where you would use a weighted average!

Calculating a Weighted Average

Operation	Acres	Yield
Farm A	200	3.5 tons/acre
Farm B	300	1.5 tons/acre
Farm C	900	2.0 tons/acre

(acres * yield + acres * yield + acres * yield) / total acres

(200 * 3.5 + 300 * 1.5 + 900 * 2.0) / 1,400

Answer: 2.11 tons/acre

Why Does It Matter to Use a Weighted Average?

Operation	Acres	Yield
Farm A	200	3.5 tons/acre
Farm B	300	1.5 tons/acre
Farm C	900	2.0 tons/acre

Weighted average = 2.11 tons/acre
Simple average = 2.33 tons/acre

Confidentiality

Confidential Data

Proper handling of confidential data helps build trust with farmers and ranchers

Potential Methods:

- Number of operations
  - Example: Need more than 4 operations to publish
- Size of operations
  - Example: 1 operation cannot be more than 50% of the total

Submitting Confidential Data to NASS

	A	C	M	N	O	P	Q	R	S
1	Sample County		Enter Data for 2021						
2			Acres	Yield	Production	Price	Value	Unit	Disclosure
3	Item	Unit	Total: 2,250				Total: $2,750,000		
4	Fruits & Nuts, Misc		150				450,000		
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6	Cherries	Tons							
7	Grapes, Wine, Red	Tons							
8	Grapes, Wine, White	Tons							
9	Lemons	Tons							

If the data is confidential, put a “1” in the disclosure column.

Otherwise, leave it blank!

Confidential Data in the Statewide Crop Report

If the county data is confidential, then NASS will group this data into the "sum of others" under the specific commodity.

Commodity Data, 2021					
County	Harvested Acreage	Yield Per Acre	Production	Price Per	Total Value
				Dollars	
Kale		***Tons/Acre***	***Tons***		
Monterey	1,340	7.54	10,100	1,190.00	12,019,000
Riverside	332	5.51	1,830	1,402.19	2,566,000
San Benito	656	9.30	6,100	1,190.16	7,260,000
Ventura	1,010	3.04	3,070	6,000.98	18,423,000
Sum of Others	3,430				22,956,000
State Total	6,768	6.32	21,100	1,908.44	63,224,000

Questions?