Agricultural Input Price Outlook and Trends in Costs of Selected Cropping Operations

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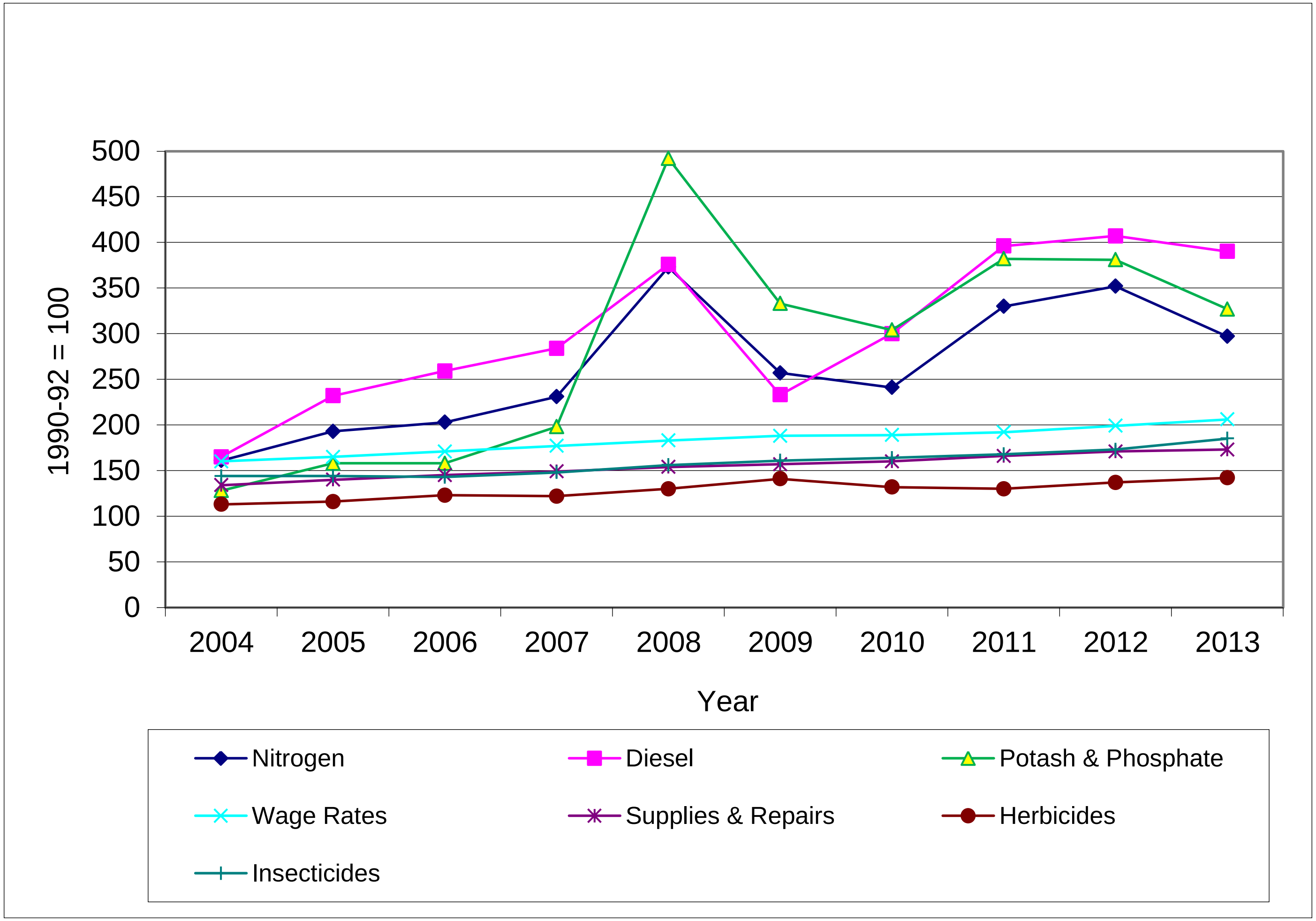
Introduction

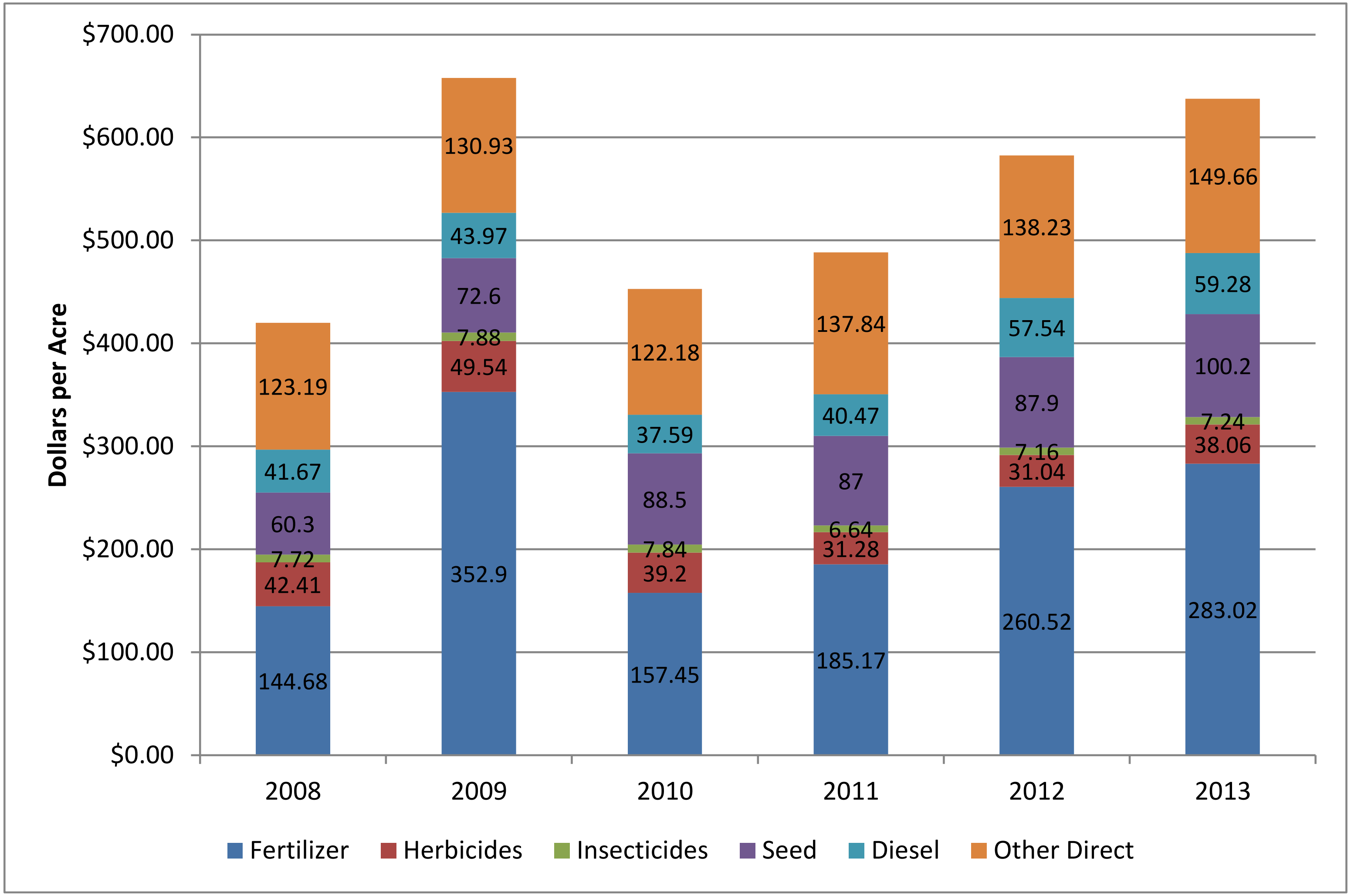
- Situation for agricultural input prices as represented by the major sub-indices of prices paid by farmers.
- Address the outlook for prices of plant nutrients.
- Review alternative forecasts for inputs other than plant nutrients.
- Compare costs of operations from selected state’s custom rate surveys.
- Conclusion

