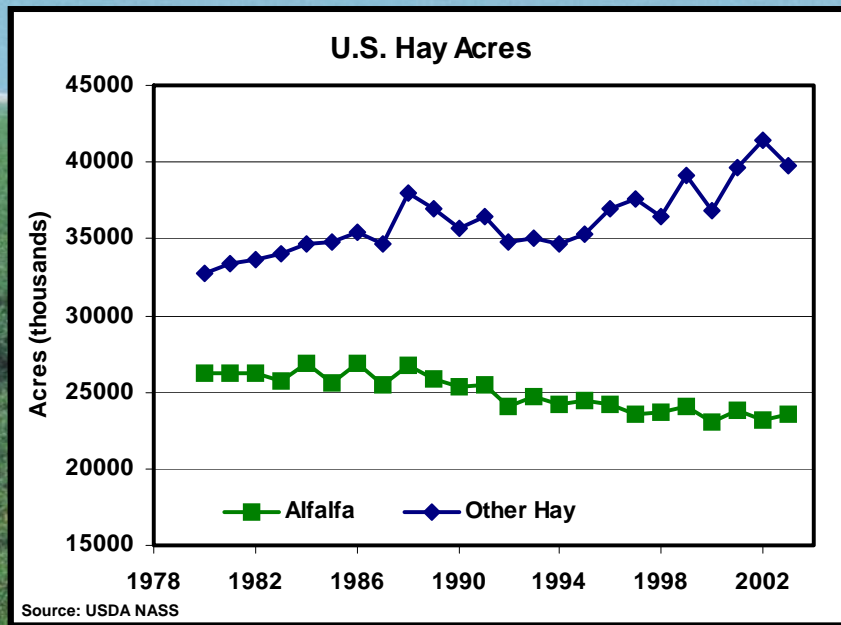
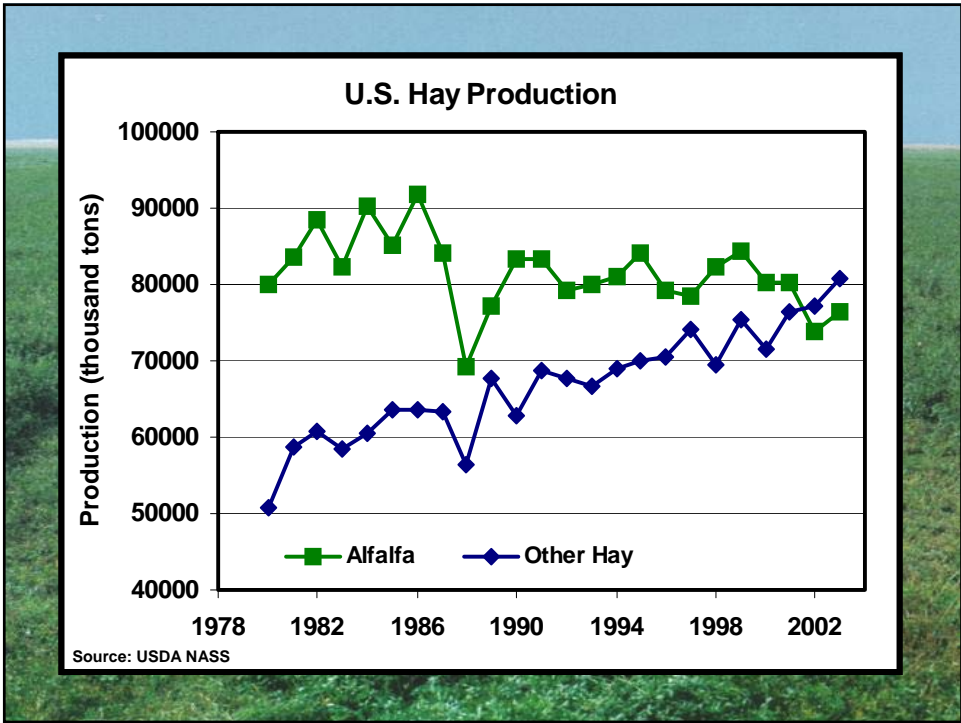
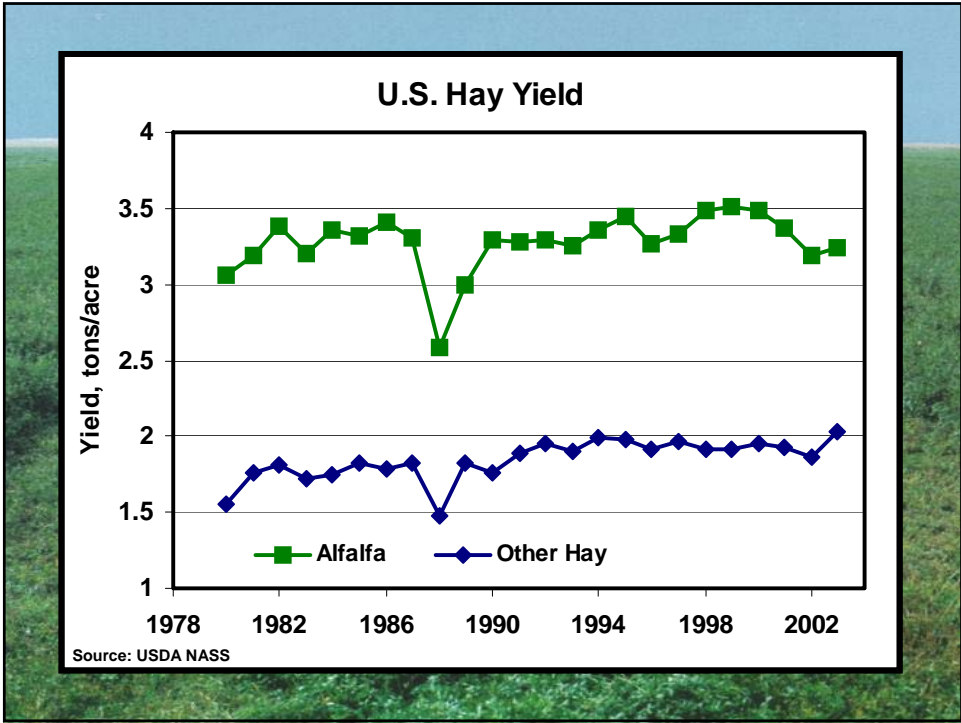


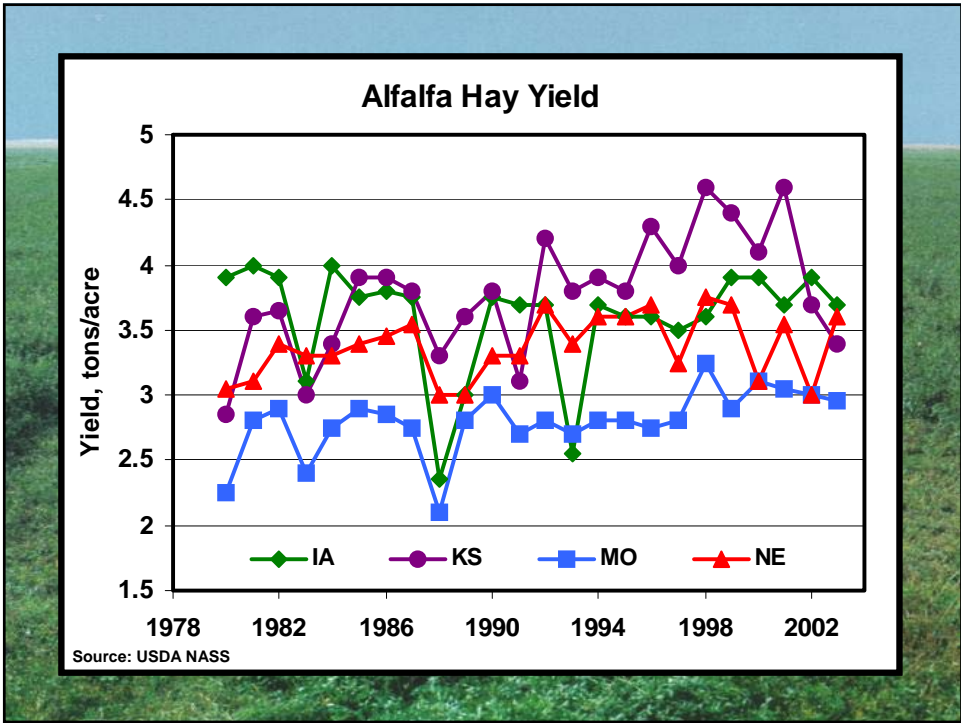
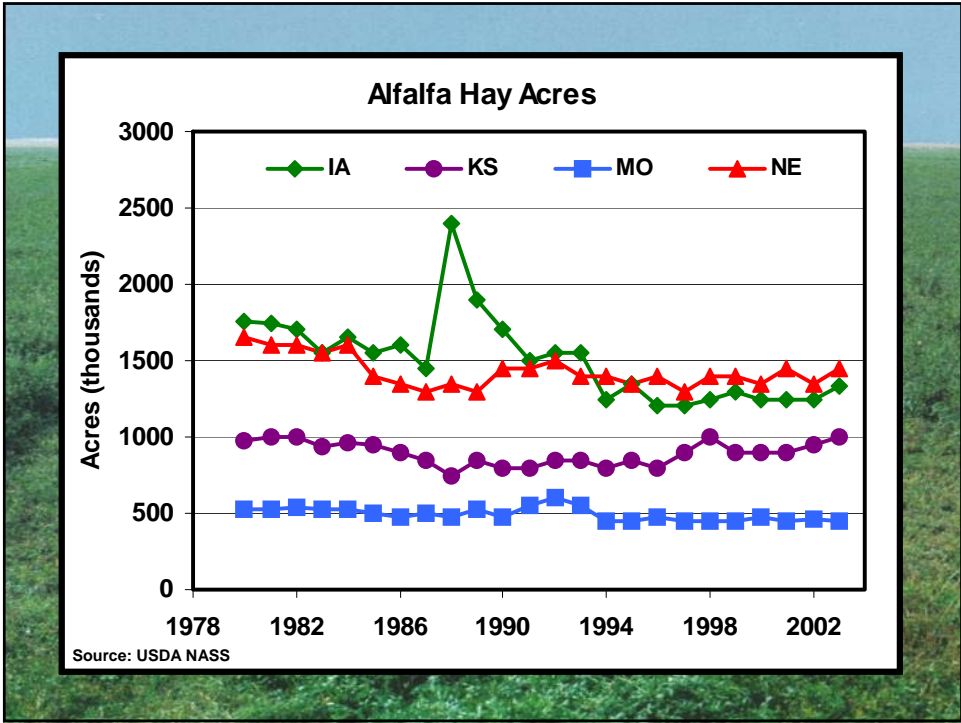
Economics of Hay Production

