

Economics of Double-crop Summer Forages after Wheat

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Spring Field Day

North Unit K-State Harvey County Experiment Field

May 31, 2007. Hesston, KS

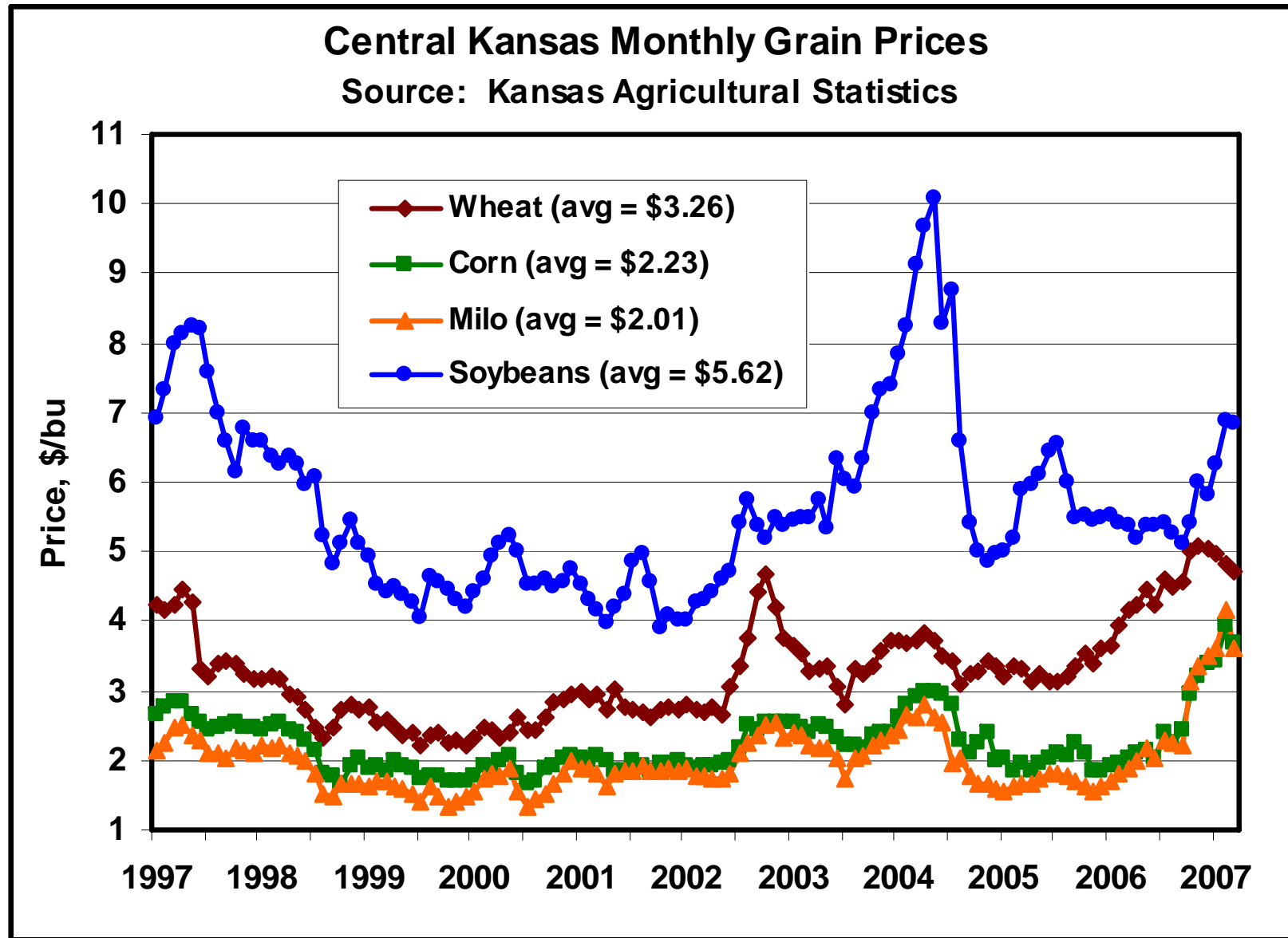


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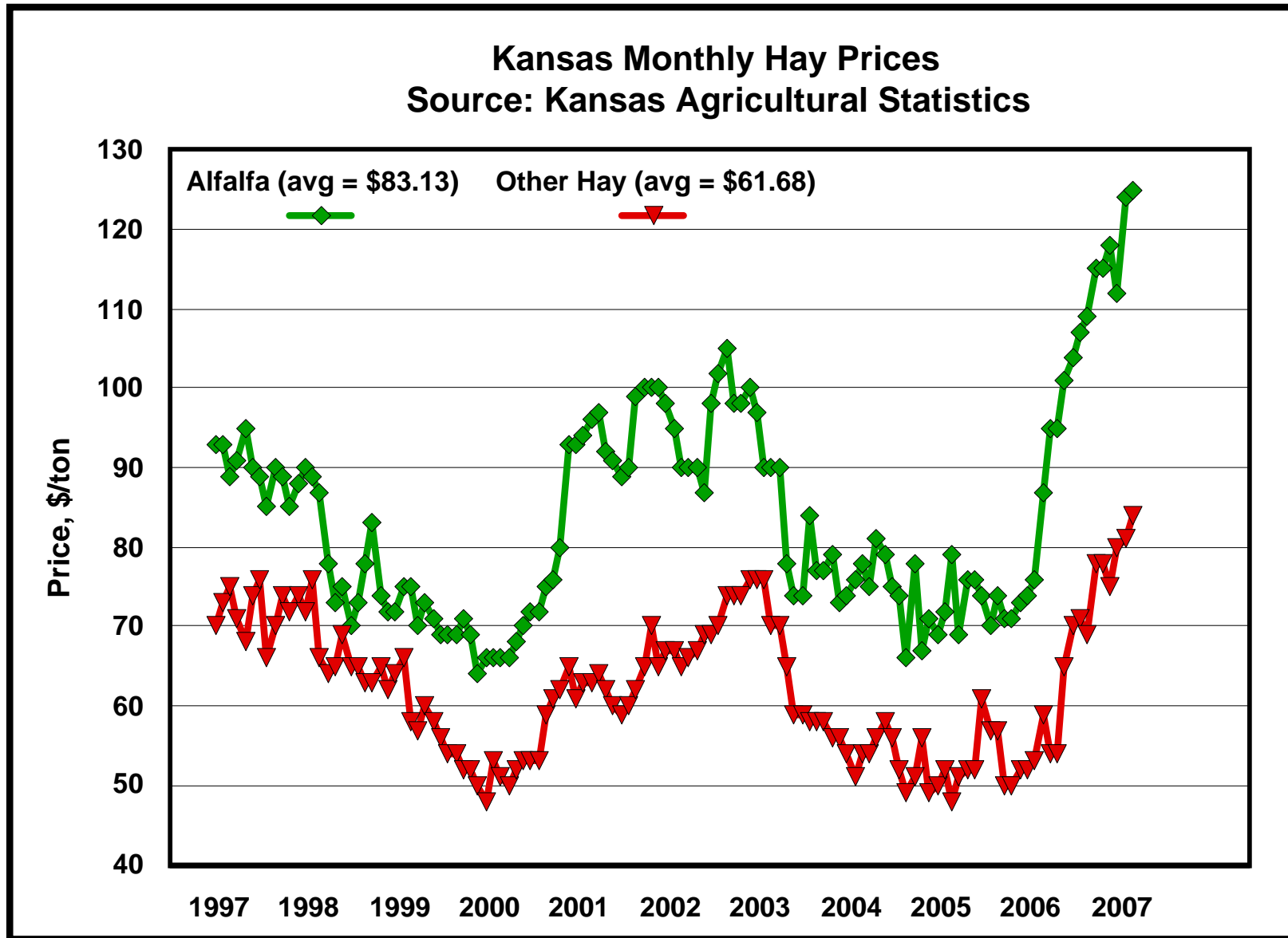
Key factors driving the economics of double crop forage after wheat...

- **Strong commodity markets**
- **Yields of forage crop**
- **Value of nutrients removed**
- **Costs of establishing and harvesting forage crop**
 - **No-till versus tillage**
 - **Baling**
 - **Grazing**
- **Impact on yield of following crop**
- **Impact of costs of following crop**