Prices Paid Indices by Sub-Component

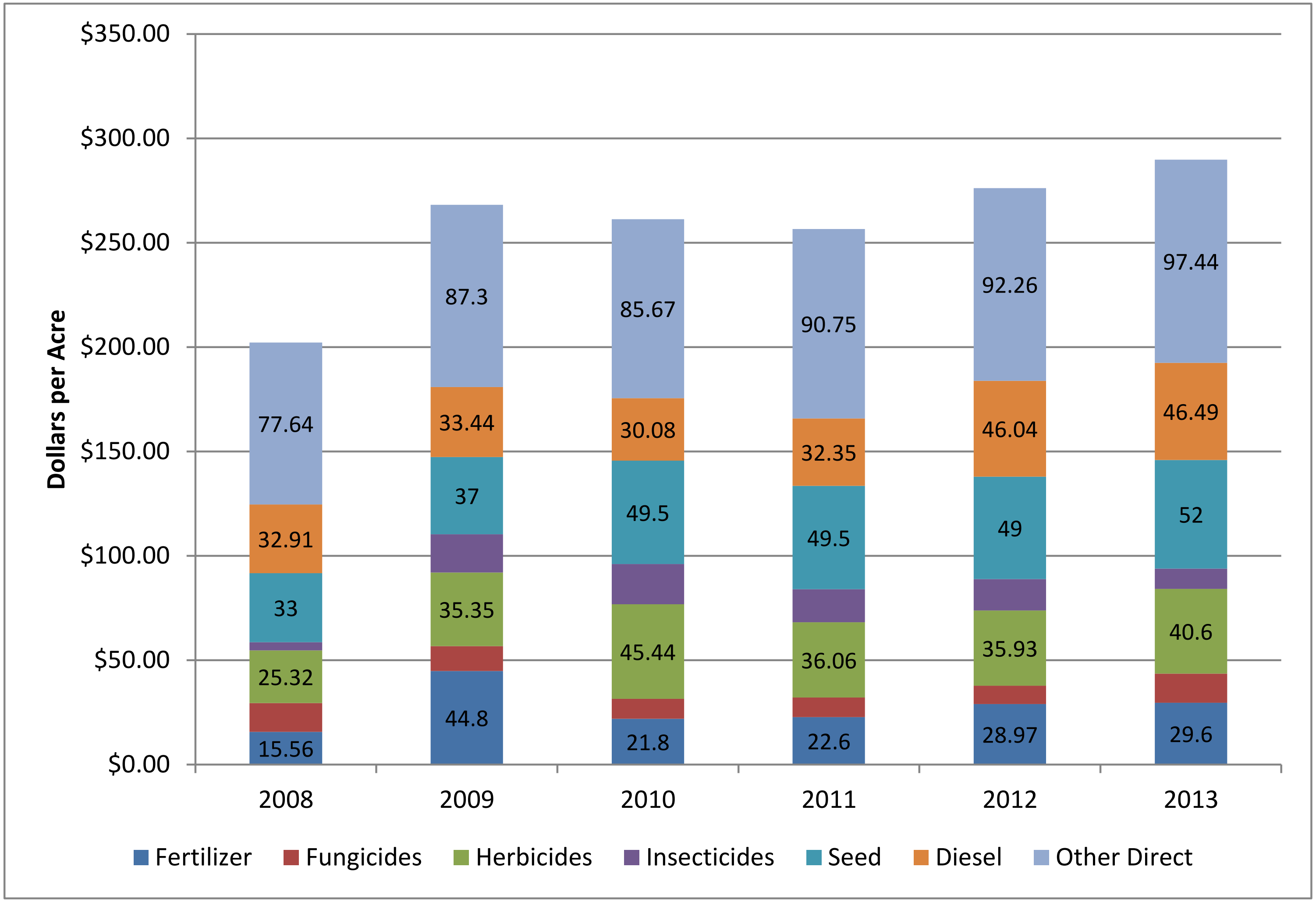


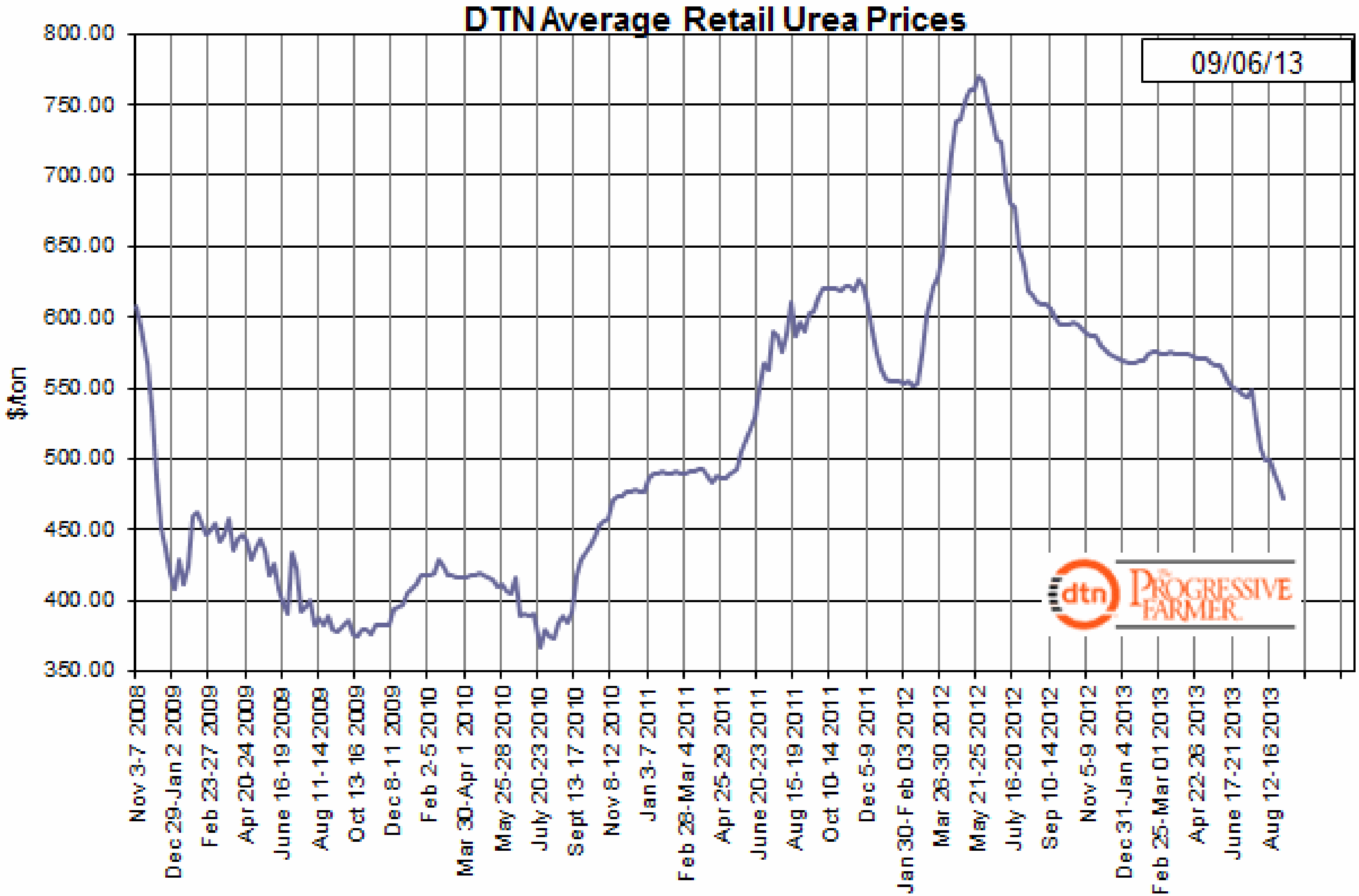
Source: National Agricultural Statistics Service, Agricultural Statistics Board, U.S. Department of Agriculture. Agricultural Prices. August 2013. Web available at http://usda01.library.cornell.edu/usda/current/AgriPric/AgriPric-08-30-2013.pdf .

Direct Specified Expenses, Delta Area, Furrow Irrigated Corn, 185 Bushel/Acre Yield Goal

