



ASIA AND PACIFIC COMMISSION ON AGRICULTURAL STATISTICS

TWENTY-SIXTH SESSION
Thimphu, Bhutan, 15-19 February 2016
Agenda Item: Any Other Business
Methods for Crop Statistics in the United States of America

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Methods for Crop Statistics in the United States of America

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19 February, 2016
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Thimphu, Bhutan

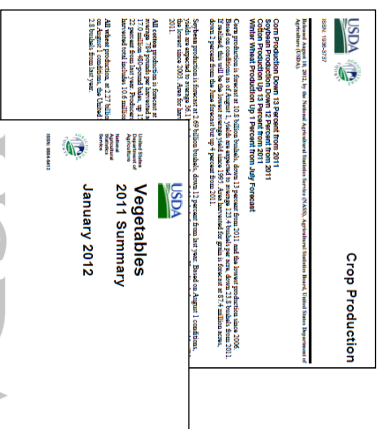




NASS CROP ESTIMATES

Annual Number of Reports for Crops

173



NASS CROP ESTIMATES

Annual Estimating Program

- States included vary by crop
- Typically account for ~95% of production
- Reviewed following each Census of Agriculture





NASS CROP ESTIMATES – Field Crops

Agricultural
Production Cycle



NASS Survey &
Estimation Cycle




NASS
Prospective
Plantings

When farmers are planning...
estimate planting intentions.



NASS
Acreage

After farmers have planted...
estimate acreage.



NASS
Crop
Production

Throughout growing season...
forecast yield & production.



**Crop Production
2013 Summary
January 2014**

At end of season...
estimate final acreage, yield,
production.



NASS CROP ESTIMATES – Crop Progress & Condition

Agricultural
Production Cycle



NASS Survey &
Estimation Cycle




NASS
Crop
Progress

Throughout growing season...
Report crop progress &
condition ratings every week.



**WEEKLY WEATHER
AND CROP BULLETIN**





NASS CROP ESTIMATES

Where NASS Crop Data Come From

- Sample Surveys (Voluntary Reporting)
- Ag Census (Mandatory Reporting)
- Administrative Data
- Remote Sensing (Satellite Based)



NASS CROP ESTIMATES

Major NASS Surveys

- Agricultural Surveys (Quarterly)
- Area Survey (Annual)
- Agricultural Yield Survey (Monthly)
- Objective Yield Survey (Monthly)

All Voluntary
Farmer
Surveys!





NASS CROP ESTIMATES

Agricultural Surveys

- March (~86,000 Farmers)
 - Planting Intentions
- June (~73,000 Farmers & ~11,000 Segments)
 - Acres Planted & Intended for Harvest
- September (~66,500 Farmers)
 - Final Acres, Yield, & Production for Small Grains
- December (~85,000 Farmers)
 - Final Acres, Yield, & Production for Row Crops

**** All Quarters Collect Grains Stored on the Farm ****



NASS CROP ESTIMATES

Agricultural Yield Surveys

- Conducted May – November
 - Crops included varies by month.
 - Samples sizes range from 6,000 to 28,000
 - Samples selected from March and/or June Ag Survey
- Farmers report expected yields for their crops.
 - Always based on conditions as of the 1st of the month.

Selected Farmers Surveyed in Consecutive Months





NASS CROP ESTIMATES

Objective Yield Surveys

- Conducted May – December
- Only for Corn, Soybeans, Winter Wheat, Cotton
- Samples sizes range from 1,217 to 1,835
- Samples selected from March and/or June Area Survey
- Trained Enumerators Visit Fields
- Take counts & measurements
- Collect samples and send to lab for analysis

Only conducted in largest producing states, accounting for >75% of U.S. acreage.



NASS CROP ESTIMATES

Indications from surveys:

- direct expansions
- ratios

Historically, how well have these indications performed?

Is there a consistent bias in the indications?

Difference Tables

Time Series Charts

Regression Charts

Balance Sheet

Not covered in this session due to time limitations.