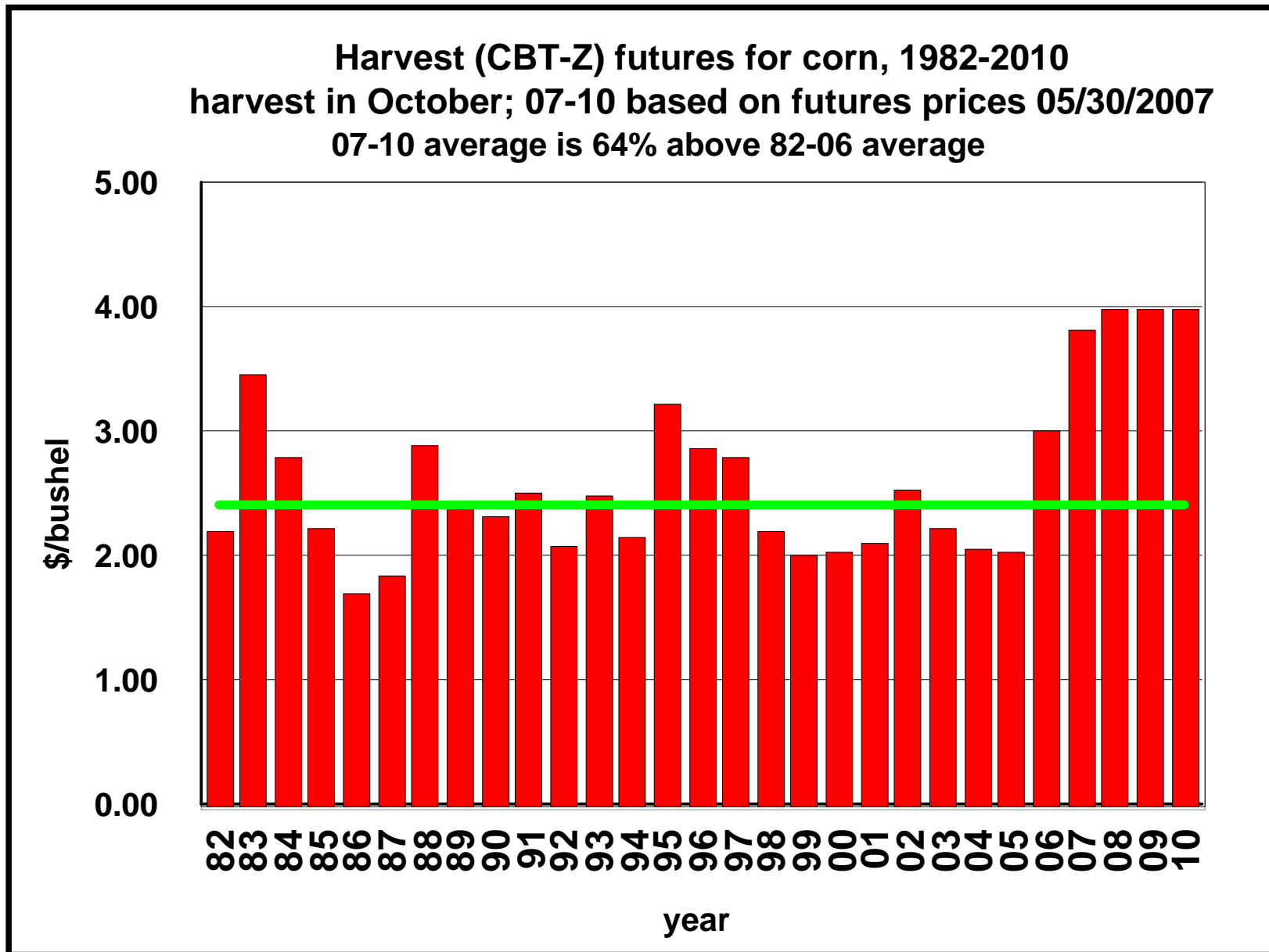
Crop prices are strong by historical standards...



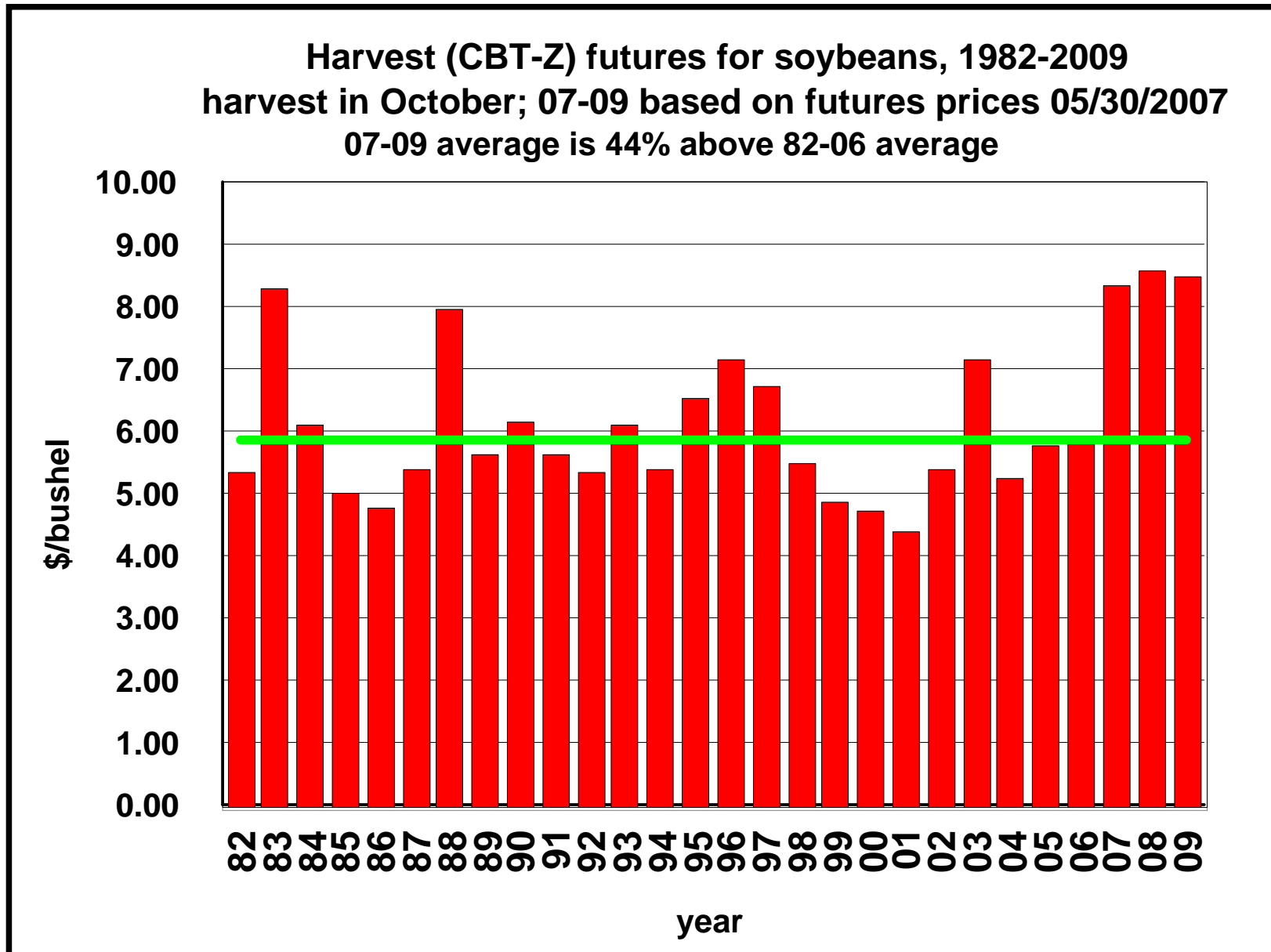
Strength in crop markets impacts hay prices...