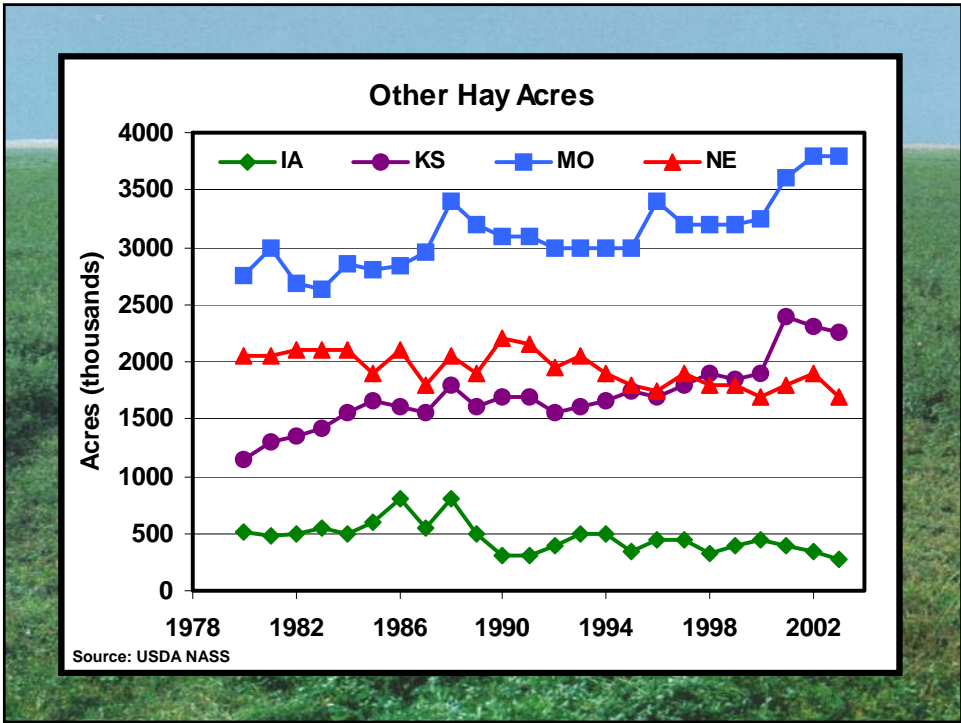
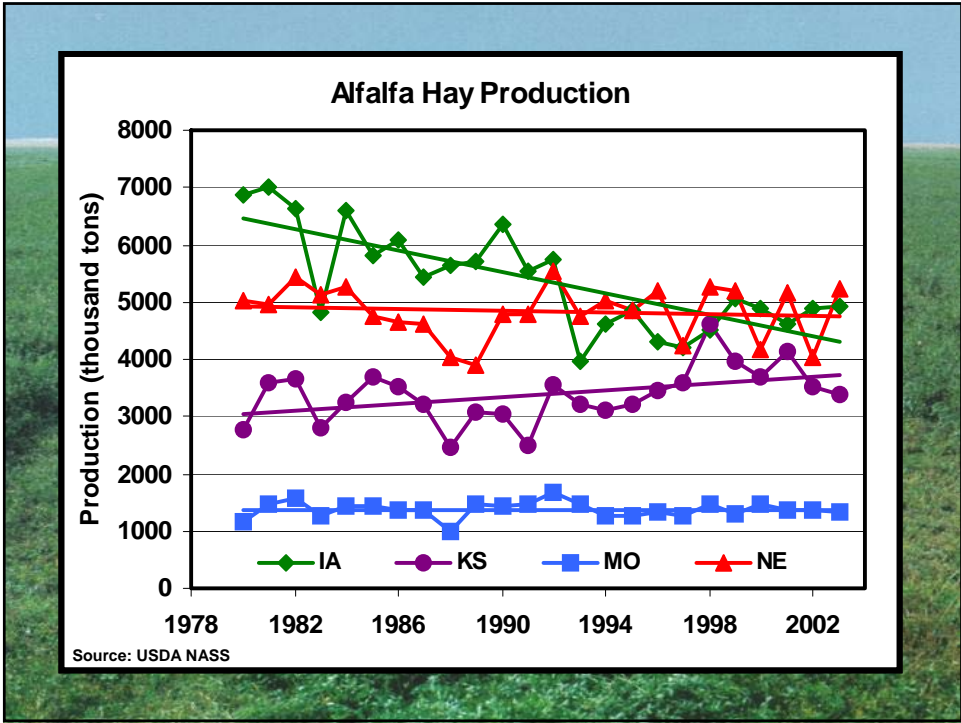
Kevin C. Dhuyvetter
kcd@ksu.edu --- 785-532-3527
Department of Agricultural Economics
Kansas State University

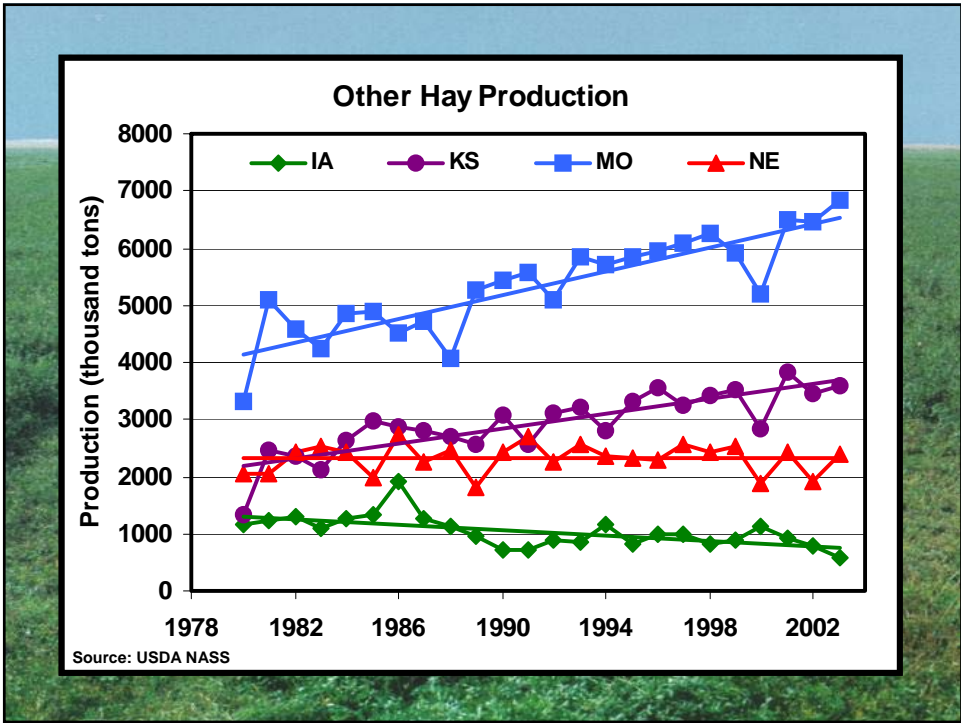
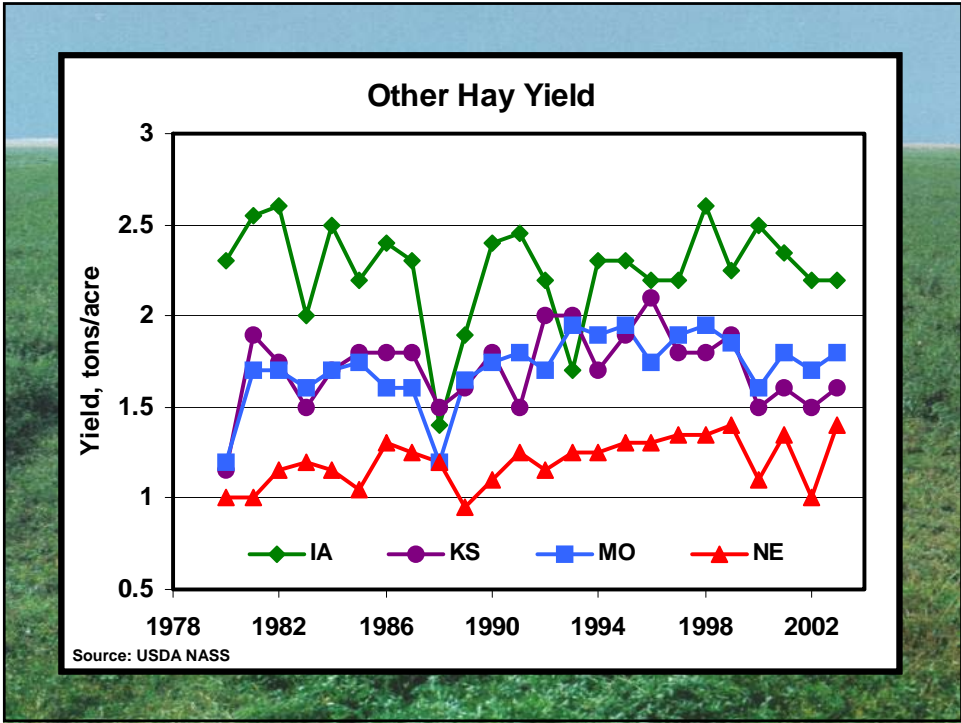
Presented at 2004 Hay Business Conference and Expo
Overland Park, KS. March 9-10, 2004











Hay Considerations

- Profitability vs. other crops
 - ➔ Factors impacting profit
 - ➔ Short run vs. long run

Costs of alfalfa vs grain crops...