NASS CROP ESTIMATES

Example – Difference Table

Crop & Characteristic

Surveys

STATE XXX
 (CORN YIELD INDICATIONS
 (Data is not real, was created for presentation purposes))

YR	PL	%PY	MARCH AG SURVEY			JUNE AG SURVEY			DEC AG SURVEY										
			MAS DE	MAS PP	MAS DE	BD/ AREA DE	BD/ AREA PP	ERR / AREA	JAS DE	JAS PP	JAS DE	ERR / DAS DE							
90	9540	ERR	10008	-488	ERR	96.3	9781	-221	97.7	ERR	95.7	9745	-205	ERR	9326	314			
91	10080	1057	9445	635	102.4	3.3	10255	-175	99.3	105.1	8.4	10220	80	102.8	9305	175			
92	10080	1000	9947	133	100.4	-0.4	10101	-21	99.8	98.5	89.3	10280	-180	102.4	10413	-333			
93	9450	938	9492	-42	86.9	6.9	99.6	9523	-73	99.2	94.3	84.0	9.8	9.353	9489	-39			
94	10440	110.5	10208	232	97.7	12.8	107.6	2.9	102.3	110.6	101.5	9.0	10.938	-488	116.9	10441	-1		
95	9180	87.9	9926	-746	85.0	3.0	95.1	-7.1	92.5	917.9	1	100.0	87.2	79.6	8.4	9.866	-868	-806	
96	9900	107.8	10288	-388	95.9	12.0	103.0	4.8	96.2	994.1	-4.1	99.6	108.3	97.2	10.6	11.181	-1281	113.3	
97	10080	101.8	10415	-335	89.3	12.5	96.6	5.3	96.8	999.5	86	100.9	100.5	91.9	9.9	10.612	-532	94.9	
98	9540	94.6	10361	-821	86.7	8.0	97.5	-2.9	92.1	952.6	14	100.2	95.3	86.0	8.6	10.624	-884	89.2	
99	9720	101.9	10423	-703	93.6	8.3	98.8	2.1	93.3	984.0	-12.0	98.8	103.3	90.2	11.7	10.821	-101	102.8	
00	10080	103.7	10619	-539	90.1	13.8	102.3	1.4	94.9	1014.0	-6.0	99.4	103.1	92.6	11.1	10.932	-212	95.1	
01	9900	98.2	9961	-61	88.7	9.6	97.4	0.8	99.4	982.1	7.9	100.8	96.8	86.7	11.5	10.302	-402	100.1	
02	9990	100.9	10275	-285	92.1	8.8	105.2	-4.3	97.2	1045.2	-537	94.9	107.2	95.4	5.5	10.614	-624	103.0	
03	10080	100.9	10251	-171	88.3	12.6	98.0	2.9	98.3	1044.2	-382	96.5	99.2	87.7	13.2	9.824	256	92.6	
04	10575	104.9	9822	753	89.8	15.1	100.8	4.1	107.7	1090.3	-328	97.0	104.4	94.3	10.6	10.174	401	103.6	
AVG DIFF 10Yr			-382		10.1		0.6	96.3		-103	98.0	101.1		10.0		-806		-385	
ANG DIFF 5Yr			-352		10.074		10.6	10223		0.6	96.6		10880		-200	98.1	101.9		-417
COMPUTED 10Yr	9441		10074		10223		0.6	96.6		10880		-200	98.1	101.9		10511		10.6	9567
COMPUTED 5Yr	9470		10121		10222		0.6	96.6		10703		-200	98.1	101.9		10578		10.6	9757



NASS CROP ESTIMATES

Example

CORN YIELD INDICATIONS

From Objective Yield Survey

STATE XXX

(Data is not real, was created for presentation purposes)

Traditional OYB - All Samples (HRL 3.6)