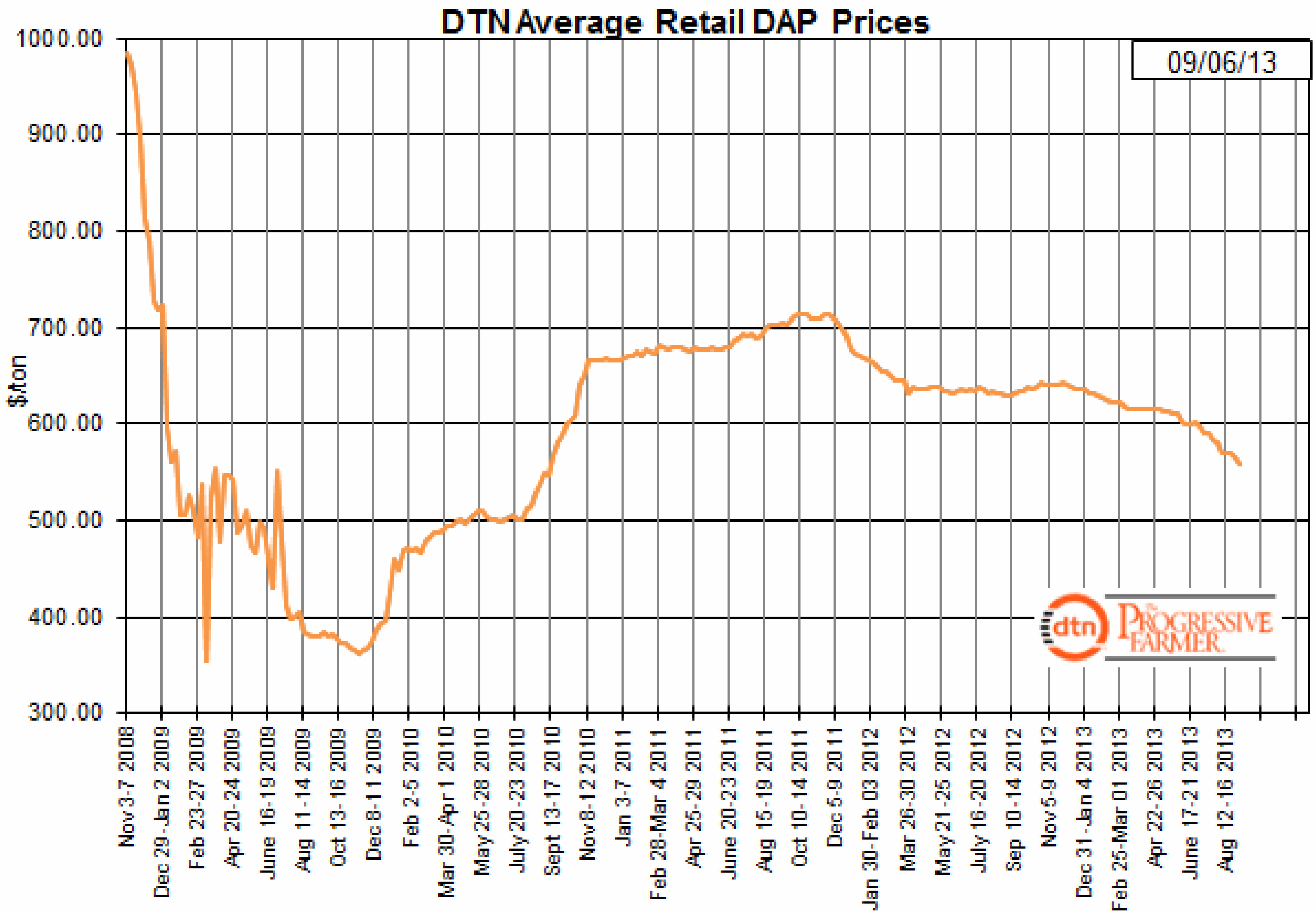


Direct Specified Expenses, Delta Area, Furrow Irrigated Soybeans, 65 Bushel/Acre Yield Goal