How long will strong prices stick around?



How long will strong prices stick around?



How long will strong prices stick around?

Harvest (KBT-N) futures for hard red winter wheat, 1982-2009
harvest in June; 07-09 based on futures prices 05/30/2007
07-09 average is 47% above 82-06 average

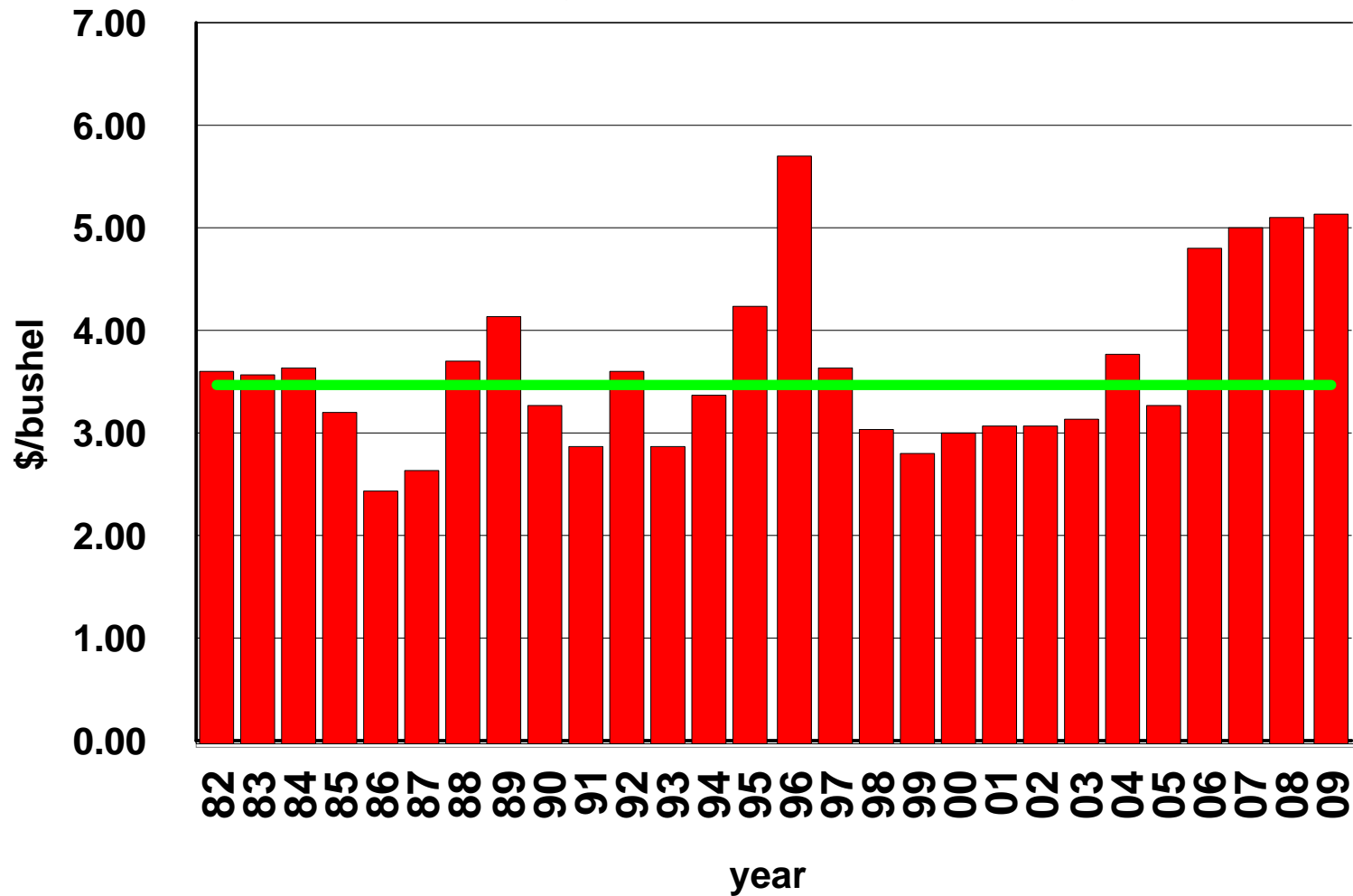


Table 1. Summer Cover Crops after Wheat: Species Comparison

KSU Hesston Experiment Field, 2002-2005

Forage crop	Seeding	Seed	Seed	Yield, Dry Matter (ton/acre)					Avg
	Rate, lb/ac	Cost, \$/lb	Cost, \$/ac	2002	2003	2004	2005	2006	
Cowpea¹	30	\$0.30	\$9.00	1.53		0.91	1.03		1.16
Cowpea, Chinese Red	30	\$0.30				0.68	1.22		
Cowpea, Red Ripper	30	\$0.30				1.10	1.01		
Cowpea, Victor	30	\$0.30				0.96	0.71		
Cowpea, Iron Clay	30	\$0.30					1.19		
Soybean¹	60	\$0.38	\$22.71	2.41		0.98	1.56		1.65
H8001 RR Soybean (VIII)	59	\$0.50		2.41					
Soybean, KS 4702 sp	60	\$0.26				0.53	1.47		
Soybean, Hutcheson	60	\$0.26				1.22	1.51		
Soybean, Asgrow AG7601 RR	60	\$0.50				1.19	1.69		
Forage Soybean¹	51	\$0.26	\$13.26	1.88		1.08	1.83		1.60
Forage Soybean, Derry	52.5	\$0.26				0.83	2.14		
Forage Soybean, Donegal	52.5	\$0.26				1.21			
Forage Soybean, Laredo	45	\$0.26		1.88		1.18	1.68		
Forage Soybean, Tara	52.5	\$0.26					1.84		
Forage Soybean, Tyrone	52.5	\$0.26				1.08	1.66		
Spring oats	64	\$0.08		0.79					
Sunn Hemp	10	\$1.40	\$14.00	2.74		2.54	1.82		2.37
Sunflower^{1,2}	22	\$0.74	\$16.28	2.19		2.98	1.84		2.34
Pearl Millet	10	\$0.46	\$4.60	1.73		2.41	1.14		1.76
Proso Millet	20	\$0.40					0.88		
Grain Sorghum¹	5	\$1.43	\$7.15	4.31		3.67	2.45		3.48
Sudangrass	15	\$1.32	\$19.80	2.56		3.82	3.06		3.15