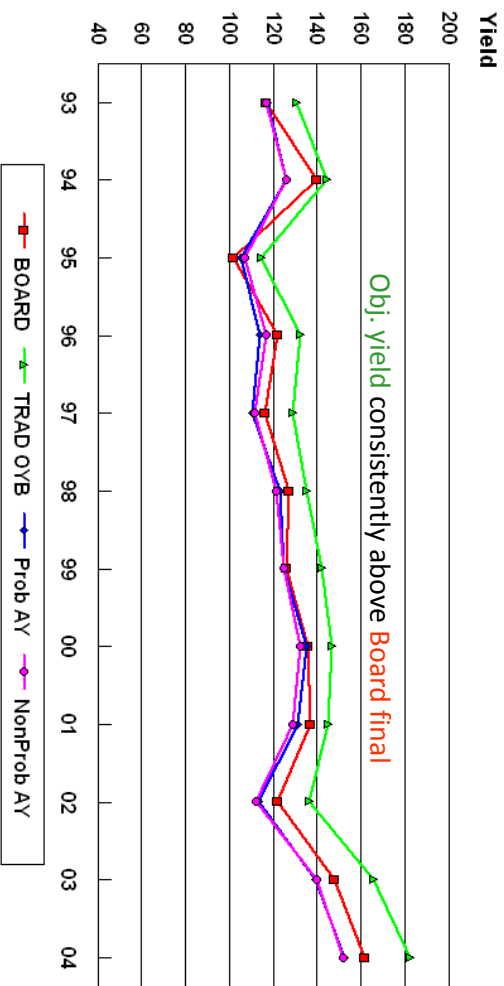
YR	YLD	Traditional OYB - All Samples (HRL 3.6)										DAS	
		AUG	DIFF	SEP	DIFF	OCT	DIFF	NOV	DIFF	FINAL	DIFF	YIELD	DIFF
93	117.0	116.8	0.2	128.2	-11.2	130.9	-13.9	125.4	-8.4	125.5	-8.5	117.3	-0.3
94	140.0	130.2	9.8	132.8	7.2	144.7	-14.7	146.9	-6.9	149.1	-8.1	140.6	-0.6
95	102.0	135.8	-33.8	131.9	-29.9	114.4	-12.4	110.5	-8.5	110.3	-8.3	102.2	-0.2
96	122.0	131.3	-9.3	133.7	-11.7	132.3	-10.3	134.4	-12.4	132.7	-10.7	122.3	-0.3
97	116.0	135.8	-19.8	128.7	-12.7	129.2	-13.2	124.3	-8.3	126.1	-10.1	116.6	-0.6
98	127.0	142.7	-15.7	139.4	-12.4	135.4	-8.4	138.2	-11.2	138.1	-11.1	127.2	-0.2
99	126.0	144.1	-18.1	140.2	-14.2	142.2	-16.2	141.7	-15.7	141.7	-15.7	125.6	0.4
00	136.0	144.1	-8.1	143.6	-7.6	146.8	-10.8	147.8	-11.8	147.8	-11.8	137.2	0.3
01	137.0	149.8	-12.8	143.8	-6.8	144.9	-7.9	149.7	-12.7	149.0	-11.9	137.2	0.3
02	122.0	145.5	-23.5	139.0	-17.0	136.4	-14.4	136.5	-14.5	136.4	-14.4	122.3	-0.3
03	148.0	153.3	-5.3	152.8	-4.8	155.9	-17.9	164.3	-16.5	164.3	-16.3	148.6	1.4
04	162.0	165.6	-3.6	164.4	-2.4	182.2	-20.2	182.3	-20.3	182.3	-20.3	161.3	0.7
94-03 DIFF			-13.7		-11.0		-11.6		-11.8		-11.9		-0.0
COMPUTED	151.9		153.4		170.6		170.5		170.3		161.2		161.2
REG TO BD	140.5		153.0		169.7		167.0		165.1		161.8		161.8
STD ERR	14.7		11.9		5.4		3.6		2.3		0.5		0.5

Survey Indications by Month





OCTOBER CORN YIELD



Data not real – created for demonstration

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