Source: http://online.dtn.com



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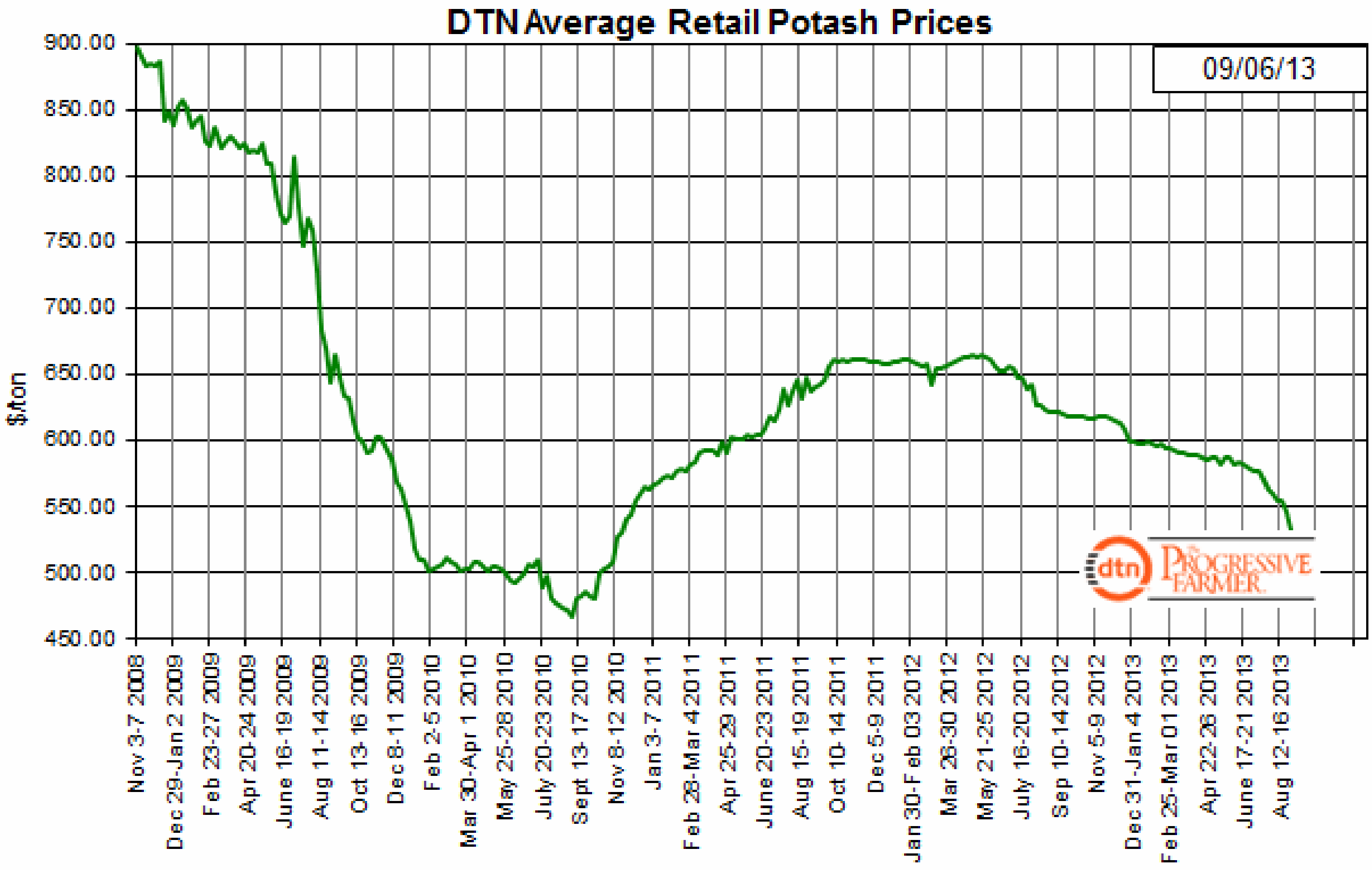
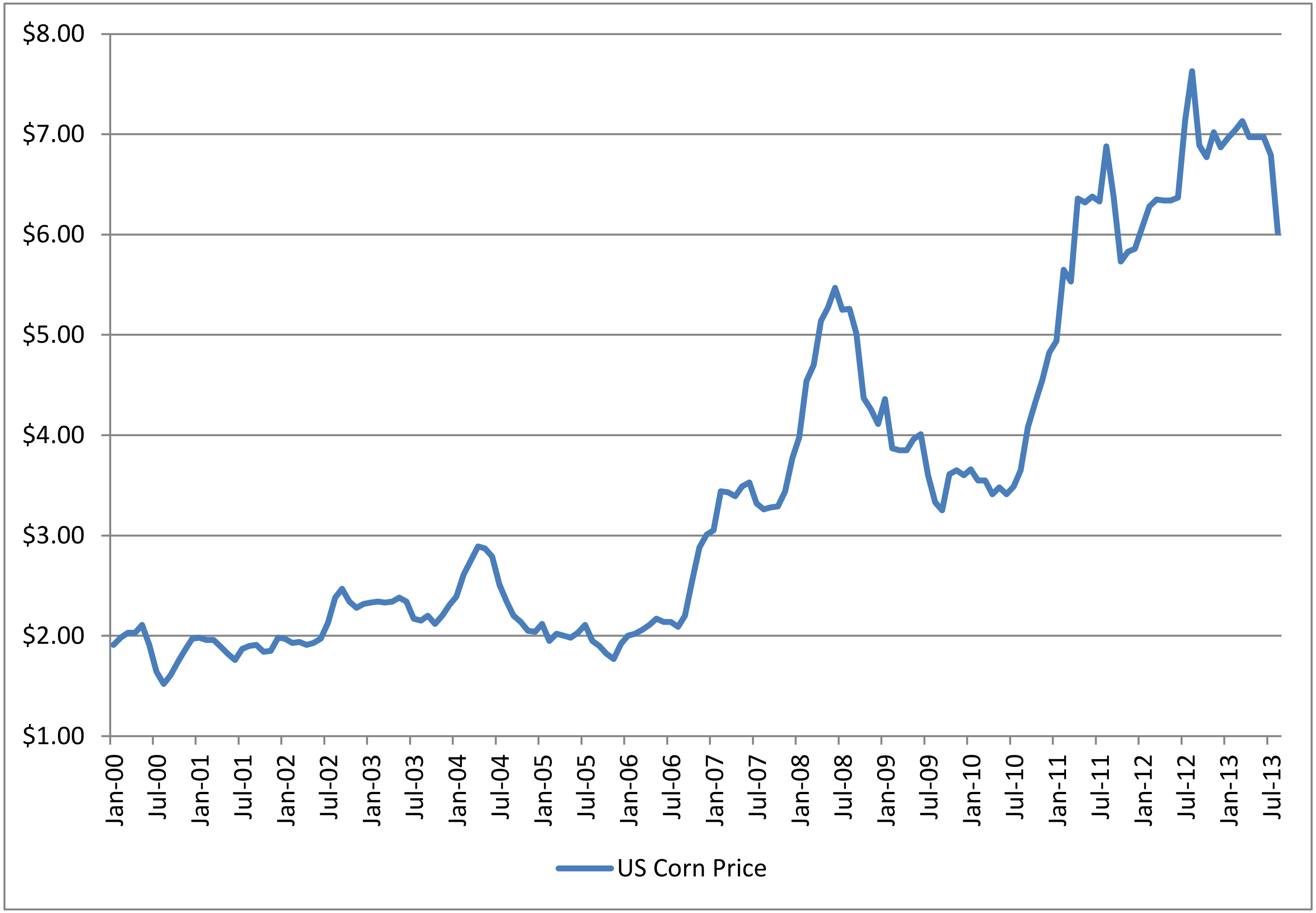