Kansas Farm Management Association Enterprise Analysis Nonirrigated Crops -- State Averages, 1999-2001

	Corn	Sorghum	Wheat	Soybean	Alfalfa	
Number of Farms	102	246	391	187	81	Total Ac
Average Acres	277	293	544	344	142	1,600
Costs, \$ per Acre						Wtd Avg
Seed	\$25.38	\$8.04	\$5.11	\$19.42	\$6.57	\$12.36
Fertilizer	30.12	20.36	15.32	3.28	8.56	15.62
Herb-Ins	21.85	17.72	4.47	18.45	10.77	13.47
Crop Ins	3.27	2.63	3.02	2.86	0.23	2.71
Machinery	79.27	61.37	58.97	65.59	75.62	65.83
Other	21.99	17.78	16.51	18.85	22.26	18.70
Land	30.00	18.13	16.35	20.26	37.00	21.72
Interest	19.17	14.18	12.42	15.85	16.58	15.02
Total Cost	\$231.06	\$160.22	\$132.16	\$164.56	\$177.59	\$165.42
Machinery, %	34.3%	38.3%	44.6%	39.9%	42.6%	39.8%

Factors leading to profitability differences...

Comparison of High-, Mid-, and Low-Profit KFMA State Enterprises, 1999-2001^a

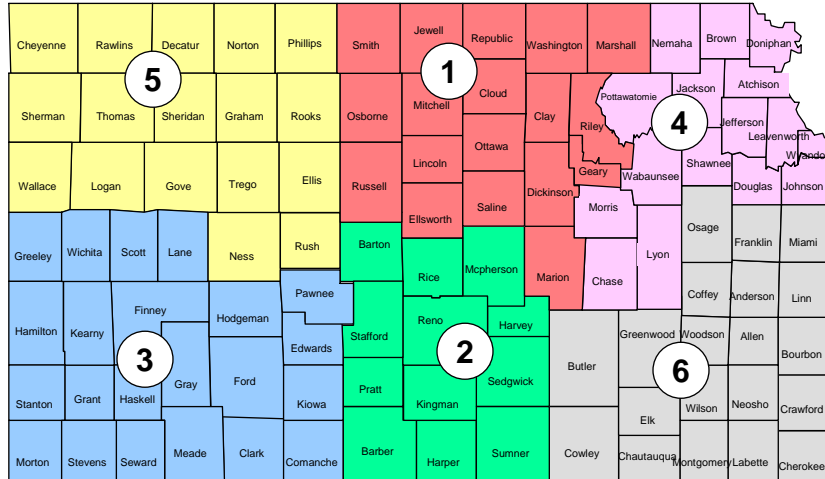
	Yield			Selling Price			Gross Income		
	High 1/3	Mid 1/3	Low 1/3	High 1/3	Mid 1/3	Low 1/3	High 1/3	Mid 1/3	Low 1/3
Wheat	43.7	41.2	39.8	\$2.56	\$2.53	\$2.55	\$130.68	\$122.59	\$124.97
Irrigated wheat	55.9	54.3	55.2	\$2.43	\$2.53	\$2.51	\$140.90	\$160.31	\$167.12
Grain sorghum	76.0	71.8	63.0	\$1.86	\$1.71	\$1.69	\$147.44	\$134.73	\$133.58
Corn	111.6	96.1	94.2	\$1.92	\$1.90	\$1.83	\$213.78	\$196.65	\$194.40
Irrigated corn	186.7	176.1	177.2	\$1.99	\$1.95	\$2.08	\$402.98	\$387.67	\$407.55
Soybeans	30.2	26.2	25.1	\$4.39	\$4.37	\$4.40	\$158.97	\$143.97	\$139.45
Alfalfa	4.0	3.0	3.0	\$66.80	\$64.84	\$66.55	\$272.99	\$193.34	\$193.46

	Enterprise Acres			Total Cost			Profit		
	High 1/3	Mid 1/3	Low 1/3	High 1/3	Mid 1/3	Low 1/3	High 1/3	Mid 1/3	Low 1/3
Wheat	683	589	360	\$103.84	\$124.93	\$167.91	\$26.84	(\$2.34)	(\$42.94)
Irrigated wheat	209	338	140	\$109.47	\$172.19	\$214.39	\$31.43	(\$11.88)	(\$47.27)
Grain sorghum	365	299	214	\$129.16	\$148.96	\$202.55	\$18.28	(\$14.23)	(\$68.97)
Corn	309	306	216	\$196.08	\$219.90	\$277.19	\$17.70	(\$23.25)	(\$82.79)
Irrigated corn	472	449	371	\$334.45	\$378.38	\$467.32	\$68.53	\$9.29	(\$59.77)
Soybeans	404	344	283	\$140.21	\$157.37	\$196.51	\$18.76	(\$13.40)	(\$57.06)
Alfalfa	106	182	139	\$159.23	\$148.79	\$224.76	\$113.76	\$44.55	(\$31.30)

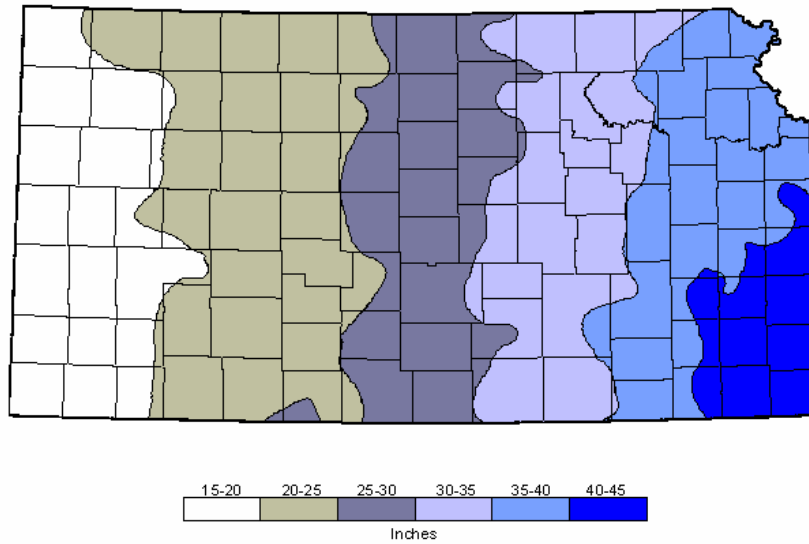
^a Shaded areas indicate the "best" (high or low) for the category.