Sorghum x Sudangrass	15	\$1.36	\$20.40	3.55		7.48	2.58		4.54

¹ Average of multiple varieties/hybrids both within and across years² Seeding rate and seed cost are from MF-2145 and units are 1000 seeds/ac

Table 2. Summer Cover Crops after Wheat: Late-Maturing Soybean and Sunn Hemp Comparison

KSU Hesston Experiment Field, 2002-2006

Means of 16 replications/year.

Cover Crop	Seeding Rate, lb/ac	Seed Cost, \$/lb	Seed Cost, \$/ac	Yield, Dry Matter (ton/acre)					
				2002	2003	2004	2005	2006	Avg
Soybean (Group VII or VIII)	60	\$0.26	\$15.60	3.91		2.11	2.42	1.37	2.45
Sunn hemp	10	\$1.40	\$14.00	3.52		3.19	4.14	2.08	3.23
LSD .05				NS		0.35	0.36	0.61	

Next Grain Crop: Grain Sorghum After Wheat*	2002	2003	Yield (bu/acre)			Avg
			2004	2005	2006	
No cover crop		48.0		76.2	83.6	69.3
Soybean (Group VII or VIII)		50.8		85.9	96.1	77.6
Sunn hemp		58.6		89.6	101.4	83.2
LSD .05		5.0		4.9	4.7	

*Main effect of cover crop treatments averaged over 0,30,60,90 lb N/a on sorghum.

Economic analysis of double crop forage after wheat...

- **Partial budget comparing control (no double crop) to alternative forage crops**
 - **Income of forage crop + N credit (if any)**
 - **Costs of fallow vs. establishing cover crop**
 - **Harvest costs**
 - **Impact on yield of following crop (+/–)**
 - **Impact of costs on following crop (+/–)**
- **Net returns to forage crop (improvement from control)**
- **Breakeven forage price and yield**
- **Ignored land tenure (i.e., assumed owned land or cash rent)**

Table 3. Economics of Double-crop Summer Forages after Wheat -- KSU Hesston Experiment Field

Scenario #1: No nitrogen credit for legumes & no impact on yield of following crop