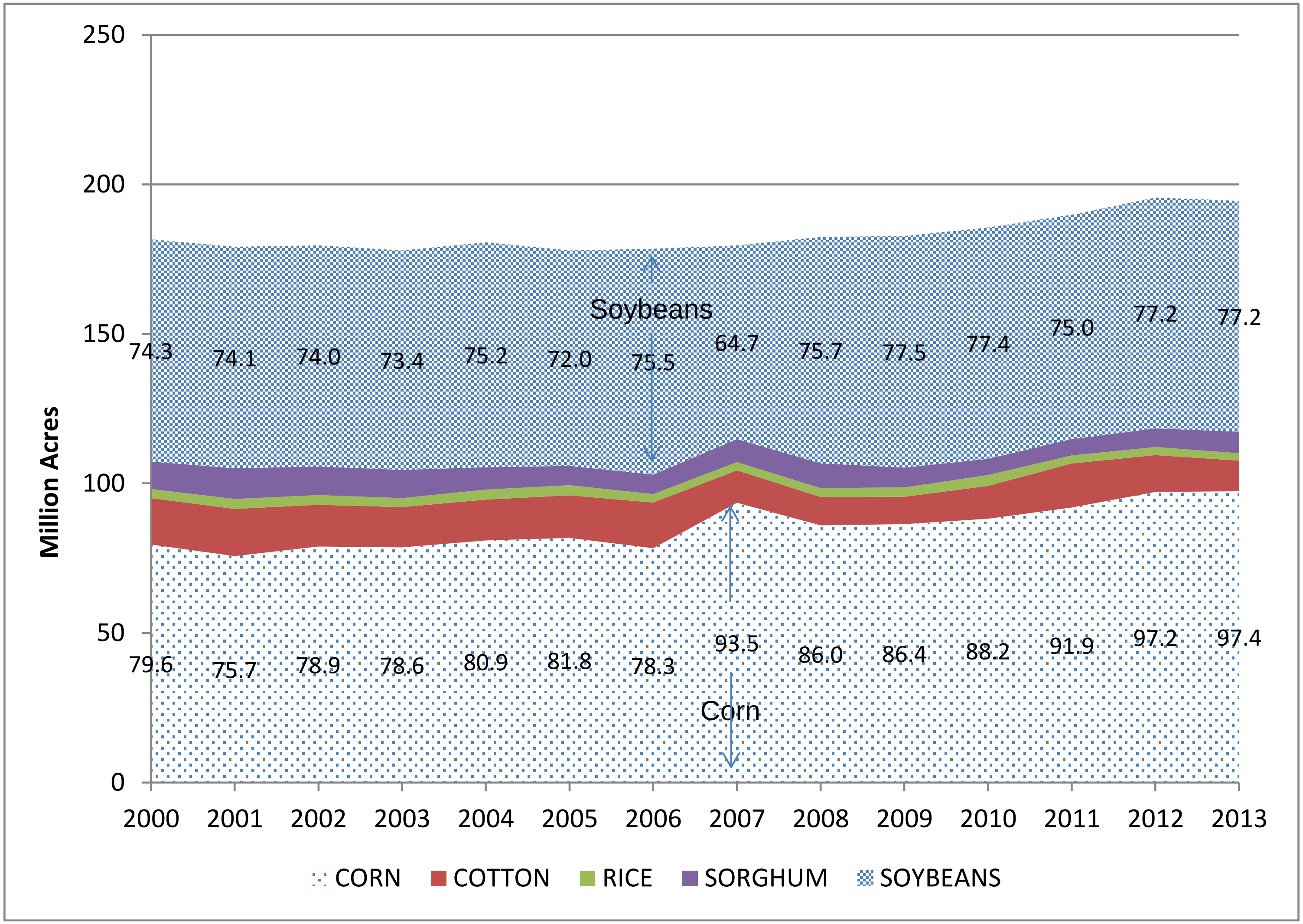
Source: http://online.dtn.com

Monthly U.S. Corn Price Received by Farmers



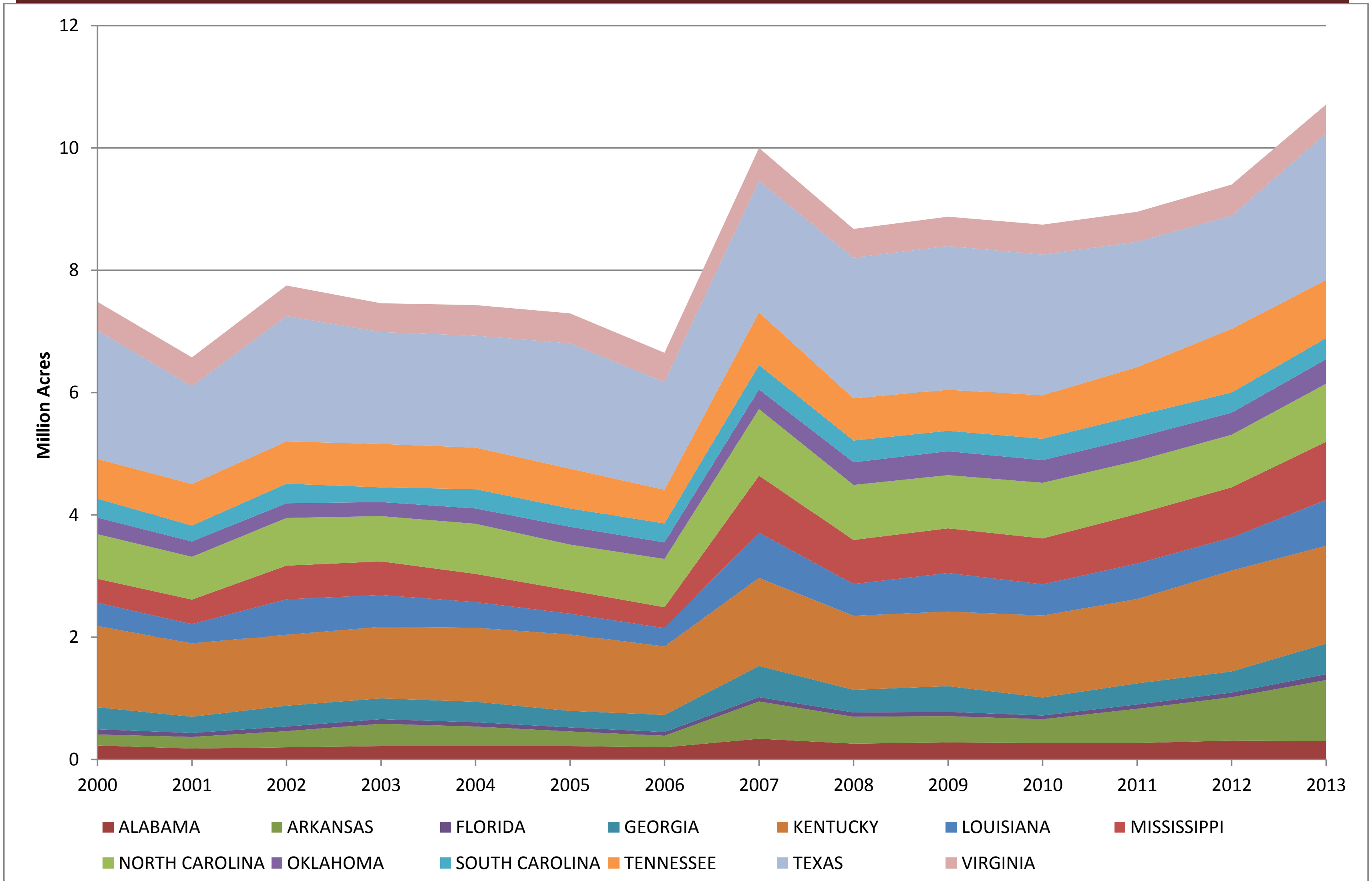
Source: National Agricultural Statistics Service, Quick Stats, September 9, 2013.

Acreage Planted to Selected Crops in U.S.



Source: National Agricultural Statistics Service, Quick Stats, September 9, 2013.

Corn Planted Acreage – Southern Region



Source: National Agricultural Statistics Service, Quick Stats, September 9, 2013.

World Urea
Potential Supply/Demand Balance
(million metric tonnes urea)

	2013	2014	2015	2016	2017
Supply					
Capacity	198.4	207.0	214.6	221.3	236.3
Potential Supply*	**182.1**	**188.6**	**195.3**	**202.3**	**207.4**
Demand					
Fertilizer Demand	143.2	147.6	151.4	154.4	157.4
Non-fertilizer Demand	28.6	30.5	33.6	36.1	37.7
Total Demand	**171.8**	**178.1**	**184.9**	**190.6**	**195.2**
Potential Balance	**10.3**	**10.6**	**10.4**	**11.7**	**12.2**
% of Supply	***6%***	***6%***	***5%***	***6%***	***6%***

Source: Prud'homme, IFA, June 2013

World Phosphoric Acid
Potential Supply/Demand Balance
(million metric tonnes P_2O_5)

	2013	2014	2015	2016	2017
Supply					
Capacity	54.6	57.2	58.7	60.3	63.7
Potential Supply*	**45.5**	**46.9**	**48.5**	**50.2**	**52.0**
Demand					
Fertilizer Demand	36.1	37.1	38.1	39.0	39.8
Non-fertilizer Use	5.2	5.4	5.5	5.7	5.8
Distribution Losses	0.8	0.8	0.9	0.9	0.9
Total Demand	**42.1**	**43.3**	**44.5**	**45.5**	**46.5**
Potential Balance	**3.5**	**3.6**	**4.0**	**4.7**	**5.5**
% of Supply	***8%***	***8%***	***8%***	***9%***	***10%***