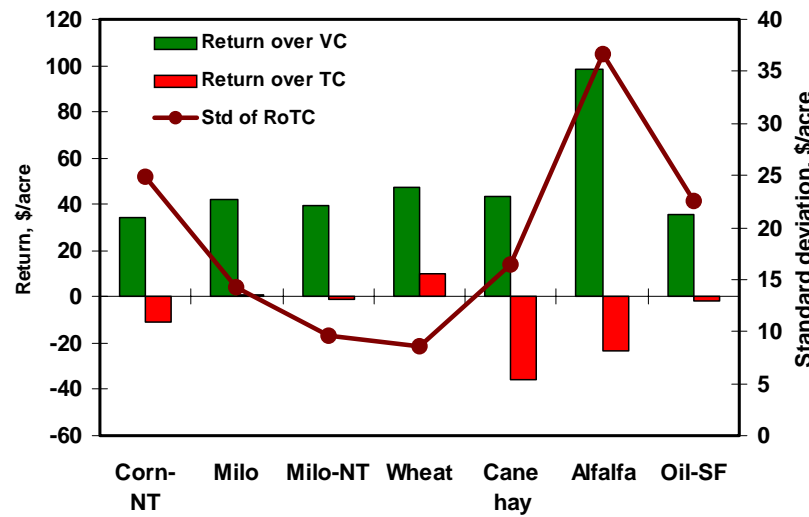
Kansas Farm Management Regions

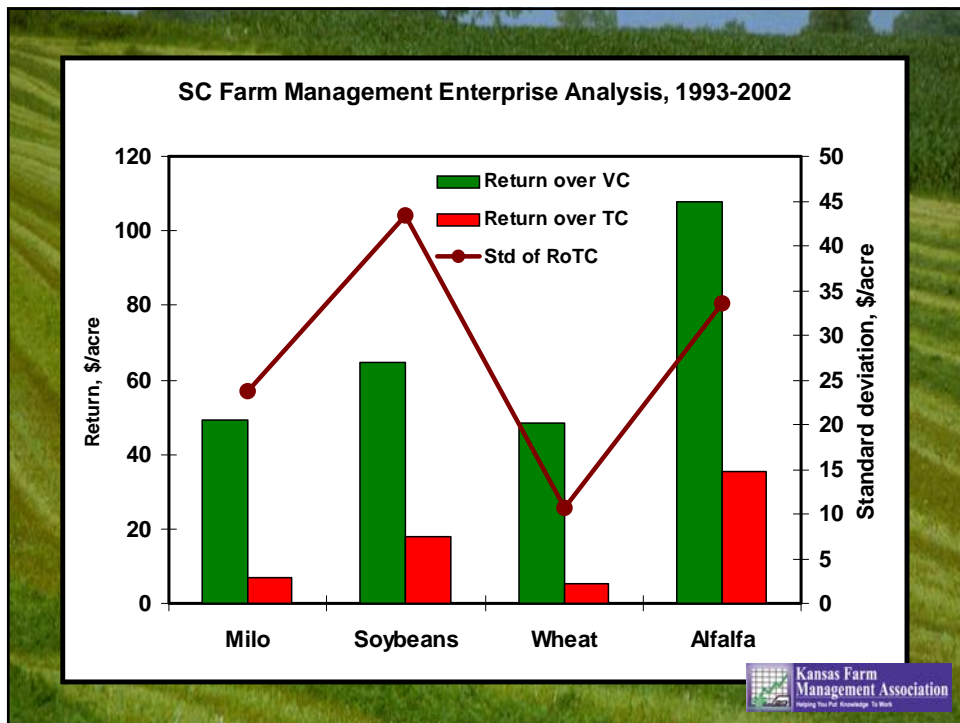
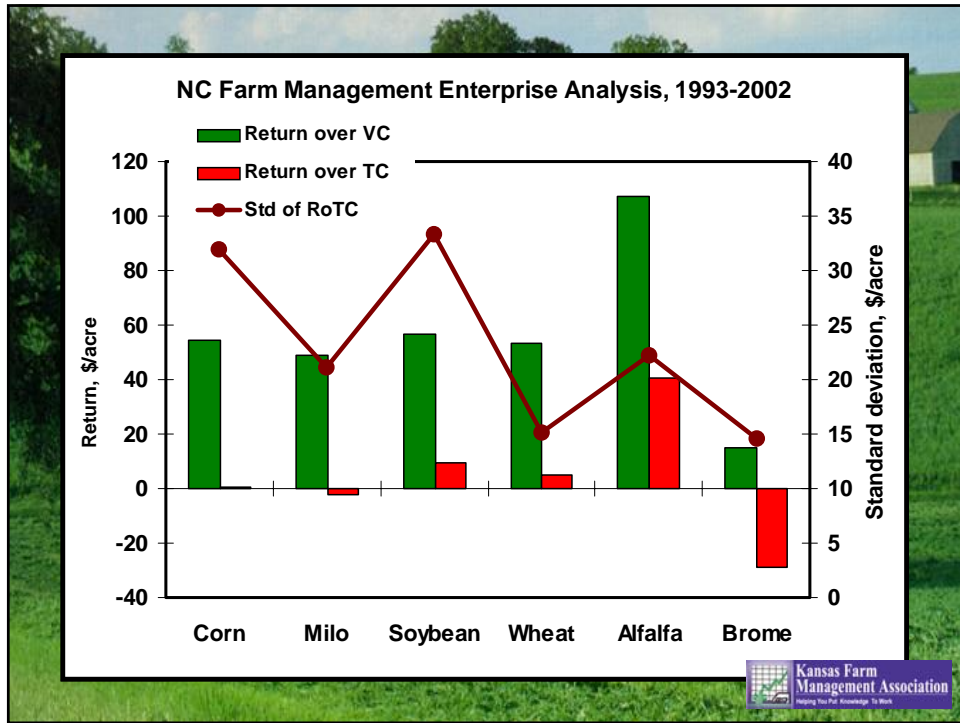


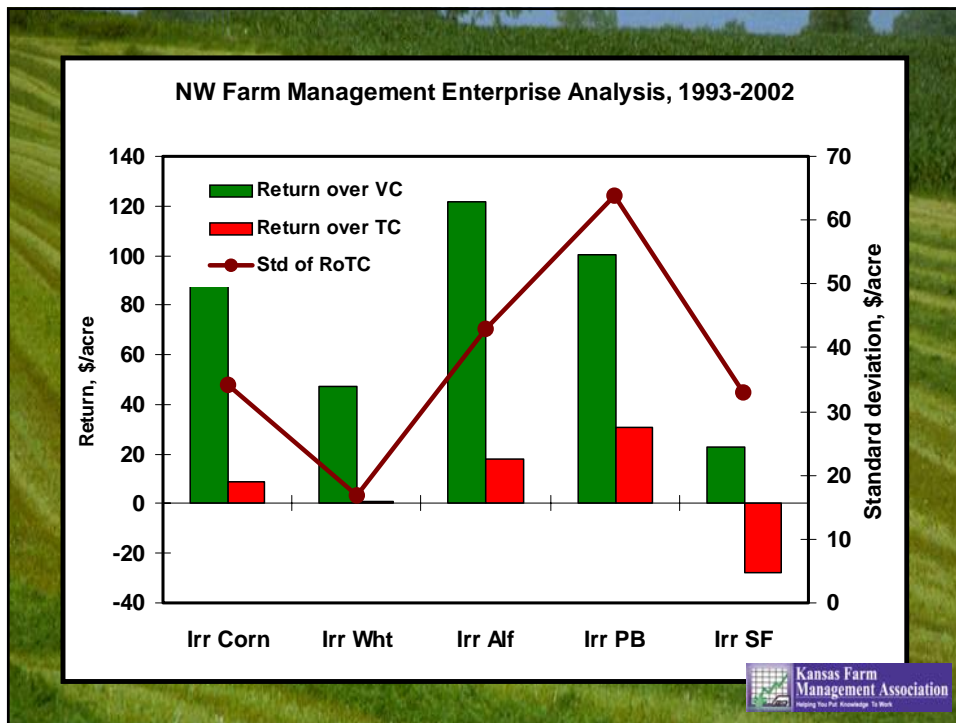
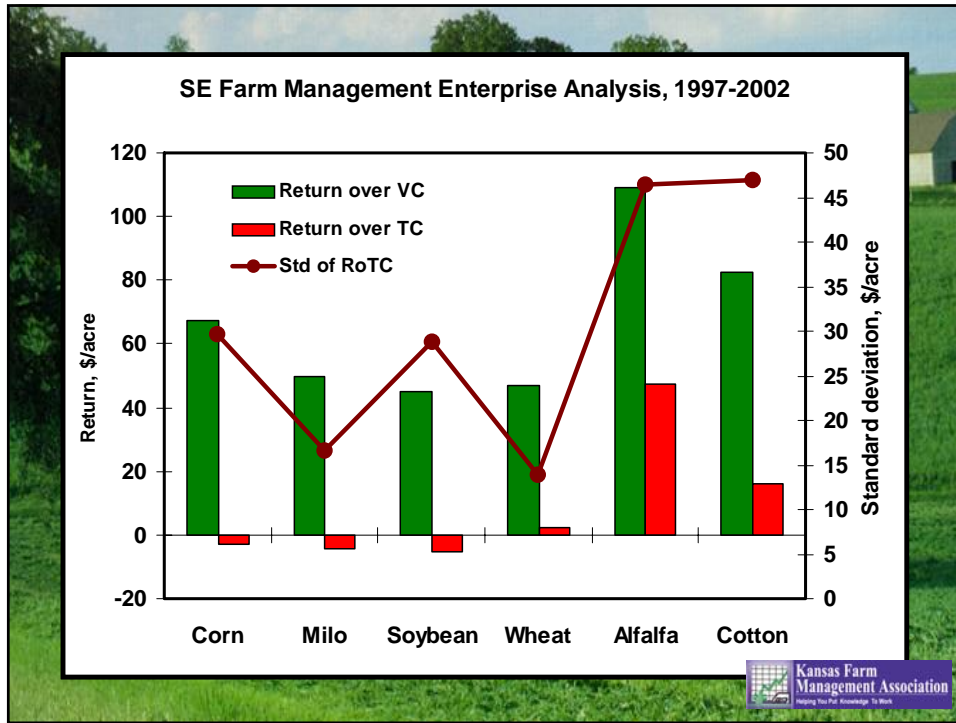
Kansas Annual Precipitation, 1961-90