	<u>Double-crop Forage</u>									
	Control	Cowpea	Soybean	Forage soybean	Sunn Hemp	Sunflower	Pearl millet	Grain sorghum	Sudangrass	Sorghum x sudangrass
INCOME										
Yield, DM tons	0.00	1.16	1.65	1.60	2.37	2.34	1.76	3.48	3.15	4.54
Harvested yield, tons/ac	0.00	1.04	1.48	1.43	2.13	2.10	1.58	3.13	2.83	4.08
Nitrogen credit, lbs	0	0	0	0	0	0	0	0	0	0
Forage price, \$/ton	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00
Income, \$/ac	\$0.00	\$67.69	\$96.34	\$93.19	\$138.28	\$136.52	\$102.83	\$203.13	\$183.85	\$265.06
COSTS										
Seed, \$/ac	\$0.00	\$9.00	\$22.71	\$13.26	\$14.00	\$16.28	\$4.60	\$7.15	\$19.80	\$20.40
Seeding rate, lbs/ac	0.0	30.0	59.8	51.0	10.0	22.0	10.0	5.0	15.0	15.0
Seed cost, \$/lb	\$0.00	\$0.30	\$0.38	\$0.26	\$1.40	\$0.74	\$0.46	\$1.43	\$1.32	\$1.36
Planting, \$/ac	\$11.77	0	1	1	1	1	1	1	1	1
Herbicides	\$9.03	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15
Herbicide application	\$4.40	2	1	1	1	1	1	1	1	1
Tillage										
Disk, \$/ac	\$7.79	0	0	0	0	0	0	0	0	0
Chisel, \$/ac	\$9.10	0	0	0	0	0	0	0	0	0
Field cultivation, \$/ac	\$7.37	0	0	0	0	0	0	0	0	0
Nitrogen removed	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$19.14	\$15.50	\$26.70	\$30.61	\$37.16
Phosphorus removed	\$0.33	\$0.00	\$4.91	\$5.39	\$5.21	\$8.49	\$5.65	\$4.05	\$8.83	\$10.66
Harvesting										
Swathing, \$/ac	\$10.03	0	1	1	1	1	1	1	1	1
Sideraking, \$/ac	\$3.40	0	1	1	1	1	1	1	1	1
Baling, \$/ton	\$12.44	0.00	1.04	1.48	1.43	2.13	2.10	1.58	2.83	4.08
Hauling, \$/ton	\$4.84	0.00	1.04	1.48	1.43	2.13	2.10	1.58	2.83	4.08
Total Cost	\$17.83	\$65.65	\$87.45	\$76.99	\$93.00	\$111.12	\$85.23	\$130.44	\$143.70	\$178.25
FOLLOWING CROP										
Change in expected yield, bu/ac	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price, \$/bu	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35
Increased income, \$/ac	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Marginal cost, \$/bu										
Nitrogen	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Phosphorus	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Harvesting	\$0.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Increased cost, \$/ac	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Net Returns to Forage Crop	-\$17.83	\$2.04	\$8.89	\$16.20	\$45.27	\$25.40	\$17.60	\$72.70	\$40.15	\$86.82
Improvement from Control	xxx	\$19.87	\$26.72	\$34.03	\$63.10	\$43.23	\$35.43	\$90.53	\$57.98	\$104.65
Breakeven forage price, \$/ton	xxx	\$45.92	\$46.97	\$41.27	\$35.34	\$44.42	\$42.61	\$36.03	\$44.50	\$39.34
Breakeven forage yield, tons/ac	xxx	0.63	0.92	0.72	0.80	1.19	0.84	1.23	1.61	1.88

Table 4. Economics of Double-crop Summer Forages after Wheat -- KSU Hesston Experiment Field
Scenario #2: Nitrogen credit on some crops and impact on yield (positive or negative) for following crop

	<u>Double-crop Forage</u>									
	Control	Cowpea	Soybean	Forage soybean	Sunn Hemp	Sunflower	Pearl millet	Grain sorghum	Sudangrass	Sorghum x sudangrass
INCOME										
Yield, DM tons	0.00	1.16	1.65	1.60	2.37	2.34	1.76	3.48	3.15	4.54
Harvested yield, tons/ac	0.00	1.04	1.48	1.43	2.13	2.10	1.58	3.13	2.83	4.08
Nitrogen credit, lbs	0	17	25	24	36	0	0	0	0	0
Forage price, \$/ton	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00
Income, \$/ac	\$0.00	\$74.65	\$106.23	\$102.76	\$152.48	\$136.52	\$102.83	\$203.13	\$183.85	\$265.06
COSTS										
Seed, \$/ac	\$0.00	\$9.00	\$22.71	\$13.26	\$14.00	\$16.28	\$4.60	\$7.15	\$19.80	\$20.40
Seeding rate, lbs/ac	0.0	30.0	59.8	51.0	10.0	22.0	10.0	5.0	15.0	15.0
Seed cost, \$/lb	\$0.00	\$0.30	\$0.38	\$0.26	\$1.40	\$0.74	\$0.46	\$1.43	\$1.32	\$1.36
Planting, \$/ac	\$11.77	0	1	1	1	1	1	1	1	1
Herbicides	\$9.03	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15
Herbicide application	\$4.40	2	1	1	1	1	1	1	1	1
Tillage										
Disk, \$/ac	\$7.79	0	0	0	0	0	0	0	0	0
Chisel, \$/ac	\$9.10	0	0	0	0	0	0	0	0	0
Field cultivation, \$/ac	\$7.37	0	0	0	0	0	0	0	0	0
Nitrogen removed	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$19.14	\$15.50	\$26.70	\$30.61	\$37.16
Phosphorus removed	\$0.33	\$0.00	\$4.91	\$5.39	\$5.21	\$8.49	\$5.65	\$4.05	\$8.83	\$10.66
Harvesting										
Swathing, \$/ac	\$10.03	0	1	1	1	1	1	1	1	1
Sideraking, \$/ac	\$3.40	0	1	1	1	1	1	1	1	1
Baling, \$/ton	\$12.44	0.00	1.04	1.48	1.43	2.13	2.10	3.13	2.83	4.08
Hauling, \$/ton	\$4.84	0.00	1.04	1.48	1.43	2.13	2.10	3.13	2.83	4.08
Total Cost	\$17.83	\$65.65	\$87.45	\$76.99	\$93.00	\$111.12	\$85.23	\$130.44	\$143.70	\$178.25
FOLLOWING CROP										
Change in expected yield, bu/ac	0.0	4.0	4.0	4.0	7.0	-5.0	0.0	-5.0	-5.0	-5.0
Price, \$/bu	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35
Increased income, \$/ac	\$0.00	\$13.40	\$13.40	\$13.40	\$23.45	-\$16.75	\$0.00	-\$16.75	-\$16.75	-\$16.75
Marginal cost, \$/bu										
Nitrogen	\$0.40	\$0.00	\$1.78	\$1.78	\$1.78	\$3.11	-\$2.22	\$0.00	-\$2.22	-\$2.22
Phosphorus	\$0.33	\$0.00	\$0.58	\$0.58	\$0.58	\$1.01	-\$0.72	\$0.00	-\$0.72	-\$0.72
Harvesting	\$0.30	\$0.00	\$1.20	\$1.20	\$1.20	\$2.10	-\$1.50	\$0.00	-\$1.50	-\$1.50
Increased cost, \$/ac	\$0.00	\$3.55	\$3.55	\$3.55	\$6.22	-\$4.44	\$0.00	-\$4.44	-\$4.44	-\$4.44
Net Returns to Forage Crop	-\$17.83	\$18.84	\$28.63	\$35.61	\$76.70	\$13.10	\$17.60	\$60.39	\$27.85	\$74.51
Improvement from Control	xxx	\$36.67	\$46.46	\$53.44	\$94.53	\$30.93	\$35.43	\$78.22	\$45.68	\$92.34
Breakeven forage price, \$/ton	xxx	\$36.46	\$40.33	\$34.40	\$27.24	\$50.28	\$42.61	\$39.97	\$48.85	\$42.36
Breakeven forage yield, tons/ac	xxx	0.27	0.51	0.31	0.15	1.45	0.84	1.49	1.87	2.14