Source: Prud'homme, IFA, June 2013

World Potash
Potential Supply/Demand Balance
(million metric tonnes K_2O)

	2013	2014	2015	2016	2017
Supply					
Capacity	49.7	50.4	54.5	56.6	59.6
Potential Supply*	**41.7**	**42.6**	**45.8**	**47.2**	**49.7**
Demand					
Fertilizer Demand	29.0	29.9	31.2	32.3	33.2
Non-fertilizer Demand	2.8	2.8	2.9	3.0	3.1
Distribution Losses	0.9	1.0	1.0	1.0	1.1
Total Demand	**32.7**	**33.7**	**35.1**	**36.3**	**37.4**
Potential Balance	**9.0**	**8.9**	**10.7**	**10.8**	**12.3**
% of Supply	***22%***	***21%***	***23%***	***23%***	***25%***

Source: Prud'homme, IFA, June 2013

	2012				2013				2014				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2012	2013	2014
Energy Supply															
Crude Oil Production (a) (million barrels per day)	**6.22**	**6.28**	**6.42**	**7.02**	**7.12**	**7.30**	*7.57*	*7.89*	*8.15*	*8.34*	*8.46*	*8.76*	**6.49**	*7.47*	*8.43*
Dry Natural Gas Production (billion cubic feet per day)	**65.40**	**65.49**	**65.76**	**66.34**	**65.78**	**66.29**	*66.50*	*66.83*	*66.94*	*66.93*	*66.55*	*66.88*	**65.75**	*66.35*	*66.83*
Coal Production (million short tons)	**266**	**241**	**259**	**250**	**245**	**241**	*265*	*262*	*258*	*252*	*267*	*266*	**1,016**	*1,013*	*1,044*
Energy Consumption															
Liquid Fuels (million barrels per day)	**18.41**	**18.65**	**18.67**	**18.48**	**18.59**	**18.61**	*18.88*	*18.64*	*18.59*	*18.66*	*18.88*	*18.74*	**18.55**	*18.68*	*18.72*
Natural Gas (billion cubic feet per day)	**81.15**	**62.57**	**63.93**	**71.12**	**88.05**	**59.49**	*60.09*	*72.31*	*85.33*	*59.16*	*60.79*	*72.18*	**69.68**	*69.91*	*69.31*
Coal (b) (million short tons)	**208**	**202**	**254**	**226**	**229**	**216**	*263*	*233*	*240*	*220*	*262*	*237*	**890**	*942*	*959*
Electricity (billion kilowatt hours per day)	**10.03**	**10.14**	**11.82**	**9.78**	**10.39**	**10.02**	*11.64*	*9.86*	*10.41*	*10.05*	*11.65*	*9.92*	**10.45**	*10.48*	*10.51*
Renewables (c) (quadrillion Btu)	**2.05**	**2.18**	**1.94**	**1.96**	**2.09**	**2.30**	*2.01*	*2.02*	*2.15*	*2.34*	*2.11*	*2.12*	**8.13**	*8.43*	*8.72*
Total Energy Consumption (d) (quadrillion Btu)	**24.48**	**22.76**	**24.04**	**23.83**	**25.39**	**22.93**	*23.94*	*24.19*	*25.34*	*22.99*	*24.14*	*24.42*	**95.10**	*96.45*	*96.88*
Energy Prices															
Crude Oil (e) (dollars per barrel)	**107.62**	**101.45**	**97.38**	**97.27**	**101.14**	**99.45**	*110.92*	*106.00*	*102.67*	*103.50*	*101.18*	*99.50*	**100.84**	*104.48*	*101.70*
Natural Gas Henry Hub Spot (dollars per million Btu)	**2.45**	**2.28**	**2.88**	**3.40**	**3.49**	**4.01**	*3.51*	*3.70*	*3.88*	*3.66*	*3.94*	*4.14*	**2.75**	*3.68*	*3.91*
Coal (dollars per million Btu)	**2.41**	**2.42**	**2.41**	**2.38**	**2.34**	**2.37**	*2.36*	*2.37*	*2.40*	*2.39*	*2.39*	*2.37*	**2.40**	*2.36*	*2.39*

	2012				2013				2014				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2012	2013	2014
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	102.88	93.42	92.24	87.96	94.34	94.10	105.41	100.50	97.17	98.00	95.67	94.00	94.12	98.59	96.21
Brent Spot Average	118.49	108.42	109.61	110.09	112.49	102.58	110.40	107.00	104.00	103.50	101.33	100.00	111.65	108.12	102.21
Imported Average	108.13	101.19	97.20	97.64	98.71	97.39	110.43	105.58	102.18	103.00	100.69	99.00	101.11	103.07	101.27
Refiner Average Acquisition Cost	107.62	101.45	97.38	97.27	101.14	99.45	110.92	106.00	102.67	103.50	101.18	99.50	100.84	104.48	101.70
Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	297	299	302	275	289	290	300	275	274	287	277	260	293	289	275
Diesel Fuel	317	301	313	314	312	295	311	305	290	295	293	291	311	306	292
Heating Oil	312	292	296	306	308	275	295	293	282	280	278	281	303	295	280
Refiner Prices to End Users															
Jet Fuel	321	304	308	309	316	284	301	301	287	291	288	286	310	300	288
No. 6 Residual Fuel Oil (a)	270	266	251	248	252	243	273	270	263	260	257	253	260	260	258
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	361	372	367	351	357	360	360	344	339	356	347	328	363	355	343
Gasoline All Grades (b)	367	378	373	357	363	367	367	350	345	361	353	334	369	362	349
On-highway Diesel Fuel	397	395	394	402	403	388	394	398	381	387	381	380	397	396	382
Heating Oil	378	374	367	385	389	365	372	375	369	362	358	364	379	380	365
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	2.52	2.35	2.97	3.50	3.59	4.13	3.62	3.81	4.00	3.77	4.06	4.27	2.83	3.79	4.02
Henry Hub Spot (dollars per Million Btu)	2.45	2.28	2.88	3.40	3.49	4.01	3.51	3.70	3.88	3.66	3.94	4.14	2.75	3.68	3.91
End-Use Prices (dollars per thousand cubic feet)															
Industrial Sector	4.15	3.16	3.63	4.37	4.56	4.95	4.67	4.95	5.30	4.61	5.00	5.44	3.86	4.78	5.11
Commercial Sector	8.16	8.04	8.33	8.06	7.84	8.60	9.61	9.34	9.36	9.39	10.06	9.93	8.13	8.62	9.62
Residential Sector	9.77	12.07	15.35	10.17	9.26	11.90	16.51	11.31	10.64	12.74	16.98	12.10	10.66	10.78	11.86
Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.41	2.42	2.41	2.38	2.34	2.37	2.36	2.37	2.40	2.39	2.39	2.37	2.40	2.36	2.39
Natural Gas	3.31	2.90	3.43	4.07	4.36	4.56	4.16	4.63	4.78	4.33	4.60	5.01	3.39	4.40	4.66
Residual Fuel Oil (c)	21.14	22.46	19.93	20.01	19.37	19.56	19.24	19.12	18.77	18.51	18.13	17.69	20.85	19.32	18.27
Distillate Fuel Oil	23.70	23.01	22.96	24.27	23.49	22.70	23.94	24.12	23.43	23.58	23.45	23.87	23.46	23.57	23.57
End-Use Prices (cents per kilowatthour)															
Industrial Sector	6.47	6.63	7.09	6.57	6.54	6.77	7.21	6.68	6.61	6.88	7.34	6.79	6.70	6.81	6.91
Commercial Sector	9.89	10.10	10.46	9.94	9.93	10.31	10.69	10.10	10.05	10.46	10.89	10.23	10.12	10.28	10.43
Residential Sector	11.53	11.99	12.15	11.79	11.55	12.30	12.56	12.12	11.77	12.48	12.72	12.30	11.88	12.15	12.33