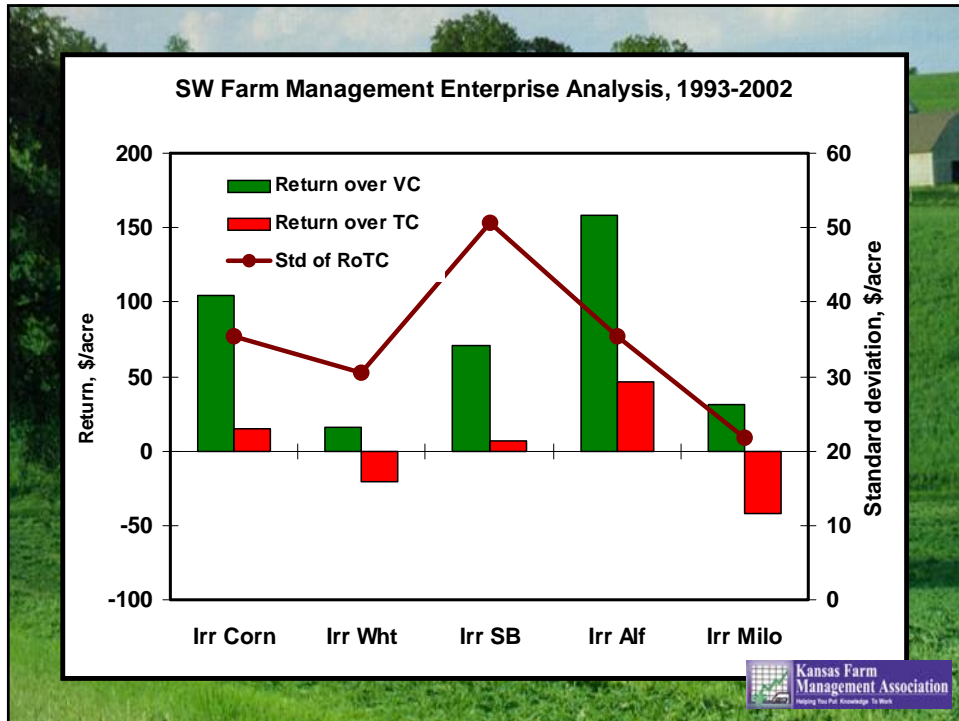


NW Farm Management Enterprise Analysis, 1993-2002









Hay Considerations

- **Profitability vs. other crops**
 - ➔ **Short run vs. long run**
 - ➔ **Comparable land**
 - ➔ **Owned vs. leased land**

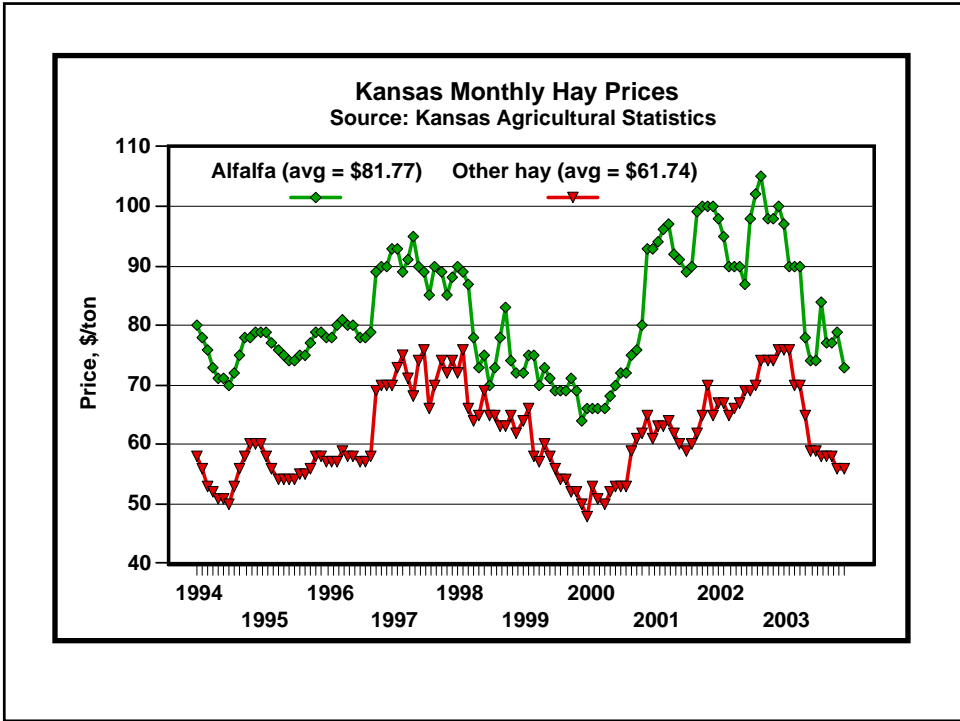
Alfalfa and crop share leases

- Equitable crop share arrangement for wheat milo rotation --- 33.3/66.7 (fertilizer, insecticide and herbicides shared).
- Equitable arrangement for alfalfa --- 21/79 (fertilizer, insecticide and herbicides shared, tenant pays seed expense). If landowner pays for seed, equitable split is 26/74.¹

¹ Based on 2003 NC Kansas K-State FM Guides for average quality land and assuming land is of comparable quality.

Hay Considerations

- Profitability vs. other crops
- **Marketing**
 - ➔ **Price and price quotes**



http://www.ams.usda.gov/mnreports/DC_GR310.txt - Microsoft Internet Explorer

Address: http://www.ams.usda.gov/mnreports/DC_GR310.txt

DC_GR310
Dodge City, KS Fri Mar 5, 2004 USDA-KS Dept of Ag Market News

Kansas Hay Market Report

Prices are dollars per ton and FOB unless otherwise noted. Dairy alfalfa prices are for mid and large squares unless otherwise noted. Horse hay is in small squares unless otherwise noted. Prices are from the most recent sales.

Ground alfalfa movement: Southwest/South Central
Tonnage: 12,082/4,547 Last week: 12,412/4,949 Last year: 11,799/4,312

Hay trade slow. Demand moderate to light for all classes and types of hay.

Southwest Kansas

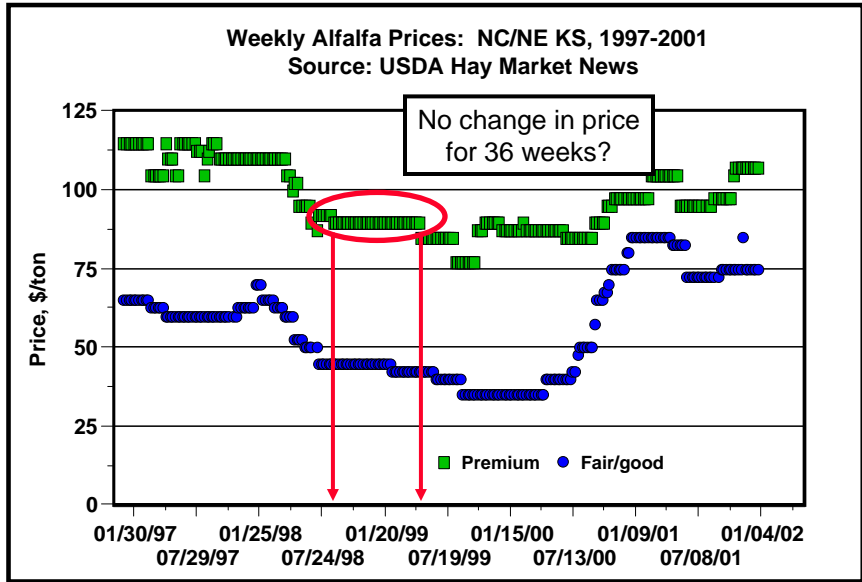
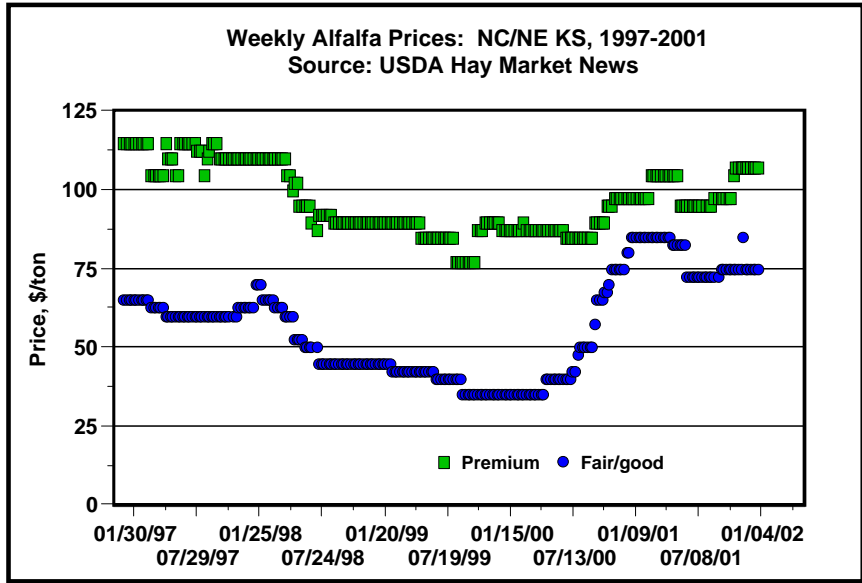
Dairy and grinding alfalfa steady. Movement slow to moderate. Alfalfa: Horse, Fair-Supreme 100.00-150.00, Dairy, Supreme 100.00-110.00, (RFV 195-240); Premium 80.00-105.00 (RFV 170-185); Good, 80.00-90.00 (RFV 150-170); Fair, 70.00-80.00 (RFV 140-150). Utility-Fair grinding alfalfa at the edge of the field 55.00-65.00, mostly 60.00; Ground and delivered to feedlots, 75.00-82.00. The week of 2/23-28, 12,082T of alfalfa was ground and delivered to feedlots. Cane and Sudan, large bales 50.00; BMR Fair 50.00-55.00, Good 60.00-65.00 delivered. The average paid by feedlots on March 1 for alfalfa ground and delivered was 79.15, up 24 cents from last month, this includes spot trade and contracts, usage was 1,301T/day, down 1%, total usage was 37,727T compared to 31,708T last year.