Table 5. Economics of Double-crop Summer Forages after Wheat -- KSU Hesston Experiment Field

Scenario #3: No nitrogen credit for legumes & no impact on yield of following crop -- reduce forage yield by 25% (i.e., crop failure)

	Double-crop Forage									
	Control	Cowpea	Soybean	Forage soybean	Sunn Hemp	Sunflower	Pearl millet	Grain sorghum	Sudangrass	Sorghum x sudangrass
INCOME										
Yield, DM tons	0.00	0.87	1.24	1.20	1.78	1.75	1.32	2.61	2.36	3.40
Harvested yield, tons/ac	0.00	0.78	1.11	1.08	1.60	1.58	1.19	2.34	2.12	3.06
Nitrogen credit, lbs	0	0	0	0	0	0	0	0	0	0
Forage price, \$/ton	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00
Income, \$/ac	\$0.00	\$50.77	\$72.25	\$69.89	\$103.71	\$102.39	\$77.12	\$152.35	\$137.89	\$198.80
COSTS										
Seed, \$/ac	\$0.00	\$9.00	\$22.71	\$13.26	\$14.00	\$16.28	\$4.60	\$7.15	\$19.80	\$20.40
Seeding rate, lbs/ac	0.0	30.0	59.8	51.0	10.0	22.0	10.0	5.0	15.0	15.0
Seed cost, \$/lb	\$0.00	\$0.30	\$0.38	\$0.26	\$1.40	\$0.74	\$0.46	\$1.43	\$1.32	\$1.36
Planting, \$/ac	\$11.77	0	1	1	1	1	1	1	1	1
Herbicides	\$9.03	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15	\$4.15
Herbicide application	\$4.40	2	1	1	1	1	1	1	1	1
Tillage										
Disk, \$/ac	\$7.79	0	0	0	0	0	0	0	0	0
Chisel, \$/ac	\$9.10	0	0	0	0	0	0	0	0	0
Field cultivation, \$/ac	\$7.37	0	0	0	0	0	0	0	0	0
Nitrogen removed	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$14.36	\$11.62	\$20.03	\$22.96	\$27.87
Phosphorus removed	\$0.33	\$0.00	\$3.68	\$4.04	\$3.91	\$6.37	\$4.24	\$3.03	\$6.62	\$7.99
Harvesting										
Swathing, \$/ac	\$10.03	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Sideraking, \$/ac	\$3.40	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Baling, \$/ton	\$12.44	0.00	0.78	1.11	1.08	1.58	1.19	2.34	2.12	3.06
Hauling, \$/ton	\$4.84	0.00	0.78	1.11	1.08	1.58	1.19	2.34	2.12	3.06
Total Cost	\$17.83	\$56.57	\$76.35	\$66.14	\$78.33	\$92.49	\$70.15	\$104.69	\$117.80	\$143.86
FOLLOWING CROP										
Change in expected yield, bu/ac	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price, \$/bu	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35
Increased income, \$/ac	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Marginal cost, \$/bu										
Nitrogen	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Phosphorus	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Harvesting	\$0.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Increased cost, \$/ac	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Net Returns to Forage Crop	-\$17.83	-\$5.80	-\$4.09	\$3.75	\$25.37	\$9.90	\$6.97	\$47.65	\$20.09	\$54.93
Improvement from Control	xxx	\$12.03	\$13.74	\$21.58	\$43.20	\$27.73	\$24.80	\$65.48	\$37.92	\$72.76
Breakeven forage price, \$/ton	xxx	\$49.60	\$52.64	\$44.93	\$37.92	\$47.39	\$44.10	\$37.06	\$47.13	\$41.21
Breakeven forage yield, tons/ac	xxx	0.53	0.82	0.62	0.69	0.99	0.67	0.97	1.33	1.53