Projected Annual Percentage Changes in Selected Cost Components (FAPRI).

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Production items	97%	99%	101%	101%	102%	103%	102%	102%	102%
Feed	80%	96%	100%	101%	101%	101%	100%	100%	100%
Livestock & poultry	102%	99%	96%	96%	99%	102%	102%	102%	102%
Seeds	101%	99%	101%	102%	103%	103%	102%	102%	102%
Fertilizer	101%	98%	99%	100%	102%	102%	102%	102%	102%
Mixed fertilizer	101%	98%	99%	100%	102%	102%	103%	102%	102%
Nitrogen fertilizer	100%	99%	99%	101%	103%	103%	103%	102%	103%
Potash and phosph.	101%	98%	98%	99%	101%	102%	102%	102%	102%
Agricultural chemicals	103%	101%	102%	102%	103%	102%	103%	102%	102%
Fuels	96%	97%	104%	103%	104%	103%	103%	102%	103%
Supplies & repairs	102%	102%	102%	102%	103%	102%	103%	102%	102%
Autos & trucks	102%	102%	102%	101%	102%	102%	101%	101%	101%
Farm machinery	102%	102%	103%	103%	103%	103%	102%	103%	103%
Building material	102%	102%	102%	102%	102%	102%	102%	101%	101%
Farm services	102%	101%	102%	102%	103%	103%	103%	102%	103%
Interest	105%	103%	109%	109%	104%	103%	102%	101%	102%
Taxes	103%	103%	103%	102%	103%	103%	102%	102%	103%
Wage rates	102%	103%	103%	103%	103%	103%	103%	103%	103%

Food and Agricultural Policy Research Institute (FAPRI). “FAPRI U.S. Baseline Briefing Book.” University of Missouri-Columbia, FAPRI-MU Report #01-13.

Selected Operation Costs From 2013 Custom Rate Surveys

	Iowa				Mississippi				Texas		
Operation	Minimum	Maximum	Average		Minimum	Maximum	Average		Minimum	Maximum	Average
Moldboard Plowing	$ 11.00	$ 20.00	$ 16.15		$ 6.00	$ 20.00	$ 12.00		$ 12.00	$ 30.00	$ 20.22
Subsoiling	$ 11.50	$ 28.00	$ 18.80		$ 6.00	$ 22.00	$ 14.04		$ 8.00	$ 50.00	$ 18.72
Tandem Disking	$ 8.00	$ 20.00	$ 13.60		$ 7.00	$ 25.00	$ 12.12		$ 7.00	$ 35.00	$ 14.53
Field Cultivating	$ 9.00	$ 19.00	$ 13.35		$ 3.00	$ 12.00	$ 8.80		$ 6.00	$ 25.00	$ 11.80
Planting - Row Crop	$ 12.00	$ 27.00	$ 16.60		$ 8.00	$ 20.00	$ 13.00		$ 8.00	$ 30.00	$ 14.56
Spraying - Ground Broadcast-SP	$ 5.00	$ 15.00	$ 7.30		$ 4.00	$ 8.00	$ 6.29		$ 1.50	$ 20.00	$ 6.33
Combining Corn (Flat Rate per Acre)	$ 24.00	$ 55.00	$ 32.90		$ 25.00	$ 50.00	$ 35.27		$ 22.00	$ 35.00	$ 26.50
Hay Baling (large round bale)	$ 9.00	$ 13.50	$ 10.95		$ 5.00	$ 25.00	$ 11.07		$ 10.00	$ 22.00	$ 14.77

Comparison of Selected Operation Costs From Survey With Budget Generator Estimates

	Mississippi			MSBG Estimate		
Operation	Minimum	Maximum	Average	Minimum	Maximum	Average
Subsoiling	$ 6.00	$ 22.00	$ 14.04	$ 13.31	$ 17.45	$ 15.38
Tandem Disking	$ 7.00	$ 25.00	$ 12.12	$ 8.90	$ 12.75	$ 10.83
Field Cultivating	$ 3.00	$ 12.00	$ 8.80	$ 5.37	$ 12.22	$ 8.80
Planting - Row Crop	$ 8.00	$ 20.00	$ 13.00	$ 8.97	$ 17.25	$ 13.11
Spraying - Ground Broadcast-SP	$ 4.00	$ 8.00	$ 6.29	$ 1.07	$ 2.07	$ 1.57
Combining Corn (Flat Rate per Acre)	$ 25.00	$ 50.00	$ 35.27	$ 26.22	$ 37.48	$ 31.85

Conclusion

- I think that total demand for plant nutrients will be lower in 2014 due to reduced corn acreage and impact of three years of below trend line yields.
- However, fertilizer price declines from current levels are probably limited as plant nutrient prices have declined considerably over the past year.
- I think that custom rate surveys are an important component of an Extension farm management program.

Questions??

- Thanks!