South Central Kansas

Dairy and grinding alfalfa and alfalfa pellets steady. Movement slow to moderate. Alfalfa: Horse, 105.00-130.00; Dairy, Supreme 100.00-115.00 (RFV >185); Premium 90.00-105.00 (170-185 RFV); 50-53 cents/point 160-170 RFV; Good, 75.00-100.00 (RFV 150-170); Utility-Fair grinding alfalfa at the edge of the field, 45.00-60.00; Ground and delivered 70.00-75.00. The week of 2/23-28, 4,547T of grinding alfalfa and 1,615T of dairy alfalfa were delivered. Alfalfa pellets: Sun cured 15 pct protein 95.00-106.00, 17 pct 102.00-105.00; Dehydrated 17 pct 115.00. The average paid by feedlots on March 1 for alfalfa ground and delivered was 73.49, down 94 cents, usage was 396T/day, up 3%, total usage was 11,496T compared to 10,450T last year.

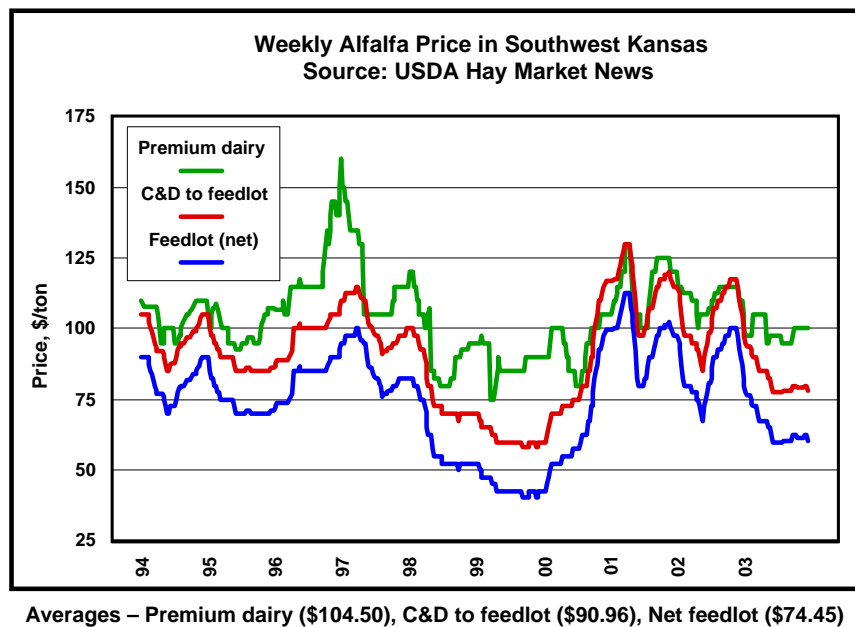
Done

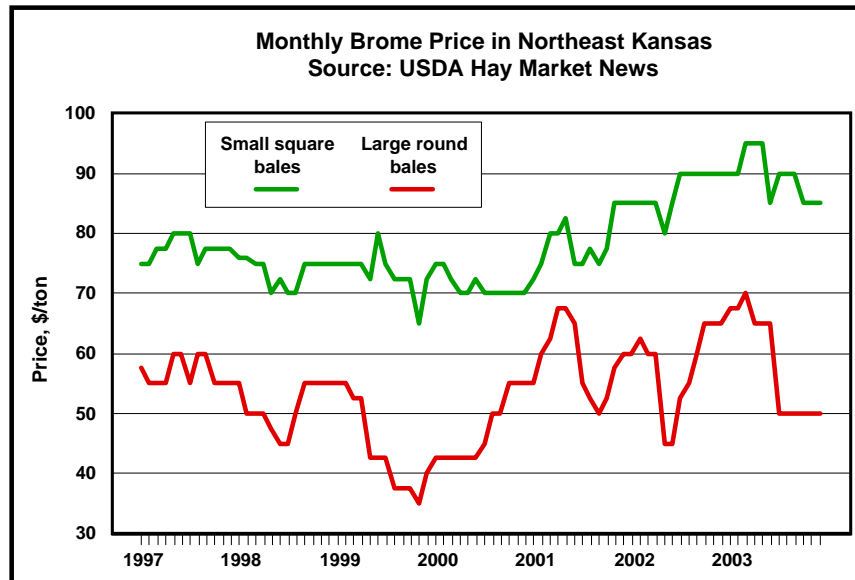
start | Windows Explorer | Hay & Forage C... | Internet Exp... | untkled - Part | 4:26 PM



Alfalfa Considerations

- Profitability vs. other crops
- **Marketing**
 - ➔ Price and price quotes
 - ➔ Hay quality
 - ➔ Harvest method (bale type)





Averages – Small square bales (\$77.79), Large round bales (\$52.82)

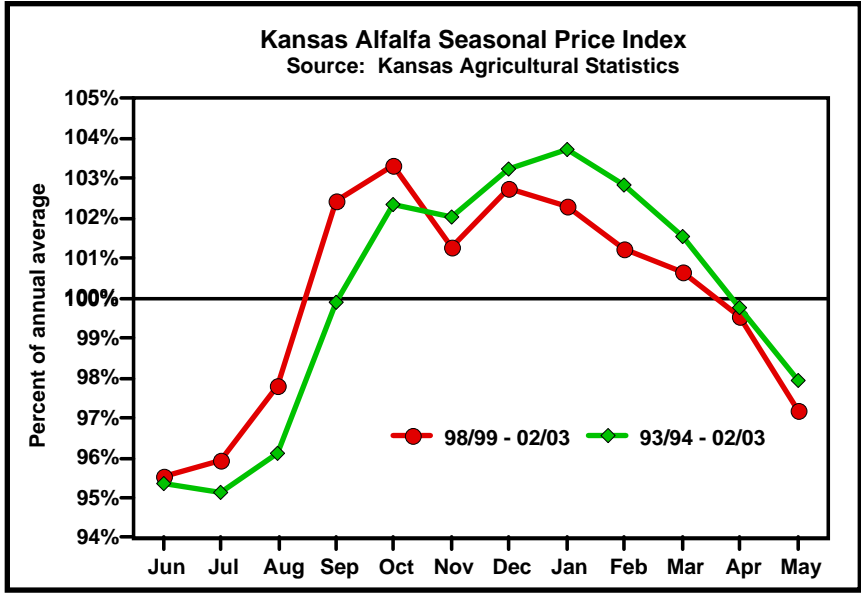
Alfalfa pricing Considerations

- **Research results suggest¹**
 - ➔ **Premiums paid for larger lots**
 - ➔ **Large square discount of ~\$2.15/T (ns)**
 - ➔ **Large round bales discount of ~\$16/T**
 - ➔ **Relationship between quality characteristics and price is stronger with high quality hay**
 - ➔ **Pricing system that accounts for specific levels of CP, ADF, NDF was only slightly better than one based solely on RFV**

¹ Hopper, Peterson, and Burton (KSU)