Table 6. Economics of Double-crop Summer Forages after Wheat -- KSU Hesston Experiment Field
Scenario #4: No nitrogen credit for legumes & no impact on yield of following crop -- increase all costs by 25% (except fertilizer removal)

	<u>Double-crop Forage</u>									
	Control	Cowpea	Soybean	Forage soybean	Sunn Hemp	Sunflower	Pearl millet	Grain sorghum	Sudangrass	Sorghum x sudangrass
INCOME										
Yield, DM tons	0.00	1.16	1.65	1.60	2.37	2.34	1.76	3.48	3.15	4.54
Harvested yield, tons/ac	0.00	1.04	1.48	1.43	2.13	2.10	1.58	3.13	2.83	4.08
Nitrogen credit, lbs	0	0	0	0	0	0	0	0	0	0
Forage price, \$/ton	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00	\$65.00
Income, \$/ac	\$0.00	\$67.69	\$96.34	\$93.19	\$138.28	\$136.52	\$102.83	\$203.13	\$183.85	\$265.06
COSTS										
Seed, \$/ac	\$0.00	\$11.25	\$28.38	\$16.58	\$17.50	\$20.35	\$5.75	\$8.94	\$24.75	\$25.50
Seeding rate, lbs/ac	0.0	30.0	59.8	51.0	10.0	22.0	10.0	5.0	15.0	15.0
Seed cost, \$/lb	\$0.00	\$0.38	\$0.48	\$0.33	\$1.75	\$0.93	\$0.58	\$1.79	\$1.65	\$1.70
Planting, \$/ac	\$14.71	0	1	1	1	1	1	1	1	1
Herbicides	\$11.29	\$5.19	\$5.19	\$5.19	\$5.19	\$5.19	\$5.19	\$5.19	\$5.19	\$5.19
Herbicide application	\$5.50	2	1	1	1	1	1	1	1	1
Tillage										
Disk, \$/ac	\$9.74	0	0	0	0	0	0	0	0	0
Chisel, \$/ac	\$11.38	0	0	0	0	0	0	0	0	0
Field cultivation, \$/ac	\$9.21	0	0	0	0	0	0	0	0	0
Nitrogen removed	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$19.14	\$15.50	\$26.70	\$30.61	\$37.16
Phosphorus removed	\$0.33	\$0.00	\$4.91	\$5.39	\$5.21	\$8.49	\$5.65	\$4.05	\$8.83	\$10.66
Harvesting										
Swathing, \$/ac	\$12.54	0	1	1	1	1	1	1	1	1
Sideraking, \$/ac	\$4.25	0	1	1	1	1	1	1	1	1
Baling, \$/ton	\$15.55	0.00	1.04	1.48	1.43	2.13	2.10	1.58	2.83	4.08
Hauling, \$/ton	\$6.05	0.00	1.04	1.48	1.43	2.13	2.10	1.58	2.83	4.08
Total Cost	\$25.11	\$97.01	\$126.52	\$113.23	\$136.17	\$154.59	\$120.74	\$181.58	\$195.12	\$241.97
FOLLOWING CROP										
Change in expected yield, bu/ac	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price, \$/bu	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35	\$3.35
Increased income, \$/ac	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Marginal cost, \$/bu										
Nitrogen	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Phosphorus	\$0.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Harvesting	\$0.30	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Increased cost, \$/ac	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Net Returns to Forage Crop	-\$25.11	-\$29.32	-\$30.18	-\$20.04	\$2.11	-\$18.07	-\$17.91	\$21.55	-\$11.27	\$23.10
Improvement from Control	xxx	-\$4.21	-\$5.07	\$5.07	\$27.22	\$7.04	\$7.20	\$46.66	\$13.84	\$48.20
Breakeven forage price, \$/ton	xxx	\$69.04	\$68.42	\$61.46	\$52.20	\$61.65	\$60.45	\$50.07	\$60.11	\$53.18
Breakeven forage yield, tons/ac	xxx	1.14	1.60	1.32	1.50	1.94	1.42	2.05	2.51	2.97

Summary ...

- **Current and expected future high commodity prices provide an opportunity to increase returns by intensifying land use (i.e., double cropping).**
- **Returns to double cropping summer forages after wheat are highly variable depending on crop and year and individual producer situation.**
- **With high fertilizer prices, producers need to consider the cost of nutrients removed with forage crop.**
- **Realizing higher returns from forage crop could be higher for livestock producers if difficulties exist with marketing a forage crop.**



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