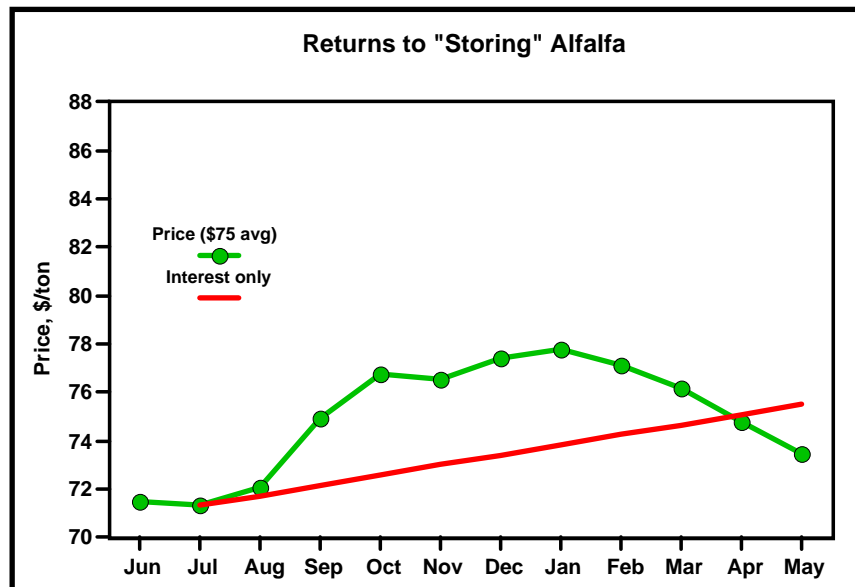
Alfalfa Considerations

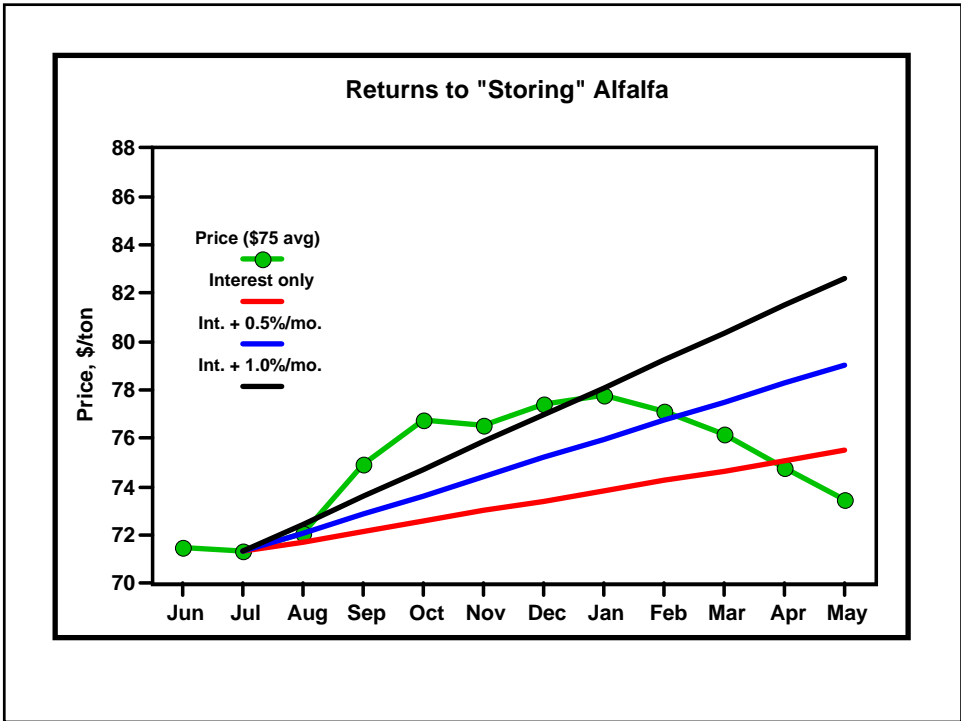
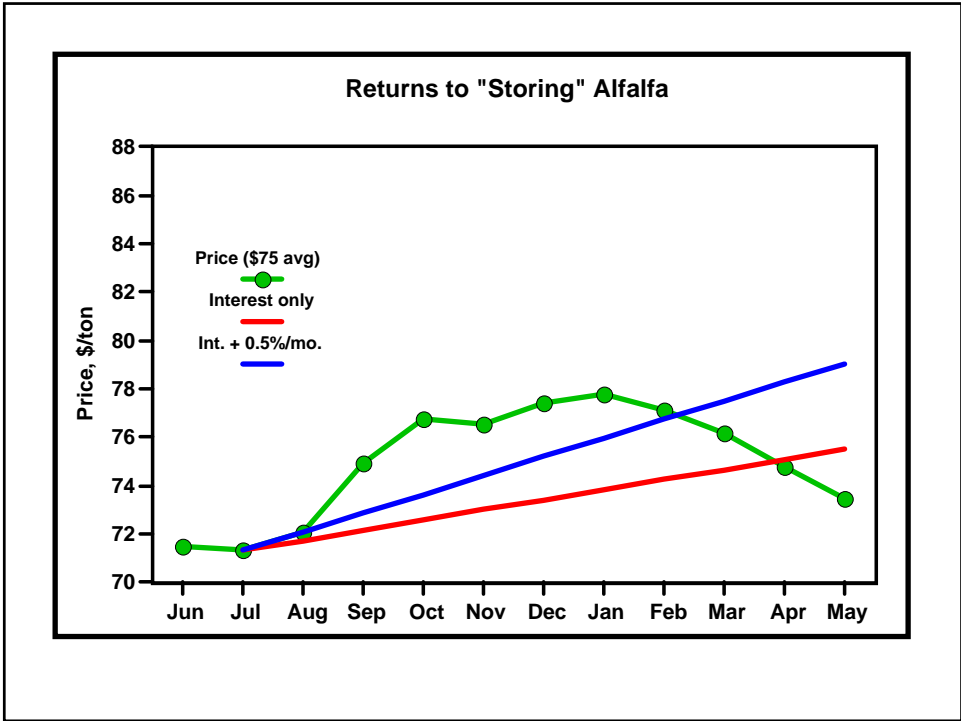
- Profitability vs. other crops
- **Marketing**
 - ➔ Price and price quotes
 - ➔ Hay quality
 - ➔ Harvest method (bale type)
 - ➔ Storage/timing

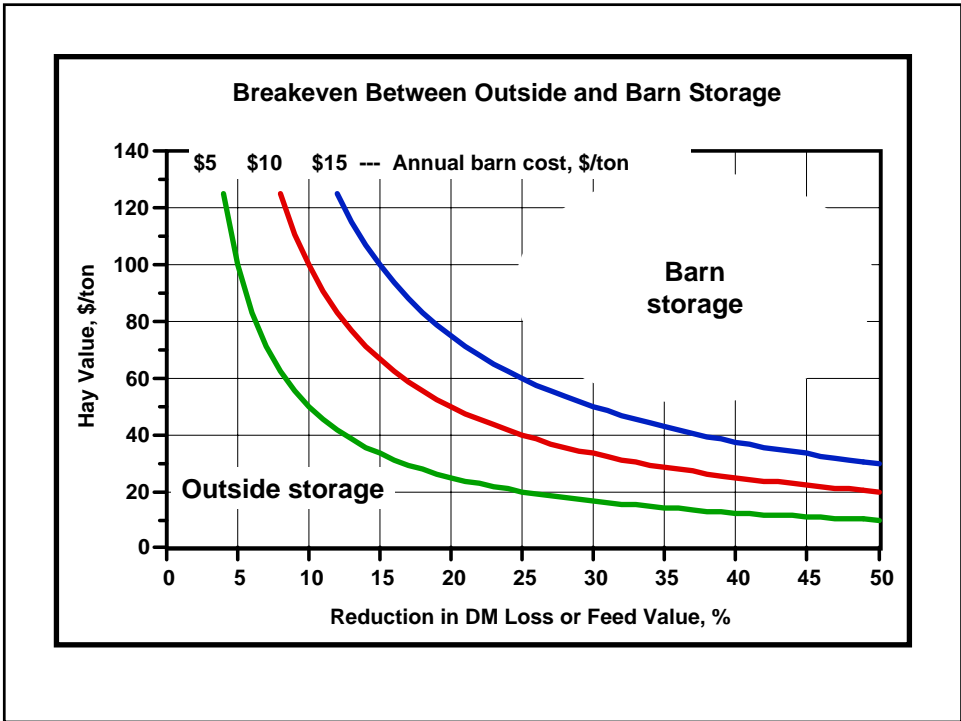
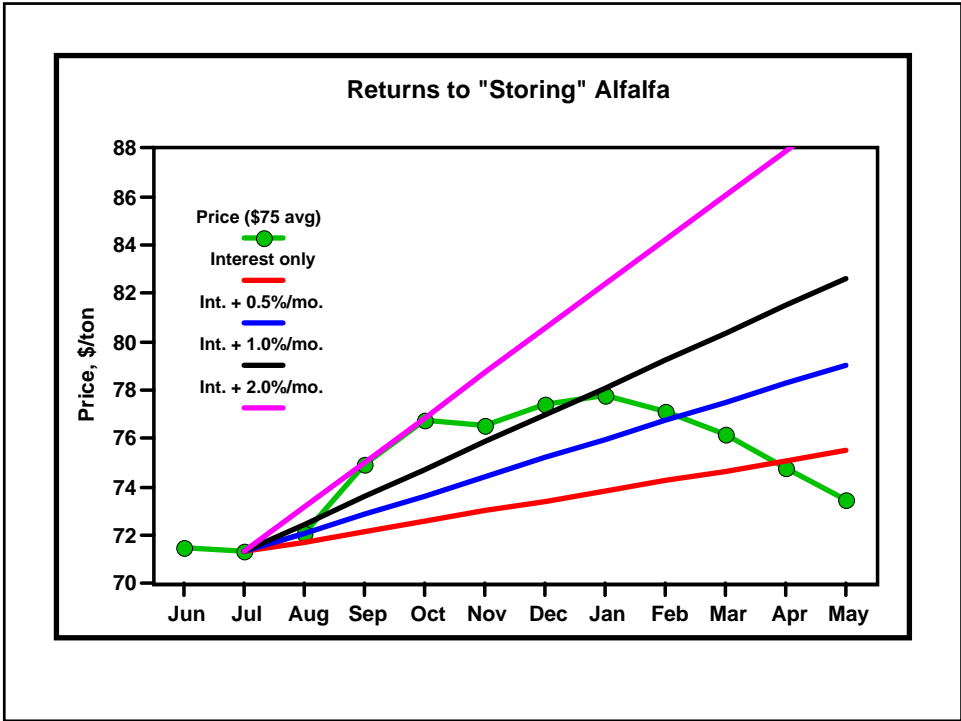


Effect of market timing

- Annual price = \$75/ton
 - June-July = 95% = \$71.25/ton
 - Nov-Jan = 103% = \$77.25/ton
- ➔ \$6.00/ton premium to “storing” due to seasonality.
- ➔ Costs of “storing” alfalfa are interest, shrink, and/or quality loss.







Alfalfa Considerations

- Profitability
- Marketing
- **Equipment**
 - ➔ Type
 - ➔ Economies of size
 - ➔ Own versus hire



Equipment Considerations

Figure 3. Cost Comparison of Mowing Systems

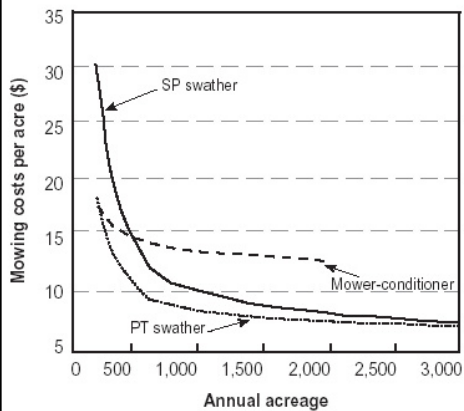
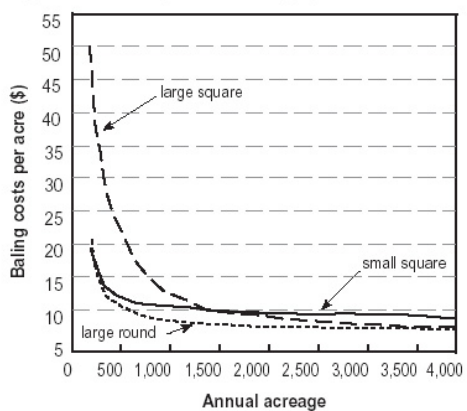
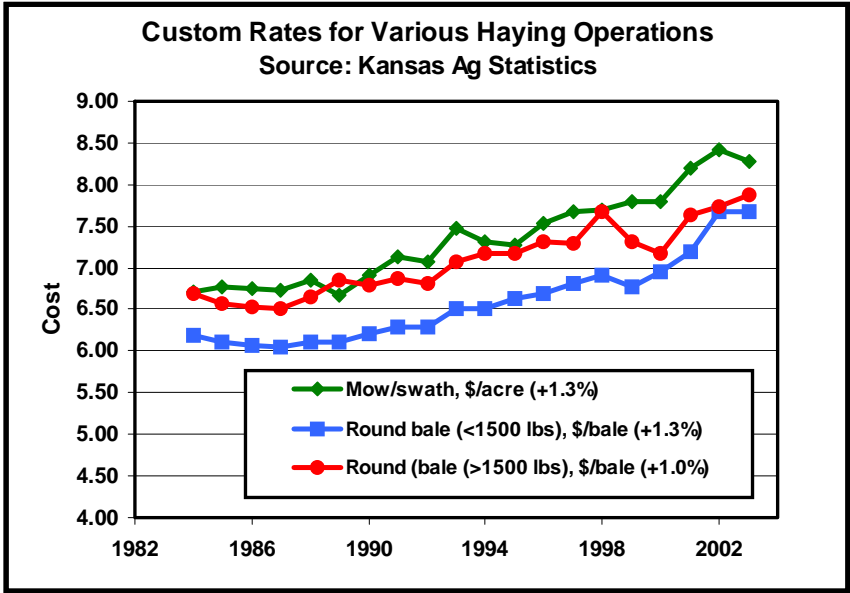


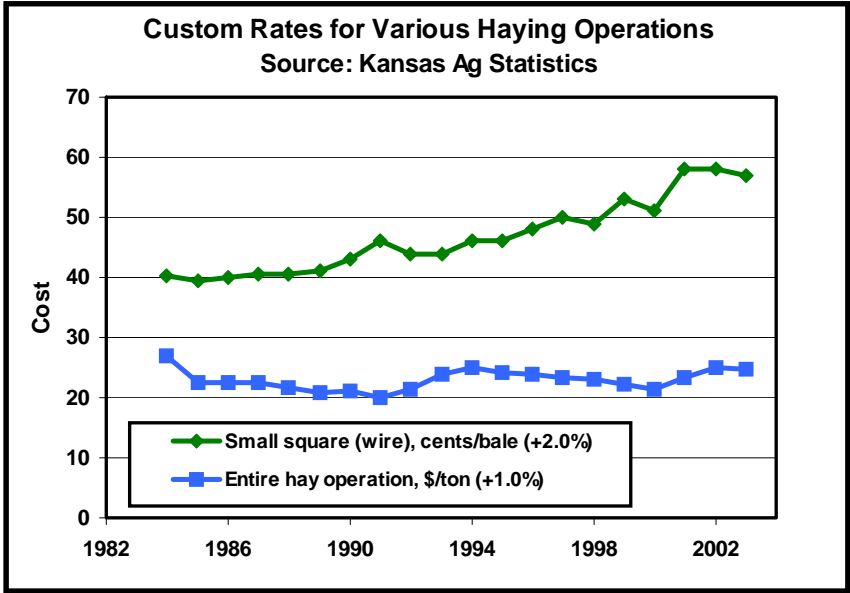
Figure 4. Cost Comparison of Baling Systems



Source: K-State Alfalfa Production Handbook, C-683 (Taylor)



Average inflation from 1984-2003 = 3.9%



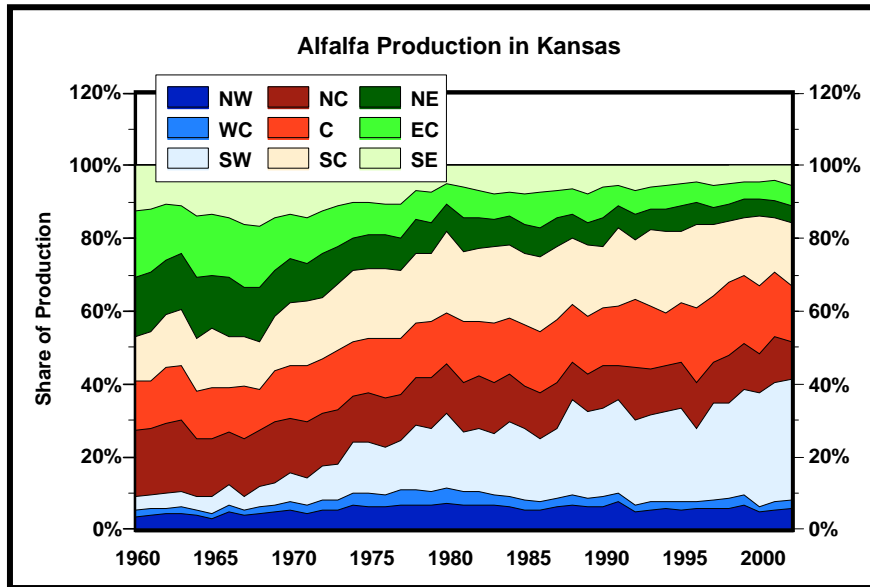
Average inflation from 1984-2003 = 3.9%

Alfalfa Considerations

- Profitability
- Marketing
- Equipment
- **Management**
 - ➔ **Production**
 - ➔ **Marketing**

Alfalfa Considerations

- Profitability
- Marketing
- Equipment
- Management
- **Increase in “commercial” production**



Alfalfa Considerations

- Profitability vs. other crops
- Projected budgets and breakeven analysis
- K-State budgets
 - ➔ KFMA historical returns
 - ➔ FM Guides projected budgets
 - ➔ Various spreadsheets



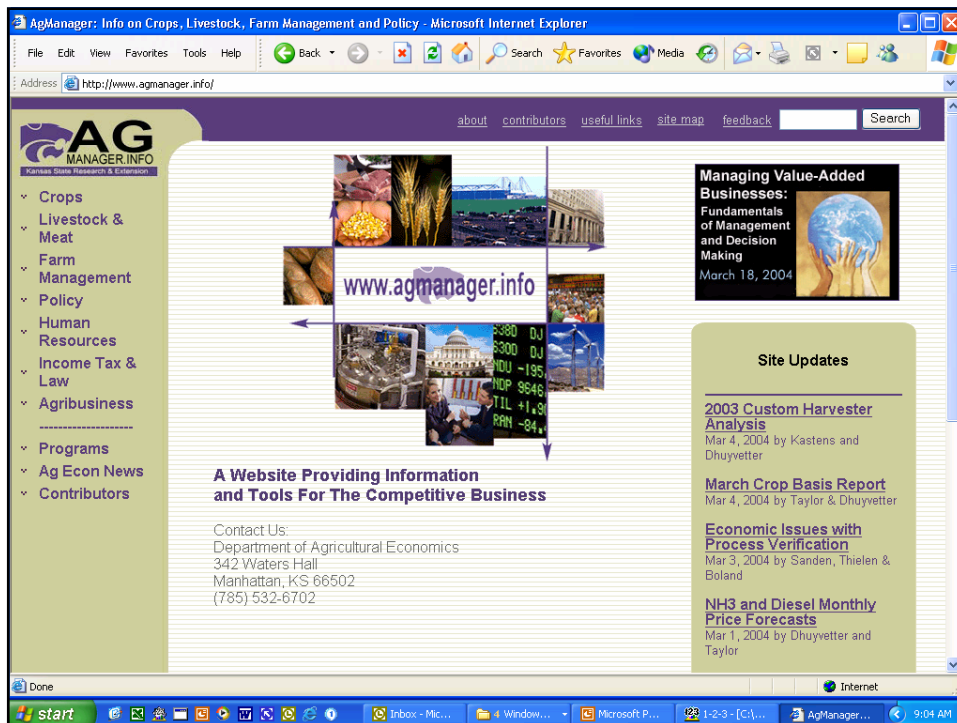
Questions ???

Kevin C. Dhuyvetter
785-532-3527
kcd@ksu.edu

Department of Agricultural Economics
Kansas State University



www.agmanager.info



The screenshot shows the AgManager website in a Microsoft Internet Explorer browser window. The address bar displays <http://www.agmanager.info/>. The website features a navigation menu on the left with categories such as Crops, Livestock & Meat, Farm Management, Policy, Human Resources, Income Tax & Law, Agribusiness, Programs, Ag Econ News, and Contributors. The main content area includes a central graphic with the text "www.agmanager.info" and a tagline: "A Website Providing Information and Tools For The Competitive Business". Below this, contact information is provided: "Contact Us: Department of Agricultural Economics, 342 Waters Hall, Manhattan, KS 66502, (785) 532-6702". On the right side, there is a section titled "Managing Value-Added Businesses: Fundamentals of Management and Decision Making" dated March 18, 2004, and a "Site Updates" section listing recent reports: "2003 Custom Harvester Analysis" (Mar 4, 2004 by Kastens and Dhuyvetter), "March Crop Basis Report" (Mar 4, 2004 by Taylor & Dhuyvetter), "Economic Issues with Process Verification" (Mar 3, 2004 by Sanden, Thielen & Boland), and "NH3 and Diesel Monthly Price Forecasts" (Mar 1, 2004 by Dhuyvetter and Taylor). The browser's taskbar at the bottom shows the Start button, several open applications, and the system clock displaying 9:04 AM.